UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL SCIENCES

Division of Social Statistics

Sociocultural barriers to family planning and contraceptive use: evidence and interventions with a focus on West Africa

by

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ABSTRACT

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SOCIOCULTURAL BARRIERS TO FAMILY PLANNING AND CONTRACEPTIVE USE: EVIDENCE AND INTERVENTIONS WITH A FOCUS ON WEST AFRICA

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This thesis examines the role of sociocultural determinants of contraceptive use, specifically exploring how these determinants may act as barriers or enablers of modern contraceptive use. It focuses on West Africa, although the results are applicable to a wide variety of countries across the globe. The thesis consists of three papers, each focusing on a different aspect of these determinants and using different methodology. Therefore the research provides different but mutually supporting information in order to understand the sociocultural barriers to the use of modern contraceptive methods and the acceptance of family planning interventions.

The first paper uses quantitative analysis of data from Demographic and Health Surveys in seven West African countries to explore the determinants of contraceptive use in the region. Using multilevel regression and by combining all seven datasets together the model explores the sociocultural determinants of contraceptive use, focusing on Values, Identity and Communication. Results from this analysis confirm the importance of accounting for community level differences in contraceptive use.

The second paper uses primary data collected in a community in Senegal, using qualitative methods to explore sociocultural barriers at the local level. Women were motivated to use modern contraception due to the health benefits birth spacing offered them. Husbands and religion were found to be the main barriers to contraceptive use. The results highlighted the dual role of sociocultural aspects in the decision to use contraception, with it being both an enabler and a barrier depending on context.

Paper three provides an understanding of previous research into overcoming sociocultural barriers at the local level, using evidence from many low and middle income countries. It explores the successes and failures of family planning interventions in overcoming sociocultural barriers in encouraging contraceptive use and highlights the commonalities of these approaches in order to highlight aspects that have worked well.

The overall conclusions are that sociocultural factors are complex and research which looks at these factors needs to explore a spectrum of associated variables. Additionally family planning interventions will only be successful when all the identified barriers within a population are accounted for.

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DECLARATION OF AUTHORSHIP

I, Megan Ledger

declare that the thesis entitled

Sociocultural barriers to family planning and contraceptive use: evidence and interventions with a focus on West Africa

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
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- I have acknowledged all main sources of help;
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- none of this work has been published before submission

Signed: …………………………………………………………………………..

Date:………………………………………………………………………….

Acknowledgements

List of Abbreviations

ACU   Accelerating Contraceptive Use

ASC   Agent de Santé Communautaire

                This is the French acronym for community based distributors.

BG   Bajenu Gox

                This is the name given to elected village women who promote
                maternal, child and infant health at multiple levels within the
                community. The BG program is a national initiative in Senegal.

CBD   Community Based Distribution

CREN   Centre for Recuperation and Nutritional Education

                This is a centre where malnourished children may receive treatment
                and support. In Senegal some, but not all, health posts are equipped
                with this facility.

CHPS   Community-based Health Planning Services

CPR   Contraceptive Prevalence Rate

DHS   Demographic and Health Survey

ESP   Essential Services Package

FGD   Focus Group Discussion

GDP   Gross Domestic Product

ICPD   International Conference on Population and Development

IEC   Information, Education and Communication

IMR   Infant Mortality Rate

IUD   Intrauterine device

LFPS	London Family Planning Summit
LMIC	Low and Middle-Income Countries
MDGs	Millennium Development Goals
PoA	Program of Action
PCA	Principal Component Analysis
PQL `	Penalised Quasi Likelihood
PSU	Primary Sampling Unit
SDHS	Senegal Demographic and Health Survey
SSA	Sub-Saharan Africa
STIs	Sexually Transmitted Infections
TFR	Total Fertility Rate

List of Organisations

ASBEF   Association Sénégalaise pour le Bien-Etre Familial

A national non-governmental organisation in Senegal which provides sexual and reproductive health services.

ANSD   Agence Nationale de la Statistique et de la Démographie

This is the national statistics agency for Senegal.

CEFOREP   Centre Régional de Formation, de Recherche et de Plaidoyer en Sante de la Reproduction

This is the regional centre for training, research and advocacy in reproductive health. It is based in Dakar, Senegal but its activities extend to other parts of Africa.

CNRS   Conseil National de Recherché en Santé

This is the national council for health research in Senegal. Ethnical clearance was obtained from this regulatory body in order to undertake the fieldwork presented in Paper 2.

IPPF   International Planned Parenthood Federation

This is a global non-governmental organisation which promotes sexual and reproductive health.

JGI   Jane Goodall Institute

A global organisation focused on empowering people to make a difference through conservation, research and education.

LuxDev   This organisation is an agency that implements development interventions in partnership with member countries, whereby

cooperative approaches enable primary ownership of development programs within these countries.

NGO   Non-governmental organisation

Not for profit organisation which can operate on a local, national or international level.

PLAN   Promoting child rights to end child poverty

PLAN works in 50 countries across Africa to ensure that children realise their full potential through improvements in their quality of life. They are also involved with promoting the rights of children.

TACARE   Lake Tanganyika Catchment, Reforestation and Education program

A pilot project designed by JGI to address poverty in the area surrounding Lake Tanganyika in Tanzania, whilst supporting sustainable living.

UNFPA   United Nations Population Fund

Used to be called the United Nations Fund for Population Activities, and the acronym was not changed. Their work serves to promote the rights of children, women and men to health and equal lives.

WHO   World Health Organisation

Is the branch of the United Nations responsible for international public health.

1. Introduction

1.1 Overview

The importance of understanding how sociocultural factors can affect the use of health services has received increasing attention over recent years. Health and cultural practices are closely intertwined whereby sociocultural factors can act as both barriers and enablers to accessing healthcare (Purnell, 2014, Ensor and Cooper, 2004). This thesis specifically explores the influence of sociocultural factors on modern contraceptive use, with a focus on West Africa. West Africa is a very diverse area of the world, often overlooked as a region and examined within the regional context of Sub-Saharan Africa (SSA) or at the individual country level.

Family planning and contraceptive use contribute to fertility decline and a reduction in unwanted births, which in turn leads to improved maternal and child health. In 1994 the International Conference on Population and Development (ICPD) revolutionised the focus of family planning programs by changing from population centric goals, concerned with decreasing population momentum as a result of high fertility, to focusing on the reproductive rights of individuals. Forthwith the concern was to ensure the reproductive health of each individual and to empower them to fulfil their reproductive choices (Ashford, 2004).

This thesis consists of three papers, which explore sociocultural determinants of contraceptive use on a national, subnational and individual level with a particular focus on West Africa. This chapter will present the rationale for this thesis and then provide some background information on contraceptive use in West Africa to set the context for the research. The aims of the study and the structure of this thesis will also be discussed at the end of this section.

1.2   Rationale

In 2000 the Millennium Development Goals (MDGs) were created to provide internationally measurable development objectives addressing poverty, education, child and maternal health, food, population, social and environmental issues. The aim of the MDGs was to provide a focus for equal development, with the eight goals focusing on improving social and economic conditions for the world's population. The fifth goal focuses specifically on the improvement of maternal health. In 2005 a new target (5b) was added to this goal; to achieve universal access to reproductive health care by 2015. Target 5b is monitored by looking at the contraceptive prevalence rate, adolescent birth rate, antenatal care coverage and unmet need for family planning. Following this at the 2010 Millennium Summit in New York cultural influences were acknowledged as a key element to achieving the MDGs (United Nations General Assembly, 2010).

Despite a worldwide increase in contraceptive use, there have been and there remain inter- and intra-regional variations in contraceptive use and unmet need (World Bank, 2010, Tsui, 1985, Andorka, 1978) . Unmet need for contraception occurs when a woman desires to delay or stop childbearing but is not using contraception. Current research and literature present the necessity of country-level agendas in order to overcome global variations and regional trends in contraceptive use. The reasons for unmet need and contraceptive non-use may vary between and within countries but the underlying barriers which feed these differences have similarities and we can therefore learn from different countries' interventions and family planning strategies. Thus this thesis will demonstrate that discrepancies between fertility control desires and behaviours have a common grounding.

Tsui (1985, p.117) presented contraceptive use as a the "conscious decision to avoid conception […] taken by one or both partners". In 1994 at the International Conference on Population and Development (ICPD) the concept of conscious decision was further transformed into each individual's right to comprehensive reproductive healthcare. Family planning is an integral part of reproductive health, providing women with the opportunity to decide when and whether to have children. If women

and couples do not have adequate access to family planning knowledge and services, they cannot make a conscious and educated decision about whether or not to adopt a method of contraception.

Modern methods of contraception (such as the pill, condom and intra-uterine device) are considered to be the most effective forms of contraception (United Nations, 2004), which is due in part to the reliance of partner cooperation for operative efficacy of traditional methods (such as withdrawal and abstinence) (Nakiboneka and Maniple, 2008, Figueroa Perea and Yanes Esser, 1998). It has been stated that "without a widespread adoption of modern methods of family planning, it will be difficult [....] to reach the fertility transition threshold critical to reaping the demographic dividend" (Economic Commission for Africa, 2009). The demographic dividend refers to the phase of declining fertility rates which characterise the commencement of the fertility transition. This statement is controversial as the total fertility rate in Europe dropped below replacement level (2.1) without universal use of modern methods of contraception (Leridon, 1981). However, it is clear that modern methods of contraception do help with fertility regulation and due to the improved efficacy of modern methods the focus of this thesis will be on modern contraceptive use. In Sub-Saharan Africa (SSA) only 21% of married women aged 15-25 are using modern contraceptives, one explanation for this is the sociocultural pressure faced by young women to conceive after marriage (Thanenthrian et al., 2012).

1.3   An overview of barriers to contraceptive use

The World Health Organization recognises that access to health care is affected by physical, economic and cultural barriers. It is accepted that all men and women have the right "to be informed of and to have access to safe, effective, affordable and acceptable methods" of contraception and health care services (WHO, 2012). In order to ensure this is it imperative that we recognise the constraints women and couples face to contraceptive use.

Barriers to contraceptive use can be split into two different categories comprising demand and supply factors. Demand for contraception is generated when knowledge of contraceptive use increases and social attitudes towards family size change (International Planned Parenthood Foundation, 2011). Among the influences on demand for contraception are sociocultural, educational, demographic and economic factors which affect the acceptance of contraceptive use. Despite the focus of this thesis on sociocultural barriers it is necessary to acknowledge that there are additional influences on the demand for contraception.

Supply of contraception can also impede contraceptive use and it is important that if demand for contraception is increased contraceptive supply systems can cope with the increased demand. The supply of contraceptives is affected by among others, the accessibility of services, the quality of services and the range of methods offered (Tuoane et al., 2003). As this body of work is concerned with the cultivation of demand and the fulfilment of an individual's choice to contraceptive use the supply side barriers will not be explored in depth in this thesis. Yet it is acknowledged that factors such as quality of care are important in maintaining a client base once women decide to become contraceptive users (RamaRao et al., 2003).

1.4   Sociocultural barriers to contraceptive use

The World Health Organisation defines cultural barriers as being associated with social and/or community perceptions (WHO, 2012). It is felt that our cultural beliefs and moral understanding will guide our behaviours and similarly our social environments will influence our morals and beliefs. The United Nations Population Fund (UNFPA) recognises that together cultural and institutional barriers are involved in "the root causes of poverty, reproductive ill-health and indicators of the poor socio-economic status of women" (UNFPA, 2005, p.13). Although cultural factors could and have been explored separately, for this thesis it is considered important to recognise cultural factors in relation to the social factors in which they are present. Therefore the primary term being used will primarily be sociocultural.

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It must be noted that despite the use of the term cultural *barriers* by both the WHO and UNFPA, sociocultural factors may actually act as both enablers and barriers to the adoption of both new behaviours and beliefs. In this light it is possible to come from a different 'culture' to someone and behave similarly to them, likewise it is possible to belong to the same 'culture' as someone and act differently to them. Contraceptive use can be seen as a form of social behaviour, a behaviour which changes depending on the population being studied and the sub-populations and individuals present within. It is the interplay of sociocultural factors and contraceptive behaviour (use or non-use) which will be the focus of this thesis.

Terborgh et al. (1995) identified multiple barriers which acted to prevent women who had a need for contraception, from adopting a method. Among these were the characteristics of potential contraceptive users and programmatic barriers; the latter relating to inappropriate health systems or access to health care as well as sociocultural barriers. Srikanthan and Reid (2008) expand this further, suggesting that personal beliefs and values, shaped by culture and religion, act together as barriers to contraceptive use. Interestingly these authors separated religion from culture, whilst other authors have identified religion as a cultural element (Stephenson et al., 2007, Aryal, 1991). Sociocultural barriers are external factors which influence an individual's beliefs and actions; it is felt that religion is one of many sociocultural factors relating to contraceptive use and it will be explored alongside many other factors throughout this thesis.

1.5   Unmet need and contraceptive use in West Africa

Although in general the use of modern contraceptives has "traditionally been low in sub-Saharan Africa […], there is evidence of an increase in the past decade" (Stephenson et al., 2007, p.1233). At the same time Africa, most notably West Africa, remains one of the most diverse areas of the world in terms of contraceptive uptake. The potential demand for contraception can be calculated by combining met and unmet contraceptive need. Robey et al. (1996) found that women with unmet need

had similar reproductive desires as contraceptive users, the difference being that they were not using contraception.

Using data from Demographic and Health Surveys (DHSs) for West African countries in which multiple surveys have been undertaken we are able to see how the use of modern contraceptive methods has changed over time (Figure 1.1). In most countries contraceptive use has increased over time, although Benin, Ghana and Nigeria did experience slight decreases between some time points. Modern contraceptive prevalence in West Africa ranges from 2.3% in Niger (1992) to 18.7% in Ghana (2003).

The most recent DHS data on contraceptive use and unmet need in West Africa is summarised in Figure 1.2, for those countries where data is available post-2000. Unmet need may be low in a country with high levels of fertility because fertility preferences have not yet started to decline, increasing as the country enters the fertility transition and then decreasing again as fertility preferences are fulfilled and smaller families become the norm (World Bank, 2010). For example in Niger, modern contraceptive use remains minimal at 5% and unmet need is also low at 16.1%; however the total fertility rate remains high at 7 children per woman (Institut National de la Statistique and Macro International Inc, 2007).

We see that Ghana has both the highest levels of contraceptive use and unmet need. On the contrary, in Niger, contraceptive use is low and unmet need is also the lowest of all countries. Unmet need increases as a country enters the fertility transition and decreases as fertility preferences are fulfilled. This suggests that Niger has not fully entered the fertility transition and that large family ideals remain in Niger (Figure 1.3). If these ideals are addressed through family planning interventions, and social norms change in a way that favours smaller family sizes, unmet need will increase to reflect this new desire for achieving smaller families. As these new desires are fulfilled through contraceptive use, unmet need will decrease and more women become contraceptive users. In Mauritania levels of contraceptive use were also very low (in 2000-2001), similar to Niger, but unmet need was the second highest after Ghana. This suggests that women in Mauritania are not achieving their desired family size and the fertility transition here has already begun.

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Figure 1.1. Modern contraceptive use for selected West African countries
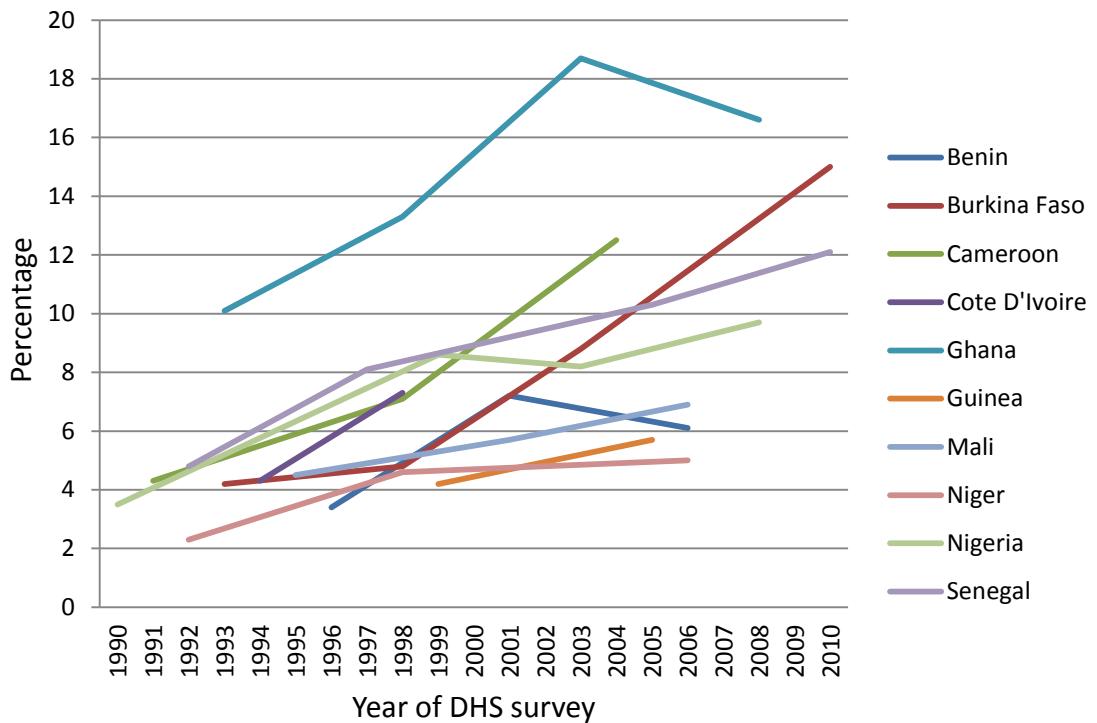
Figure 1.2. Modern contraceptive use and unmet need in West Africa since 2000
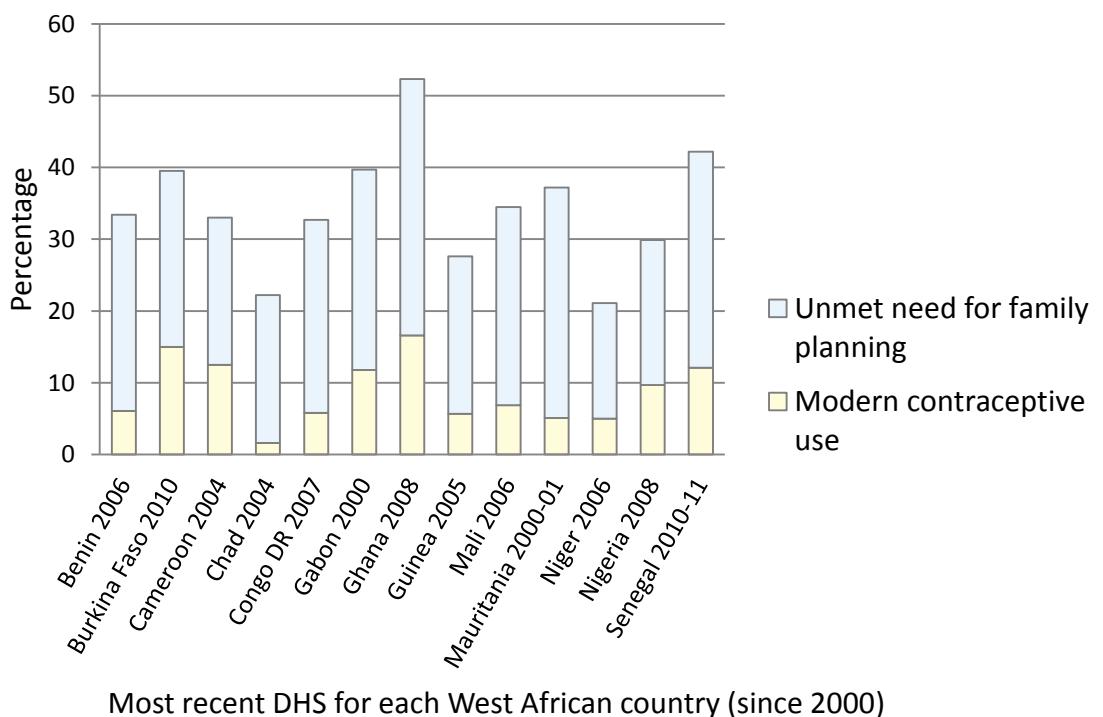
Figure 1.3. Total fertility rate for eight West African countries
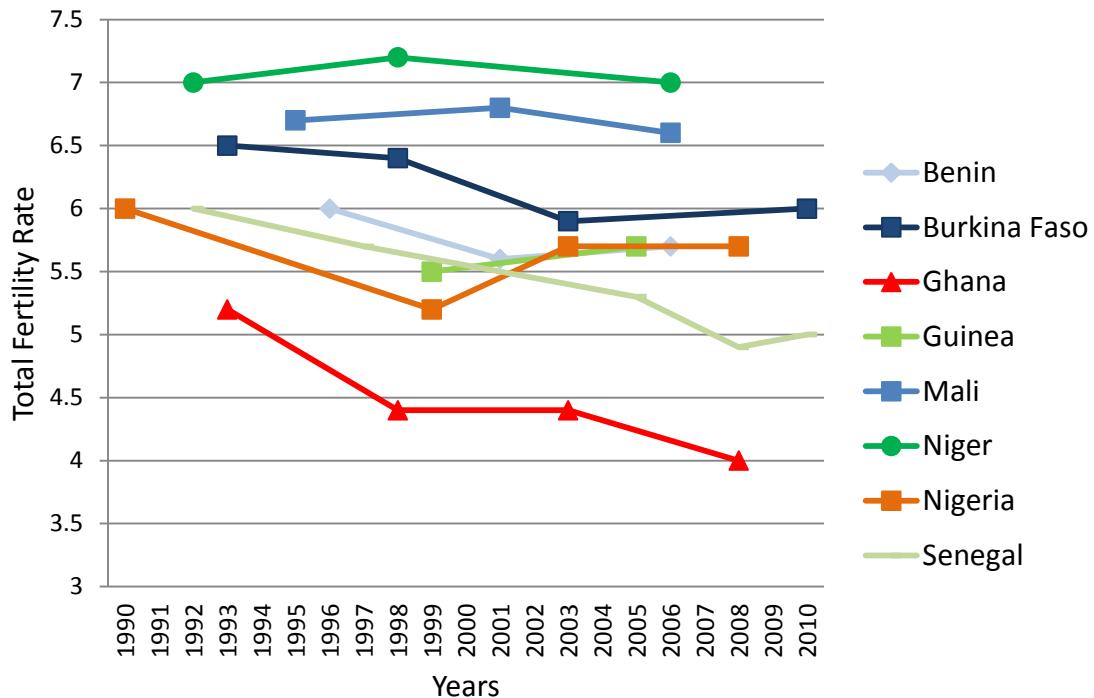
Figure 1.3 depicts the total fertility rate (TFR) in West African countries. The green and blue lines correspond to Francophone (French-speaking) countries and the red and orange lines to Anglophone (English-speaking) countries. The language is indicative of their colonial history, and although they may have different religions, ethnicities, beliefs and behaviours, countries within each linguistic group appear to share a common cultural thread which originates from this colonisation. Interestingly the TFR appears to be generally lower in Anglophone countries than Francophone countries (this is even more prominent when we include Anglophone countries from the rest of the SSA region). The use of modern contraception is generally higher in the Anglophone (orange and red) countries and remains quite low for the majority of Francophone (blue and green) countries (Figure 1.4).

Figure 1.4. Modern contraceptive use in eight West African countries
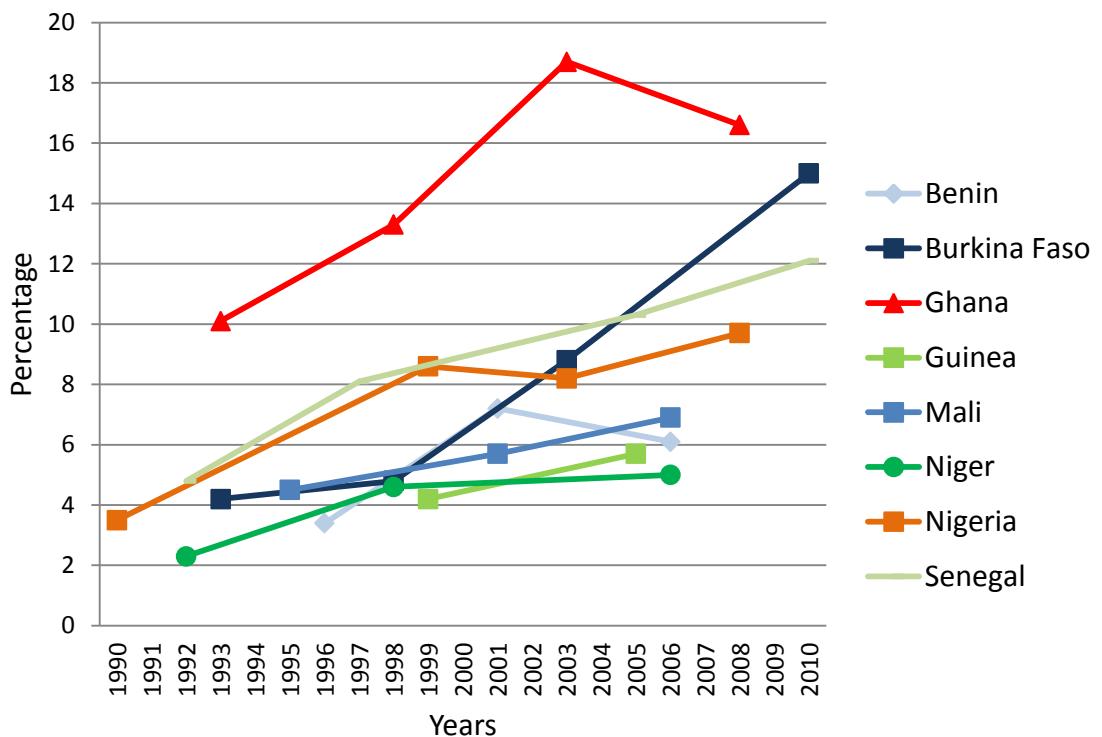
Figure 1.5. Unmet need for contraception in eight West African countries
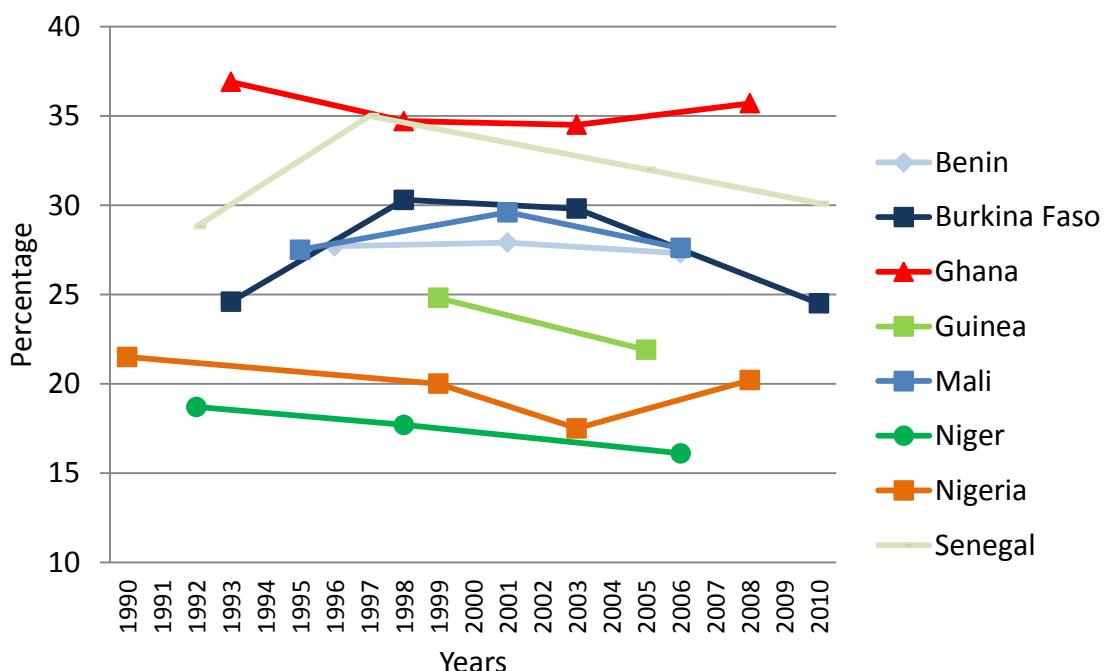
Furthermore when we look at unmet need patterns in Anglophone and Francophone West Africa (Figure 1.5) the picture is very varied, emphasizing how unmet need may not be an adequate measure on its own of fertility desires and intentions. Sociocultural barriers will be explored in this thesis in order to discover to what extent they can account for the variation in contraceptive use between and within these Francophone and Anglophone West African countries.

1.6   Aims and objectives of the thesis

There has been a lot of research into contraceptive use, unmet need and family planning, and it is recognised that significant progress needs to be made in these areas of healthcare if the MDGs and the goals from the Program of Action (PoA) for the ICPD 1994 are to be achieved. Between 1990 and 2012 contraceptive use in sub-Saharan Africa increased from 13% to 26%, doubling in the twelve year period (United Nations, 2014). However unmet need for contraception remains highest in this region, despite the total demand for contraception being the lowest suggesting that there remain barriers in this region to contraceptive uptake. The UNFPA states that "successful interventions developed in one context must be modified before they will fit local needs elsewhere, whether in another country or another region in the same country" (Ortayli, 2010). However, if the sociocultural context is similar in some of these countries, perhaps successful interventions can be reapplied in similar settings, helping to increase contraceptive use and reducing unmet need. The aim of this thesis is to investigate the relationship between contraceptive use and sociocultural barriers across and within countries in West Africa and to explore what lessons may be learnt from interventions which have been implemented throughout the developing world.

The objectives of this thesis are to:

Chapter 2

1. Identify the sociocultural determinants of contraceptive use.

2. Conceptualise how these determinants interact with one another.

Chapter 3

3. Establish whether sociocultural determinants to contraceptive use are the same across and within various countries in West Africa.

Chapter 4

4. Understand if the sociocultural determinants of contraceptive use are identified as issues at a local level in West Africa: taking the example of Saint-Louis, Senegal.

Chapter 5

5. Undertake a systematic review of targeted family planning interventions which are aimed at overcoming sociocultural barriers.

6. Understand the successes and failures of the interventions identified by the systematic review.

Chapter 6

7. Suggest ways in which these findings might be applicable at national, regional and local levels, which will be addressed in the conclusion of this thesis.

The following research questions will be addressed:

1. What are the sociocultural determinants of contraceptive use in West Africa?

2. How do these sociocultural determinants vary within and between West African countries?

3. What the sociocultural barriers at a local level in Saint-Louis, Senegal?

4. What motivates women in Saint-Louis, Senegal to use modern contraceptives?

5. What has been done to address sociocultural barriers to contraceptive use?

6. Which aspects of family planning interventions most enable users to overcome sociocultural barriers to contraceptive use?

1.7 Structure of the PhD

This thesis consists of six chapters and follows the three paper thesis format. A brief overview of what the chapters contain and their aims is included in this section. The first chapter is this current one, where the topics of contraceptive use and sociocultural barriers are discussed alongside the project rationale and overall aims. The final chapter will provide the overall conclusions of the thesis. The broader aim of this thesis is to explore in depth the relationship between sociocultural factors and contraceptive use.

1.7.1 Chapter Two: Sociocultural determinants of family planning and contraceptive use: a literature review

In this chapter the relevant literature is examined in order to understand how the adoption and acceptance of contraception is linked to fertility, through an exploration of fertility transition theories. This is important as these theories help to contextualise changes in fertility behaviours, leading to contraceptive use. Following this the first research objective will be explored and the first research question will be answered through an extensive literature review of sociocultural influences on contraceptive use. It explains what sociocultural factors are and why they influence the adoption of modern contraception for couples who are non-users but who have a potential need for contraceptive use.

Finally this chapter presents a conceptual model which will be used throughout the rest of the thesis. This model illustrates how individual fertility decisions and desires are affected by sociocultural barriers. The sociocultural barriers are presented under three categories: Values, Identity and Communication. Value factors include ideal size of family and the value of children. The Identity category explores elements with which individuals identify and that as a result become part of that identified collective, such

as ethnicity or religion. Communication relates to factors which aid or hinder the dissemination of information, ideas and behaviours in a sociocultural context such as exposure to media and trips outside the home community. Subsequent chapters will explore how these sociocultural barriers present themselves in West Africa, Senegal and in other areas of the world.

1.7.2 Paper 1: Sociocultural determinants of modern contraceptive use across and within West Africa

This paper explores how sociocultural barriers are associated with contraceptive use in West Africa. This was done using data from the DHS for seven countries (Burkina Faso, Ghana, Guinea, Mali, Nigeria, Senegal and Sierra Leone) in West Africa. The operationalization of the sociocultural elements identified in Chapter 2 was restricted by the variables present in the DHS. However in the final models 12 variables were explored under three separate headings: Values, Identity and Communication.

Multilevel modelling was undertaken, to examine the variation of contraceptive use between communities and regions. Generally the relationships previously found between contraceptive use and the operationalised sociocultural factors were replicated in this larger scale, more comprehensive model. It is clear that Values, Identity and Communication factors are associated with contraceptive use, to varying degrees across and within this region. There were no apparent factors which stood out as definitive determinants of contraceptive use. It is suggested that Values, Identity and Communication are investigated as a collective group of variables, rather than individually. The multilevel model highlighted that women living within a specific community were more likely to be contraceptive users if other women in their community were also users, irrespective of the control and sociocultural variables. This emphasises the importance of targeting family planning programs at the local level.

1.7.3 Paper 2: Family planning and contraceptive use: sociocultural barriers and enablers in Saint-Louis, Senegal

This paper attempts to understand the sociocultural barriers present in communities in and around the commune of Saint-Louis in Senegal, through the implementation of in-depth interviews with local women (both users and non-users) and focus group discussions. Senegal was chosen as family planning has received increasing attention in this country. Contraceptive use in Senegal increased from 4.8% in 1992 to 12.1% in 2010 and unmet need remains one of the highest in West Africa at 30.1% (Agence National de la Statistique et de la Demographie and ICF International, 2012). Although the empirical research from Paper 1 was beneficial in giving a broad understanding of sociocultural factors related to contraceptive use, it does little to explain why, when and how adopting contraceptive use becomes legitimized within communities (Price and Hawkins, 2007).

The commune of Saint-Louis was chosen in consultation with the Senegalese Family Planning Association (ASBEF) as between 2007 and 2011 the contraceptive prevalence rate increased from below the national average at 9.9% to 16.1%, well above the current national average (Ndoye, 2011). The implementation of various family planning interventions in the area and the existence of an ASBEF clinic in a suburb of Saint-Louis made it an ideal location from which to base the qualitative research.

It was found that in the district of Saint-Louis women were not terribly concerned with identifying women as "contraceptive users" and "non-users". They were motivated to use modern contraception due to the association of contraceptive use with good health and the assurance of birth spacing, which all women viewed as beneficial. Individuals perceived religion and husbands as the main barriers to contraceptive use. When asked, women felt that advocacy and sensitisation through both individual and group discussions were the best strategy to overcome these barriers.

1.7.4   Paper 3: Evaluating locality-specific interventions to increase modern contraceptive use in low and middle income countries

This paper presents a narrative systematic review conducted in order to understand how family planning interventions can enable users to overcome sociocultural barriers to contraceptive use.

The paper shows that although sociocultural barriers are specific to certain cultural groups and sociocultural settings, other groups may also experience similar influences on contraceptive use. The systematic review found that if an intervention reduces the impact of a certain sociocultural barrier in one commune, if the same barrier is present in a different community, the implementation of an equivalent intervention positively affects contraceptive use in the replication area, if appropriate adaptations are made. Therefore, if the sociocultural barriers of a community can be identified, then previously successful interventions may be effectively replicated irrespective of where the intervention was initially implemented.

This review provides the basis of a reference document to inform future family planning framework development, to which additional locality-specific intervention evaluations may be added as and when they are identified.

2. Sociocultural determinants of family planning and contraceptive use: a literature review

2.1   Introduction

Contraception can be used to regulate fertility as well as help ensure reproductive health by reducing the need for abortions and protecting against STIs and it has been recognised as one of the proximate determinants of fertility. The other significant direct determinants identified by Bongaarts (1978) are marriage, lactation and induced abortion. These act as primary factors which account for fertility differentials among different populations. The indirect determinants are cultural, economic, social, psychological, health and environmental factors which can inhibit procreation through any of the direct determinants of fertility (National Research Council, 1993). These indirect determinants may influence fertility but they do not necessarily result in changes in fertility as is the case with direct determinants.

Until the 1960s fertility in the developing world was relatively uniform. However since then reproductive change has proceeded at a varying and sometimes unprecedented pace which has led to the development of new interpretations of fertility change (Caldwell, 2001, Phillips and Ross, 1992). These theories will be presented here to understand the different ways in which demographers have tried to interpret changes in fertility. The motivations for using contraception to regulate fertility are key to understanding why some couples are driven to use contraception while others are not, even if they both have a desire to limit or space their births.

There is a significant body of literature supporting the ability of sociocultural differences to result in variations in reproductive behaviour and contraceptive use (Reddy, 2009, Keele et al., 2005, Kalipeni, 1997, Freedman and Freedman, 1992). However, many demographers have either explored one cultural barrier in great depth such as religion, ethnicity, women's status, or they have not discussed culture in much depth and instead alluded to generalised social (Sable and Libbus, 1998) and cultural (Morrison, 2000) norms or barriers (Konje and Ladipo, 1999). Some have even used the

term sociocultural barriers (Ezeh et al., 2010, De Broe et al., 2005, Agyei and Migadde, 1995) without specifying what is meant precisely by this phrase or which determinants they are referring to. This chapter will highlight the major sociocultural barriers to contraceptive use in order to understand how they may affect fertility decisions.

2.2   Reproductive health and reproductive rights

The International Conference on Population and Development (ICPD) took place between 5 and 13 September 1994 in Cairo, Egypt. The conference was not stand-alone but built upon progress made by previous population conferences, such as the World Population Conference, Bucharest, 1974. These conferences explore issues related to the "interrelationships between population, sustained economic growth and sustainable development, and advances in the education, economic status and empowerment of women" (United Nations, 1995b, p.7).

The ICPD 1994 marked a shift in attitudes regarding reproductive health, family planning and population growth, accentuated by recognition of the need for integrating all aspects of reproductive health, including family planning and sexual health; as well as the increased political commitment to such policies and programmes (United Nations, 1995b). The necessity of this had been highlighted five years earlier by Jain (1989) in a discussion about the lack of focus on individual needs with regard to family planning programs. However, after the ICPD reproductive and sexual health was no longer only about reproduction and health services but also linked to universal rights and women's empowerment (MacDonald, 2004). The program of action (PoA) defined reproductive health as "a state of complete physical, mental and social well-being in all matters relating to the reproductive system" (United Nations, 1995a) and the reproductive rights of individuals were recognised, beyond the basic concept of disease prevention. Countries were called upon to ensure that reproductive healthcare was accessible through primary healthcare systems to all individuals by 2015 and that Governments should support the practice of family planning as voluntary choice, work to eliminate major barriers to use, and to ensure a positive climate for family planning (United Nations, 1995a).

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Ten years after the ICPD 1994, progress made towards providing universal reproductive healthcare was uneven and the commitment, especially financial, was questionable. Ashford (2004) identified a downfall of the 1994 PoA as the extensive variety of health and social issues being addressed proving difficult for all the recommendations to be implemented without expanding resources and organizational capacity. As the estimated costs were not acquired, with donor funding being severely reduced and the failure of the PoA to encompass achievement of all the goals presented at Cairo (Ashford, 2004) also contributed to the slow advancement towards this goal. Despite these inconsistencies and financial constraints, significant progress was seen by the half-way point of this 20-year agenda (UNFPA, 2004).

The UNFPA identified culture and the sociocultural environment of adolescents as both "a facilitating factor and constraint to adolescent reproductive health" (UNFPA, 2004). The open discussion of reproductive health issues was considered inappropriate in 43% of countries and 41% identified culture as a barrier for youths in seeking reproductive health services (UNFPA, 2004). The report concludes that in recognising the need to understand the sociocultural context and addressing these in their approaches the implementation of the ICPD PoA has been successful. The encouraging acceptance of the legitimate needs and rights of adolescents is laying a foundation for future progress in addressing the challenge of up-scaling and institutionalising existing or new projects which address rights-based, gender-sensitive issues for adolescents.

It is felt that the reproductive rights of youth and adolescents have received the most focus over the past two decades, most notably as 43% of the world's population is aged under 25 years (Thanenthrian et al., 2012). However this focus on youth and adolescents means that the reproductive rights of older women may be being overlooked. The interests of this thesis lie within exploring the contraceptive behaviour of all women of reproductive age (15-49 years), in the years since the ICPD and the subsequent implementation of the MDGs. The London Family Planning Summit (LFPS, 2012) identified the lack of partner's and community information on contraception and their non-support of women's rights to decide to use it as on-going

barriers to contraceptive use. Here these sociocultural barriers will be expanded upon and explored in greater depth.

2.3 Theories of fertility change

Bledsoe et al. (1998, p.17) emphasized the importance of understanding the interpretive frameworks used to analyse fertility when applying a cultural lens to reproductive understanding in Africa. Theories of fertility change have been presented since the early 20th Century to understand the motivations and desires which drive women to control their fertility through contraceptive use, in turn reducing their overall family size. These theories will be presented and the ways in which sociocultural factors fit into the frameworks will be explored in order to understand the winder context of the fertility transition, before focusing on particular sociocultural determinants of contraceptive use.

2.3.1 Demographic transition theory

Presented by Thompson (1929), the demographic transition theory classified countries which displayed similar patterns of mortality and fertility. Countries in Group A were characterized by declining death rates and even faster declining birth rates, resulting in an overall decline in natural increase. In Group B, countries showed evidence of declining birth and death rates but as the death rates were declining faster, populations were either stable or growing. In Group C the birth and death rates were "less controlled" (Thompson, 1929, p.962). Mortality decline was attributed to improvements in health and nutrition. Thompson postulated that in Groups B and C birth rates would likely decline at an accelerated pace "because the greater ease of communication makes the spread of contraceptive knowledge easier than…in the past" (Thompson, 1929, p.969). Already socio-spatial awareness of the determinants of contraceptive use was apparent and the relationship between contraceptive knowledge and fertility decline was recognised.

Notestein, considered another "creator" (Cleland and Wilson, 1987, p.7) of the classic transition theory, classified country groups as those experiencing (1) incipient decline, (2) transitional growth and (3) high growth potential (Notestein, 1950). He proposed that in the modern system the principal determinants of fertility were related to rational choice and control rather than governed by institutions, as was the case in traditional societies (Notestein, 1950). Similar to the notion presented by Coale (1973) whereby it was postulated that fertility declines when related decisions were part of an individual's conscious choice. Leibenstein (1974) went on to explain that it was not contraceptive technology per se which was responsible for this decline, but a reduction in desired fertility, which leads to increased use of contraceptive methods and related behaviours.

Levels of unmet need for contraception; where women who want to delay or stop childbearing, are related to the interplay of both fertility desires and contraceptive use (Robey et al., 1996). Westoff and Ochoa (1991) found that the relationship between these two factors could be generally classified into four stages. During the initial stage fertility is high and little interest in fertility regulation results in low unmet need. Following this, motivation to control fertility arises and desire for contraceptive use increases in countries in the early stage of the transition faster than contraception becomes available resulting in increased unmet need. Late in the transition stage the demand for and supply of contraception grows rapidly, so unmet need may continue to increase, be reduced or remain the same. However this stage eventually results in sharp fertility declines. The final stage is characterised by low fertility and low unmet need as demand for contraception is fulfilled.

The demographic transition theory was developed with the Western world in mind and Notestein (1983) acknowledges that there are cultural and racial differences. However he discards these differentiating factors, saying that it is more likely the principles of the transition will be the same for every country. One major criticism of this theory is that it does not attempt to present an interpretation of or reasoning for a threshold for fertility decline (Kirk, 1996, p.364-365), to account for the differences in the pace of change across and within countries.

2.3.2   Demand and economic based theories

There is a clear relationship between the economy and unmet need for contraception as, when looking at nineteen non-African countries, the poorest displayed the highest levels of unmet need (Cleland, 2007). This theory focuses on explaining the reasons behind the adoption of deliberate measure of fertility control and rests upon the notion that fertility behaviour results from rational thought. It was initially presented by G. Becker and expanded upon by T.W.Schultz.

Becker (1960, p.217) likens children to consumption goods and suggests that as income rises so too does "the quality and the quantity of the children desired; the increase in quality being large and the increase in quantity small". The desire for higher quality children would pose a higher cost for parents, for example through increased investment in education and this suggests that as income rises the desire to invest financially in the child is inversely related to the desire for more children; this is known as the quantity-quality trade-off. Becker (1960) mentioned that it is problematic to ascertain whether poor families lag behind richer families in contraceptive adoption due to lack of knowledge or if they purely desire more children than richer ones. This question is not answered by the theory but links to the idea that cultural factors are important variables as the desire for more children is a cultural factor, which will be discussed further in Section 2.6. However, the acknowledgement of these factors here implies that although economics may be important, sociocultural drivers may be just as significant.

Similarly, Schultz (1974, p.7) viewed children as forms of human capital, and more specifically as the "poor man's capital". He postulates that it is the value of time a mother spends rearing her child which is offset by the human capital gains which are involved with fertility decisions. These theories have been accused of being too mechanistic in their treatment of the process of having a child (Kirk, 1996, Leibenstein, 1974).

Alongside the belief that "reduced demand for children is the fundamental driving force behind the transition" (Cleland and Wilson, 1987, p.7) is also the notion that fertility decline is viewed as a result of rational thought (Kirk, 1996, Andorka, 1978).

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Blake (1968) presented the importance of incorporating theories of family and sociology into theories of reproductive motivation. On an individual level each childbearing decision may not be rational but at the population level the average decision will be. Blake states; "we cannot rely on want and poverty to provide motives for fertility decrease, even if contraception were 'available' to everyone" (1968 p.24-25).

The economic theory of fertility decline is based on the experience of Western industrialised countries and although fertility decline occurred in some Asian countries simultaneously with economic development this has not been the case for all countries (Robey, 1991). The intergenerational wealth flows theory offered by Caldwell (1976) attempts to present an economic theory more suited to the African reality stating that in traditional societies wealth flows mainly from younger to older generations, whereas in transitional societies wealth flows from parent to child. This has been criticised as it focuses on the demand for children resulting from rational thought. Caldwell (1976, p.337) presented four elements which must be included into our understanding of fertility change. First, he highlighted "that every culture has its own economic theory" and the magnitude and direction of wealth must be considered. Then variations in fertility decisions were highlighted as being out of the "conscious" control of individuals due to the necessity of following cultural practices. Finally he indicated the importance of understanding the meaning of "family" in surveys and its cultural context as this will affect interpretation of the word within the society being examined.

Economic wealth is not necessarily the driving force of fertility decisions and Easterlin and Crimmins (1985) presented an explanation for low contraceptive use which combined the importance of "demand" factors with the existence of "supply" and "cost" factors. Cost was considered in financial and time terms as previously stated but also in terms of cultural cost and the existence of "distaste for the idea" (Easterlin and Crimmins, 1985, p.9). Supply factors are related to fecundity problems and levels of infant and child mortality. The decline in demand for children leads to a need for fertility regulation and the cost of fertility regulation falls, which results in a reduction

in fertility. This theory has been criticised for its lack of emphasis on a particular economic, socio-economic or cultural factor having dominance as a cause of fertility decline (Kirk, 1996), largely because it clearly posits that "the list of potential influences on fertility is almost limitless" (Easterlin and Crimmins, 1985, p.14). A clear outcome of the theory presented by Easterlin and Crimmins (1985) is that it was felt these limitless influences on fertility control acted through one or more of the three categories identified. This theory focuses on individual fertility decisions and may be criticised for not taking into account social trends in collective behaviours (Bulatao and Bos, 1992). However, Easterlin and Crimmins (1985) do discuss the basic determinants of fertility as being related to, among others, cultural factors related to social customs that affect coital frequency, foetal mortality or fecundity.

Cleland et al. (1994) presented cultural influences as having a stronger impact than economic influences with regards to regional differences in the timing and speed of fertility decline. This is reflected in the presence of significant fertility declines in some developing countries prior to experiencing marked economic growth, such as was observed in both Morocco and Nigeria (Abernethy, 2002, Makinwa-Adebusoye, 2001). This has led to greater attention to alternative explanations of fertility decline, linked to social changes of attitudes and motivation (Singh and Casterline, 1985). These authors found that there was a limitation in attributing variations in sub-national fertility to differences in marriage, contraception and lactational infecundability (three proximate determinants of fertility) and that "sub-national analyses revealed a systematic patterning in the 'residual' or unexplained element"(Singh et al., 1985, p.132). They concluded that "three or fewer years of schooling are more likely to lead to a long-term change in ideas, attitudes and aspirations than in such economic realities as the costs and benefits of children" (Singh et al., 1985, p.132).

Interestingly Ainsworth et al. (1996) noted that the relationship between additional years of schooling and contraceptive use is greatest with regards to primary schooling. They found that schooling raised the likelihood of contraceptive use but that this was greatest at the primary school level and in this case only for women who had completed primary schooling. This resulted in the observation of a nonlinear

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relationship between years of schooling and contraceptive use, suggesting that changes in attitudes which lead to long term behavioural changes may not require many years of education. However there is no one threshold or pattern observed with regards to educational level and fertility decline which "vary by contextual factors [such] as region, level of development, and gender disparities in literacy" (Jejeebhoy, 1995, p.27).

2.3.3   Diffusion and innovation theories

Alternative explanations of fertility decline became necessary with the emergence of fertility declines unaccompanied by economic growth, such as in Bangladesh. Diffusion theories provided alternatives to demand based theories of fertility decline, but they are similar in their predominant acceptance that the spread or diffusion of new ideas, behaviours and innovations is key to reproductive decline (Price and Hawkins, 2007, National Research Council, 2001).

The diffusion of innovations "is concerned with the way in which new technologies or forms of behaviour spread within a population" (Cleland and Wilson, 1987, p.9), presenting sociocultural elements as key to understanding the fertility transition. The social aspect of diffusion has long been identified with Freedman (1987, p.71) emphasizing the importance of reaching the "social world of village residents" for family planning programs to succeed amongst rural populations. Similarly Kohler et al. (2000, p10) found that "social interactions increase the impact of program effects beyond the direct program effect".

Tsui (1985, p.227) noted five stages in the process of diffusion; awareness, information, evaluation, trial and adoption. Casterline (2001) further divides diffusion theory into two main bodies of work; one which is to do with the information, trial and adoption of modern contraceptive methods and is concerned with the diffusion of new behaviours, the second is more linked to awareness and evaluation and is to do with ideational innovation.

This theory is not individualistic but focuses on the fact that social relations at the local level are influenced by the greater social, economic and political processes and affect reproductive behaviour (Price and Hawkins, 2007). In Guatemala Lindstrom and Muñoz-Franco (2005) found significant diffusion effects, providing support for theories of fertility decline which emphasize the role of social interaction. Similarly Montgomery and Casterline (1993) found that interpersonal communication in Taiwan increased the impact of family planning programs.

This theory has been criticised for being too simplistic by not exploring the direction of the flows of innovations or the processes of communication (Hammel, 1990). In order to better understand this theory it will be explored on three different levels. Firstly behavioural diffusion will be examined and then ideational innovation and then the diffusion of innovations.

2.3.3.1 Behavioural diffusion theory

Fundamental to this aspect of diffusion is the premise that the behaviour and attitudes of a few individuals can influence others and can result in changes of attitude and behaviour in the masses (Casterline, 2001). Influence can be exerted by kinship groups, informal social networks, religious and spiritual leaders and local political institutions (Price and Hawkins, 2007). Fertility decline results from the spread of knowledge and increased access to fertility regulation. This theory rests upon the acknowledgement that greater motivation is required to be an early innovator than to engage in innovative behaviour once a significant proportion of the population have broken tradition and risked disapproval (Hirschman, 1994).

Two ways in which awareness of family planning might be diffused through behaviour are through social learning and social influence (Lindstrom and Muñoz-Franco, 2005, Casterline, 2001, Kohler et al., 2000, Montgomery and Casterline, 1996). Social learning is gained through personal interaction and involves learning from others' experiences, through verbal communication, observations and also impersonally though the media. Social influence consists of the effect an individual's social environment has upon his or her actions, behaviours and personal preferences and desires. Bulatao and Casterline (2001) presented the notion that weakening normative

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control, as societies modernised, "may empower individuals to make their own choices, often for smaller families" (p3).

In their observations of social networks and changes in contraceptive use over time in Kenya, Behrman et al. (2002) found that it was social learning and not social influence which was spreading the innovation of contraceptive use. They felt that as the number of innovators increased, so the influence of additional users started to decline and concluded that it was social networks that had the greatest impact on contraceptive behaviour as long as innovation was not yet widely disseminated.

On the other hand Bhushan (1997) expected social influence due to social norms was associated with how an individual perceives their behaviours will be interpreted. Behavioural diffusion cannot be examined alone as it is not strong enough to provide a complete understanding of reproductive change (Casterline, 2001).

2.3.3.2   Ideational innovation theory

Ideational innovation theory posits that it is the variation in cultural values which lead to variations in fertility behaviour (Hirschman, 1994). Lesthaeghe (1983) is an advocate for the theory, believing that the primary factor relating to fertility behaviour differentials are cultural elements which contribute to a long term shift in the ideational system. However in order for fertility change to occur individuals must be ready, willing and able to change their behaviours (Lesthaeghe and Vanderhoeft, 2001).

Cleland and Wilson (1987) noted that ideational change is linked to knowledge, attitudes and social norms, which can transform relatively rapidly and suggested that if a few years of schooling are often sufficient in changing reproductive ideals then perhaps this reflects "changing perceptions, ideas and aspirations [rather] than changes in objective micro-economic realities" (p.22). Here they are emphasizing that it may not be the material conditions one finds oneself in which are evident in economic and demand theories, but the ideas and values one has which affect fertility preferences. This is supported by the knowledge that contraceptive awareness does

not automatically equate to contraceptive use and could explain the diffusion of contraception even amongst socioeconomically disadvantaged people (Tsui, 1985).

Cleland and Wilson (1987) concluded that ideational change may well be more important than structural change in influencing fertility decline. This theory has been criticized because of the circulatory nature of behaviour and the difficulty in explaining behavioural patterns in terms of "cultural preferences for that behaviour"(Hirschman, 1994, p.216). However the introduction of the innovative concept of fertility limitation along with means to do so has a substantial impact on the acceptance of practices which result in fertility decline (Knodel and Walle, 1979).

2.3.3.3 Diffusion of innovation theory

Cleland and Wilson (1987, p.29) felt that ideational theory was an incomplete explanation for fertility decline, referring to Sub-Saharan Africa where ideas about birth control may be changing, yet were "unlikely to bring about appreciable fertility declines without reductions in the uniquely high level of parents' demand for children". The innovative thinking needed to accompany innovations in technology also need to be accompanied with visible behavioural changes, seen in the reduction of family size and the adoption of innovative methods. Casterline (2001) presented similar ideas and this suggests that behavioural diffusion and ideational innovation should be examined together through the diffusion of innovation theory.

There is no doubt that social interaction, or diffusion, may contribute to contraceptive uptake through the diffusion of ideas and values (Avogo and Agadjanian, 2008), but perhaps it is necessary to acknowledge that diverse beliefs and social behaviours evolve in different ways. In the example above, Cleland and Wilson (1987) mention that ideas about birth control are changing, yet, until ideas related to the desire for large families also evolve, the initial changes in the use of birth control methods will not be very significant. It can therefore be helpful to consider ideation and communication in conjunction with each other. Education, knowledge and cultural attitudes are important in this manner as facilitators for the transfer and acceptability of new ideas (Cleland and Wilson, 1987, Tsui, 1985). Hammel (1990, p.465) interweaves this with the notion that culture is not autonomous, but rather an

"intensely participatory notion …continuously created and reshaped" as a result of social interaction processes.

2.3.4   Relevance to thesis

Although socioeconomic factors have been shown to be important factors when examining fertility decline they fail to explain all the differences in the use of family planning throughout the different regions of the world (De Broe et al., 2005) . Figueroa Perea and Yanes Esser (1998) observed that despite periods of economic growth and crisis, and during a time of considerable social change, Brazil experienced fertility decline. Similarly in Nigeria despite severe economic decline fertility reduction was noted by (Makinwa-Adebusoye, 2001). Kirk (1996, p.367) observed this in a wider context drawing upon the experiences of Latin America and Chinese culture (China, Hong Kong, South Korea, Singapore and Taiwan) as a whole, where independently of socioeconomic development, fertility decline has diffused rapidly amongst these populations. Lightbourne (1985, p.217) stated that "socioeconomic factors…explain around 15-25% of the variance in fertility [levels]". In this way the importance of socioeconomic factors should not be disregarded. The theories of diffusion and innovation attempt to add to the more basic theories of fertility change which focus on economic changes or views of fertility decisions. This thesis tries to position sociocultural factors as additional aspects necessary to be examined alongside the other theories in order to gain a complete understanding of the processes which lead to the adoption of contraception and the resulting changes in fertility levels.

There is no single theory which "offers a complete explanation"(Leibenstein, 1974, p.471) of fertility decline as the determinants are manifold. Tsui (1985) posited that the diffusion process offers an adequate framework for analysis and as this thesis evolves the key role sociocultural role of diffusion in the form of communication will be explored. This study aims to show the importance of sociocultural factors with relation to contraceptive use and to highlight that future understanding of fertility decline needs to be examined with this in mind. The focus will be on West Africa, not

only because of its cultural diversity but also because, as a region it is not often explored beyond levels of contraceptive use and unmet need.

2.4   Barriers to contraceptive use

There are myriad factors which either enable or hinder use of family planning methods, each playing a role in fertility decisions and desires. Motivation to avoid conception has been established as a factor which may act as a barrier or enabler for contraceptive use (Hirschman, 1994, Easterlin and Crimmins, 1985, Blake, 1968). Unmet need for contraception arises when motivations for controlling fertility are not translated into behaviour due to the presence of one or more costs, or barriers, to use.

Coale (1984) proposed three conditions as fundamental for the adoption of modern contraceptives. Firstly, fertility control must be a conscious decision; secondly, effective methods of fertility regulation must be known and available, and thirdly, fertility reduction must be viewed as beneficial. In this conceptualisation, motivation could be equated with conscious decision making and knowledge, availability and the benefits of fertility reduction, all of which could be tied to the costs of adoption.

One key element identified by Bruce (1990) was the quality of care and the impact of improved care on overcoming barriers to contraceptive use. It was identified that in sub-Saharan Africa, due to the underlying cultural issues, institutional improvements needed to be undertaken slowly to build upon existing interest in birth spacing. It was recognised that clients' needs change over time and quality of care is not only pertinent for the encouragement of contraception adoption but also in order to provide an adaptive service which can address these changing needs. The need for a variety of contraceptive methods was also emphasised by Jain (1989) as an important factor in aiding fertility reduction.

Just as there have been many attempts to model and theorise fertility decline, demographers have endeavoured to identify the costs and barriers to contraceptive use. The DHS identified causes of non-use and the six main reasons were given as (Bongaarts and Bruce, 1995):

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1. Lack of knowledge

2. Health concerns

3. Husband's disapproval

4. Infrequent sex

5. Religion

6. Lack of access

Lack of knowledge has often been identified as a barrier to contraceptive use, with folk beliefs providing misguided interpretations about conception and the function of modern contraceptives (Randrianasolo et al., 2008, Maynard-Tucker, 1989). If women do not understand how modern methods of contraception work it is logical that they may be reluctant to use them to manage their fertility. Additionally, if they are uninformed of the wide spectrum of modern contraceptives which exist or perhaps if these methods are not available to them they may be unaware that there is a method suited to their particular needs. For example if a woman who desires simply to space the births of her children is only aware of sterilisation, then she may believe that there is no method suited to her situation. However overall these reasons have been considered simplistic, subject to response error and politeness/embarrassment bias (Bongaarts and Bruce, 1995).

Campbell et al. (2006) also considered seven barriers to the use of contraceptives and do not identify lack of knowledge as one of them. However, misinformation and fear can be by-products of lack of knowledge and therefore may be seen as linked to education and knowledge acquisition.

1. Geography and method choice

2. Financial costs

3. Status of women

4. Medical

5. Provider bias

6. Side effects, misinformation and fear

7. Abortion

Although social factors were not directly mentioned in the paper by Bongaarts and Bruce (1995) they were considered to affect knowledge and action upon it and relate to the "view" of contraception mentioned by Cleland and Wilson (1987). Social factors were also considered by Khan (1999) as contributors to limited access to services, mentioned by Bongaarts and Bruce (1995) and also Campbell et al. (2006) through the identification of geographical barriers.

Bongaarts and Bruce (1995) suggested that, in order to be successful, family planning programs need to take into account cultural and familial factors. All the barriers identified by Bongaarts and Bruce (1995) and many of those specified by Campbell et al. (2006) are sociocultural factors. Sociocultural factors are elements which define the behaviour, beliefs and attitudes of people, which vary between groups and can be transferred across groups; this will be explored further in section 2.5.

Lack of knowledge is related to health concerns, misinformation and fear of use as it can mean that women are incompletely or incorrectly informed about contraceptive methods. Lack of knowledge can also lead a person to be susceptible to provider bias. Provider bias may occur where either a healthcare representative believes a person does not need contraception and therefore does not offer it, or only offers a limited range of methods due to a personal bias against other methods. If someone does not know that other more suitable methods are available he or she may remain a non-user despite having a desire to control fertility. For example this was found by Speizer et al. (2000) to be a barrier to contraceptive use in Tanzania.

The status of women in societies is related to education, in that education can provide women with greater autonomy. It is also linked with husband's approval of family planning as woman with low status may not have the ability or confidence to express her own wishes and desires. Both the status of women and husband's disapproval are rooted in cultural norms and behaviours. Religion and geographical location may be considered as barriers to, or enablers of contraception use, depending on the norms of the communities being examined. These factors will be discussed further in the next section.

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Another way in which barriers to contraceptive use can be viewed is by examining demand and supply factors. Supply barriers are things such as quality of care and are related to program structure, the service provision and the outcomes of these services. Casterline and Sinding (2000) argued that unmet need for contraceptive use is not only a result of poor access to services or the supply of contraceptives but that "social and cultural obstacles figure more prominently" (p713). This is emphasised by research in Pakistan where women identified socio-cultural factors as the greatest barrier to family planning service use (Stephenson and Hennink, 2004).

2.5   Defining culture

The world is composed of many different cultures (Barnard and Spencer, 2002) it is not a thing but a dimension of existence which affects each individuals way of life (Alexander et al., 2011, Jenks, 2005). Cultures vary both within and across countries and it is the notion of difference which will be explored in this thesis. 'Culture' is a diverse concept based upon meaning (Alexander et al., 2011, Lewellen, 2002) and our interpretation of the world around us. Our experience of culture not only shapes the way we behave, our feelings, beliefs and morals (Alexander et al., 2011) but will also shape the way we define culture itself. Therefore in order to define what is meant by culture with regards to this thesis it is necessary to step back and observe the fundamentals of this concept.

Wright (1998) explores the concept of 'old' and 'new' definitions of culture. The *old view* of culture is concerned with the shared elements of living within a society and the *new view* brings in the dynamic nature of culture viewing it as an "active process of meaning making" (Street, 1993, p.26). Although culture is a "collective identity" (Lewellen, 2002) which can be viewed through the way people live their lives. It is necessary to introduce an element of "activity" or changeability to a modern interpretation of the concept due to the influence of external or new sociocultural factors encountered through activities such as migration and exposure to mass media. The use of the joint term sociocultural highlights that culture is a result of the society

in which one lives and that cultural exposure influences our system of beliefs as a result of living within a particular community (Freedman, 1987).

One of the greatest difficulties with defining culture was presented by Hall (1965) who stated that "culture controls behaviour in deep and persisting ways, many of which are outside awareness and therefore beyond conscious control of the individual" (p.35). This is most likely because the "origins [of a culture] are deeply buried in the past" (Hall, 1965, p.61) and may provide a reason for why the definition of culture is often omitted in the related literature. This thesis will attempt to capture both the conscious and unconscious elements which make up an exploration of culture.

Cultural barriers encompass values and beliefs which are shaped by interactions that hinder the activities of an individual within a society, leading to the use of the term sociocultural. This section collates and identifies sociocultural barriers discussed in the literature. The term sociocultural will be used interchangeably with culture to mean factors which influence how people living in a society behave, think and what they believe. More particularly these sociocultural barriers have been identified as factors which may affect the use of contraception and the success of family planning programs (Nakiboneka and Maniple, 2008, Preston-Whyte, 1988).

2.6   Sociocultural barriers

This section aims to identify factors which may enable or hinder contraceptive use depending on which community a person comes from. People are both aggregated through similar understandings of beliefs and behaviours and in turn disaggregated from others due to these particular understandings. However it is important to remember that what makes one community different from another may also make it similar to yet another municipality (Cohen, 1993).

With regards to contraceptive use and culture Scott (2009) stated that when looking at sociocultural practices which influence the use of condoms in Africa three things must be taken into consideration; the movements of groups and individuals, fertility ideas and practices and the position of women in society. This is seen as a basic

interpretation of the term sociocultural and it is felt that there are many more factors to consider when examining sociocultural determinants of contraceptive use. These will be presented in this section. However it must be stated that the three considerations presented by Scott (2009) will not be dismissed but have been used to guide the division of sociocultural barriers. It was decided that each consideration related to a broader spectrum of sociocultural factors. Fertility ideas and practices could be examined under the umbrella term of Values. Group and individual movements are linked to exposure of different and new views and relate to Communication. Whereas the position of women in society is linked to the Identity of a woman placed upon her by society. These three umbrella terms Values, Identity and Communication will be explored further in the next subsections.

The work of Phillips et al. (1999) which looked at community based distribution (CBD) identified similar barriers but called them social research findings rather than sociocultural barriers. They identified the social findings of social costs, low levels of demand for limiting fertility and high-fertility aspirations as affecting demand for contraception. Just as those identified by Scott (2009) these factors will be discussed further in the Values section. Phillips et al. (1999) identified weak conjugal bonds and segmented economic roles affected family planning programmes. In this paper these are actually separated and looked at in the wider context of Communication and Identity.

2.6.1   Values

In the current context the term Values refers to the beliefs and values of an individual. They are internal decisions, thoughts and feelings, which must be taken on face value as expressed truth, due to the fact that only an individual will know his or her true beliefs. Community norms are a way of observing collective internal beliefs through external behaviours and are strongly linked to the values and importance placed upon fertility, reproduction and children.

2.6.1.1   Internalised and community norms

Community norms are the expectations imposed by society which guide the behaviour of people living within that society; they can be related to customs, morals, taboos and laws. Here we will examine how sociocultural norms and values are internalized and seen as "normal" for members of that particular society (Preston-Whyte, 1988) to the extent that individuals may not even be aware of the influence of community norms on their individual choices (Olaitan, 2011).

An example of social norms related to fertility is evident in Northern Ghana (Adongo et al., 1997) where there is a strong belief in witches and witchcraft. Witches are feared because they are believed to kill children (Adongo et al., 1997). This can lead women to have many children in order to ensure that if a witch kills some of them, there is a chance that some will survive. Women who do not conform with community norms, may be viewed negatively and as is the case in Kassena-Nankana in Ghana they may subsequently be accused of being witches themselves (Adongo et al., 1997). Additionally, in areas with high infant mortality the chance that a child might not survive can lead to women having more children than desired, in case their children should die prematurely (Akam, 2005, Konje and Ladipo, 1999).

Fertility and contraceptive use are highly interrelated. In some societies women who are unable to conceive may be ostracised or seen as inadequate (Adongo et al., 1997). They are reluctant to use contraception as they are worried that a lack of children will lead others to suspect that they are infertile. Men are also burdened by the possibility of becoming childless: facing the end of familial lineage and not being remembered by future generations are culturally imposed personal disasters which can also lead to the non-use of contraceptives in Nigeria (Isiugo-Abanihe, 1994).At the other end of the spectrum in some societies women are condemned for having children too close together, or even too many children. Where this was the experience for women in urban Bolivia the use of family planning is seen as a way of "taking care of oneself" (Schuler et al., 1994, p.213) and women became contraceptive users to avoid further criticism.

Within society women have perceptions of what is accepted by their community and what is not; this shapes their fertility preferences. Research in Kenya found that the perception of acceptance of family planning amongst social networks was more influential than their own personal approval of current contraceptive use (Dynes et al., 2012). Where women felt others in their immediate social networks approved of family planning they would be more likely to use contraception, regardless of their own level of acceptance. On the other hand if personal desire for sons was less than that of the community norm women had greater odds of being current users of contraception (Dynes et al., 2012).

2.6.1.2 **Fertility preferences**

The value that parents place on childbearing is an important motivator for contraceptive use and can be greatly influenced by the communities in which they live. Children are viewed differently in different societies; for example in Nigeria children are viewed as an indication of wealth and prestige (Olaitan, 2011, Isiugo-Abanihe, 1994), whereas in other areas of the developing world children may be viewed as security in terms of the familial lineage or financially (Al-Oballi Kridli and Libbus, 2001, Konje and Ladipo, 1999, Adongo et al., 1997). However, whether the motivation be the desire to have many children to support parents through old age, to bring forth the lineage, or as a status symbol, the end result is large families.

The desire for large families is a well-known barrier to contraceptive use (Adhikari, 2010, Eguavoen et al., 2007, Akam, 2005, Ward et al., 1992) as it can result in couples not using contraceptive methods in order to procreate as much as possible. Akam (2005) found that in Cameroon women who wanted five or more children were twice as likely not to use a contraceptive method. On the other hand in Jordan, Al-Oballi Kridli and Libbus (2001) noted that after having a second child there was less pressure to have additional children and that contraceptive use increased with parity. In Guatemalan agrarian societies large families can be beneficial as children help parents to work the land (Ward et al., 1992). This economic motivation to have many children in order to be supported through remittances in old age may be considered cultural as

it will affect the couples' beliefs about family size and in turn their motivations for contraceptive use.

In some African societies the traditional patrilineal inheritance pattern is prominent (Eguavoen et al., 2007, Adongo et al., 1997) and women may desire sons in order to ensure they will benefit from inheritance. The desire for male children can drive couples worldwide to continue bearing children until they have a son (Olaitan, 2011, Al-Oballi Kridli and Libbus, 2001, Konje and Ladipo, 1999). As well as continuing the family line, males are considered "pillars of the home" in some traditional society (Olusanya, 1969, p.15) and sons may be desired to support parents in old age (Zafar et al., 1995). In Northern Ghana one strong cultural trait leading to the preference for male children is the exclusive ability of males to make sacrifices to ancestors; they are needed to feed the spirits that in turn will protect the family (Adongo et al., 1997).

Regardless of individual motivation for male preference women who had fewer sons than they perceived the community expectation to be were less likely to report contraceptive use, suggesting that their fertility desires conformed to the community norm. This was specific for women and the desire for male children (Dynes et al., 2012). Additionally women who wanted fewer male children than the community norm were more likely to be contraceptive users (Dynes et al., 2012). These women show deviant contraceptive behaviour from the general community and may be thought of as the first adopters of the innovative behaviour of contraceptive use in their communities.

Gender preference is not restricted to partiality for male children. Islam et al. (2009) found that the matrilineal society of the Garo people, in Bangladesh, expressed a bias towards female children. Although contraceptive use was generally high among the Garo society, women with no female children and one male child were the least likely to be using contraception whereas women with one girl and no boys were most likely to be using contraception. Interestingly the contraceptive method mix revealed preference towards female methods, further reflecting the matrilineal nature of this society.

In sub-Saharan Africa it is sometimes difficult to attain a numerical value for family size preference (Cleland and Wilson, 1987) due to the innate desire for women to bear as many children as nature predicts or their God may wish. Despite this, when a numerical value is presented, often the number of living children is lower than the expressed desire of both men and women (Bankole and Singh, 1998, Isiugo-Abanihe, 1994). However as "men generally desire larger families than their wives" (Isiugo-Abanihe, 1994, p.151) women tend to conform to male desires of fertility rather than their own and are more likely to use contraception if the husband wishes to have no more offspring (Saleem and Pasha, 2008).

Replacement fertility is considered to be 2.1 children per family, meaning that on average with this level of fertility population growth would be approximately zero. Fertility rates in Africa would need to be a bit higher at about 3 children per women, depending on female child survival rates and other related factors such as birth sex ratios (Engelman and Leahy, 2006), to reach replacement level. As was shown in Chapter 1, generally fertility rates have been slowly decreasing in West Africa since the 1990s. Andorka (1978) likened changes in fertility desires to lifestyle changes (i.e. fashion styles) and moral norms, suggesting that fertility values were somewhat quicker to change than moral behaviour but, slower to change than lifestyles, and the extent of this varies depending on the underlying economic and social environments of each community. This highlights the interlinkage between fertility desires and moral norms and the influence of a community or culture on these decisions.

2.6.1.3   **Spirituality**

Spirituality or religiosity goes beyond membership of specific religious groups and relates to the extent to which individuals internalise and adopt the beliefs, values and related behaviours of the faith with which they identify. The measurement of religiosity is difficult, it may be explored through the number of times people attend religious services or self-interpretation of how religious teaching affect individual thoughts and decisions. A systematic review (Cotton et al., 2010) which looked at the measurement of spirituality and religiosity in health research found that more objective values such as frequency of attendance and religious affiliation were often

used in religiosity studies. However, many also relied on self-reported religiosity and personal reflections on the importance of religion on influencing beliefs. Cotton et al. (2010) concluded that measuring religiosity using only one or two parameters did not account for the multidimensional nature of this concept.

Okun (1999) investigated contraceptive prevalence and religiosity, whereby religiosity was measured by self-reporting and adherence to religious commandments. She found that there was consistency between self-reported religiosity and adherence to behavioural commandments, however some behaviours were more universal than others and were therefore less informative of religiosity status. In conclusion Okun (1999) found that contraceptive choices were largely unrelated to religiosity.

Gold et al. (2010) created a religiosity index, when exploring sexual and contraceptive behaviours, which consisted of religious affiliation, frequency of attendance at religious services and the influence of religious beliefs on individual decisions and behaviours. They found that young females were less likely to be sexually active if they had higher levels of religiosity. However, they were unsure of the mechanisms which led to this and questioned whether it was the internalization of religious messages or not.

Al-Oballi Kridli and Libbus (2001) found in Jordan, where despite a belief that Islam states they should not be using modern contraceptives, it was felt that if there was "good reason" then contraceptive use may be permissible. This indicates that despite religious influence, these women are not necessarily acting upon the prescribed principles of their faith and illustrates how individual values can supersede religious values. It is not only Muslims who vary in their interpretation of religious acceptance of contraceptive use. Okun (1999) found that in Israel, the incidence of contraceptive use increased as religiosity decreased among married Jewish women. This was also established by Srikanthan and Reid (2008) who attributed contraceptive use to whether a woman identified with traditional, orthodox, or liberal views of their religion.

Occasionally in Animism (Adongo et al., 1997), Islam, Catholicism and some branches of Christianity the procreation of as many children as possible is encouraged. In Liberia
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where all religions appeared to prescribe to pronatalist views women whose individual beliefs are strongly aligned with religious teaching may be reluctant to use modern contraception for the reason (Kollehlon, 1994) and it was suggested that religiosity should be explored in further depth here. In developing countries many women view their children as a gift or blessing from God (Konje and Ladipo, 1999); a belief that leads women to be reluctant to use modern contraceptives and to alter their fertility which they believe has been given to them by their God. The extent to which women believe this and it affects their contraceptive decisions is down to their religiosity rather than their identification with a religious group.

2.6.2 Identity

In the context of this thesis, Identity relates to a group of factors that are verifiable and much more tangible than Value factors. These factors include religious affiliation and hereditary attributes such as ethnicity and spoken language. They are less easily contested or questioned and are less changeable than values as they can be quantified through visible actions and traits. For example desired family size might change over an individual's life course whereas ethnicity is a physical attribute that stays the same throughout an individual's lifetime. The term cultural identity has been used in the literature to express cultural difference founded upon collective group identity (Clarke, 2008, Cohen, 1993).

2.6.2.1 Religious affiliation

Affiliation to a religious doctrine plays an important role in the way individuals behave, and to their personal beliefs, these beliefs were explored in section 2.6.1.3. Here religion will be explored with respect to religious affiliation and the social construct of religious groups. Religious groups are in effect communities, not defined through geography but through identifying with a faith, of which the members share a specific set of values or standards of conduct and similar behavioural patterns. Having an affiliation with a religion gives a person a sense of identity (McQuillan, 2004, Agadjanian, 2001) and this identity is set within the context of the prescribed behaviour and beliefs of the religion, which provides a social milieu for its

practitioners. Agadjanian (2001) posited that religious affiliation was not about religiosity but about social exposure and interaction. They used religious affiliation as a proxy for the social milieu in which women spent considerable time, which is why it is discussed under the Identity classification in terms of collective values imposed on those by their identification with a specific religious doctrine.

Some religions are open to modernism and others remain tied to the traditional, especially with regards to contraceptive use: In this case modern contraceptive use is considered innovative modern behaviour. Akam (2005) found that in Cameroon, Muslim women were five times less likely than Christian women to use contraception. In this context the Christian religion has been described as being open to modernisation, whereas those of Muslim faith were seen as more attached to the traditional (Akam, 2005). In the different setting of Taiwan, Schoonheim and Hülsken (2011) found that religious affiliation was not related to religious denomination and regardless of being Buddhist, Catholic, Protestant, or of traditional faith people readily accepted birth control. When examining religious affiliation and contraceptive use it is not uncommon to find conflicting results. Often this is to do with context in which people are identifying with different religious affiliation rather than imposed by the religion itself.

Context plays a role in the development and acceptance of the modern innovation of contraceptive use. Hailemariam and Haddis (2011, p.82) found that in Ethiopia "total unmet need for family planning was highest amongst Orthodox Christians in 2000 and [this trend] shifted to Protestants in 2005". Although this does not talk of contraceptive use it is an indicator that contraceptive use behaviour was accepted first by Ethiopian Orthodox Christians and then by Protestants. This may be unexpected as Orthodox Christians are generally more traditional in their faith and the doctrine they follow.

There is strong evidence that worldwide, across groups with the same religious affiliation there are great variations regarding beliefs related to reproduction and contraceptive use (Nasir and Hinde, 2011, Stephenson and Hennink, 2004, Agadjanian, 2001, Gregson et al., 1999). Knodel et al. (1999) speculated that different

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interpretations of the Islamic doctrine by different religious leaders in Malaysia may explain the differences in fertility experienced by their respective congregations. Muslims worldwide vary greatly in their interpretation of the acceptance of family planning by their religion ranging from permitted, to permitted but discouraged, to not permitted at all (Dhami and Sheikh, 2000).

Religious leaders are prominent and influential people within society. The image individual religious leaders present can have a great impact on particular church communities and the beliefs of specific congregations. Konje and Ladipo (1999) said that some Islamic and Roman Catholic leaders oppose family planning, yet this is a personal view taken by the leaders themselves. In the review of "Religious and cultural influences on contraception" by Srikanthan and Reid (2008) where it was found that in the teachings of Islam, Hinduism, Buddhism, Judaism, traditional Chinese religions and various forms of Christianity, the use of contraception is not actually forbidden. The only religion which explicitly forbade the use of modern contraceptives was Catholic Christianity, yet even here natural methods are permissible.

Bhushan (1997, p.35) found that in Egypt and Bangladesh, non-users were more likely to believe that "religion is against contraceptive use". However this is an overly simplistic view and it is clear that acceptance of modern birth control from a religious perspective is not universal either across or within faiths. The evidence cited above suggests that if religious leaders are educated about contraceptive methods and how they work, they may be more likely to advocate and promote the use of contraception. Affiliation to a religious doctrine should not in itself be presumed to result in negative effects on contraceptive use, as regional and local influences on the interpretations of doctrine have to be taken into account.

2.6.2.2   Ethnicity

As with religious affiliation, ethnic identity is not constrained by geographical boundaries, but may be characterized by a persons' race, ethnicity or caste; whereby people are united by a common descent, which in turn translates to a common cultural viewpoint which transcends imposed geographical borders (Clarke, 2008). Much research has been undertaken to investigate racial or ethnic differences in

contraceptive use among populations (De Broe et al., 2005, Kollehlon, 2003, Seiber and Bertrand, 2002, Bertrand et al., 1999, Ndiaye, 1998, Sable and Libbus, 1998, Ward et al., 1992). Sometimes the terms ethnicity and culture can be used interchangeably to mean a group with shared norms and behaviours (Wang and Keats, 2005). Lindstrom and Hernández (2006) and Santiso-Galvez and Bertrand (2000) explored linguistic barriers faced by Mayans in Guatemala, where ethnic roots were defined through language. A shared ethnicity may be viewed much like religion, in terms of characterizing a sub-culture with common values, beliefs and behaviours at the community level. The roles played by individuals, couples and the community in fertility regulation vary among ethnic groups who display different beliefs, institutions and normative principles (Isiugo-Abanihe, 1994).

Addai (1999) explored ethnicity differentials and contraceptive use in Ghana and concluded that although for most ethnicities other socioeconomic and demographic characteristics accounted for the majority of fertility differentials, for the Fante/other Akans ethnic group, ethnicity was a significant determinant of contraceptive use. This highlights that although it is not universal, for some individuals their ethnic affiliation plays a role in determining contraceptive use. The specific ethnic traits which contribute to this are difficult to pinpoint. When looking at cultural barriers in the developing world Konje and Ladipo (1999) found that communities may view family planning programs with distrust and as a ploy to eliminate a particular tribe or race, especially if they form a small proportion of the national ethnic composition. This suggests that, if a particular ethnicity is in the minority amongst a wider group of people, its members may be less likely to use contraception.

In Nigeria the various ethnicities have strong individual identities. The Yoruba tend to live in urban areas and are involved in trading, which exposes them to different people and new ideas, whereas the Fulani experience early and universal marriage, live in seclusion and have lower education. The Ibo have scattered farming households and amongst this ethnicity bridal wealth payment is high. Interestingly, contraceptive use was found to be highest amongst the more educated Yoruba women and lowest for the less educated, secluded Fulani women (Kollehlon, 2003). This highlights the

importance of accounting for socio-demographic differences when examining variables such as ethnicity, as ethnic stratification may be related to social stratification. In conclusion this study found evidence that "statistically significant fertility differentials by ethnicity remained even after accounting for socioeconomic and demographic variables" (Kollehlon, 2003, p.201).

Despite the implementation of family planning strategies among hard-to-reach, rural populations contraceptive use among the Mayans remains low (Ward et al., 1992). Seiber and Bertrand (2002) investigated whether access to contraception was a deciding factor in family planning use for Mayans. A third of respondents stated that they did not use the closest family planning facility due to no presence of Mayan speaking staff, indicating that access itself was not the deciding factor in contraceptive use, although it "probably plays some role" (Seiber and Bertrand, 2002, p.175). De Broe et al. (2005) found that language barriers and differences between social groups, defined by different ethnic backgrounds, restricted the spread of contraceptive knowledge and uptake in Guatemala.

When investigating the determinants of contraceptive use in Turkey, Koc (2000) used language as a proxy for ethnicity. Language and ethnicity are closely linked and are cultural attributes to sub-groups of people, both of which can act as barriers to health facilities (Bertrand et al., 1999). As with the Nigerian example, ethnic classification can hide stratification in society and "defining ethnicity is a complex issue" (De Broe et al., 2005, p.302). Some research has used residence or region as alternative variable when a direct ethnicity variable is lacking (Akam, 2005).

2.6.2.3　**Marriage**

Marriage is a complex event and the transition from unmarried to married varies greatly worldwide. However, universally the act of marriage is usually followed by procreation and one focus for married couples is to start and grow their own families (Akam, 2005). Therefore the age of marriage is an important factor to consider when looking at contraceptive use and fertility. Women who marry later will in general have fewer children, as they are exposed to fewer years in which they are at risk of pregnancy. However Cleland et al. (1994) have suggested that the postponement of

marriage in Africa may not result in the same patterns of later childbearing that have been found elsewhere. This is due to the complexity of marriage in African settings and the gradual process of union formation, resulting in many types of partnership (Cleland et al., 1994).

Not only does the process of marriage vary across countries but the cultural understanding of marriage and the meaning of this process also vary. The practice of polygamy is common in sub-Saharan Africa and marital status changes are not uncommon. However, the effect of polygamy on fertility is very intricate (Makinwa-Adebusoye, 2001). Various researchers have found that polygamy and contraceptive use are associated in different ways not only across countries but within them too.

Examining polygamy at the individual level Varea et al. (1996) found Moroccan women in polygamous marriages were more likely to use contraceptive methods. They had expected to find the opposite, hypothesising that there would be competition between co-wives which would lead to decreased use, as was observed by Solo et al. (2005) who examined polygamy in Ghana and in Cameroon by Mburano (2007). These contrasting views relating to polygamy and contraceptive use were highlighted by Konate et al. (1998), who found that in Mali women reported that having co-wives both spread the responsibility of having children but also increased the pressure to have many sons for security and inheritance purposes. Decreasing levels of polygamy have been associated with continued high fertility as men continue to desire large families but the pressure to fulfil this falls on fewer women (Lockwood, 1995).

Ezeh (1997) found that in areas of low polygamy, fertility desires were generally lower than for counterparts living in high polygamy regimes, and they were more likely to adopt a method of birth control. They argued that polygamy should be viewed as a "sociocultural setting" as opposed to individually, as women in certain settings seemed to share the preferences of others living within the specific regime being examined. This could be related to the view that polygamy is associated with the low status of women, as women in polygamous marriages are seen as being controlled by their husbands (Lockwood, 1995).

2.6.2.4   **Gender roles**

In every society males and females have prescribed roles, which may be liberal or traditional depending on the social contexts in which they live (Mason and Smith, 2000). It is this socially imposed gender-stratification which places gender roles in the Identity category of this analysis. In traditional African societies, as with many other societies, it is not uncommon for men to be considered the heads of families. In such cases if husbands present negative attitudes towards contraceptive use, wives may be prevented from using contraception despite their own approval of family planning (Onwuzurike and Uzochukwu, 2001). This prevention is not necessarily overtly imposed by the husbands but is the socially prescribed behaviour of abiding by a husband's desires.

Gender roles are particularly important with regards to which ideals and values individuals are exposed to, and these socially prescribed roles vary greatly from culture to culture. In instances where women are socially powerless and rely heavily on their husbands, this is known as low autonomy and leads to low gender equity (Leone and Coast, 2014). In order to be accepted by both the husband and his family a woman is expected to behave according to the wishes of her husband (Sharan and Valente, 2002, Khan, 1999, Isiugo-Abanihe, 1994). The reluctance to override others' opposition to contraceptive use has been found to be a "significant reason for unmet need" (Bhushan, 1997, p.38). The belief that the use of family planning conflicts with the husbands' desires can lead a woman to refrain from using contraception, regardless of her own desires (Hamid and Stephenson, 2006, Olusanya, 1969). This has been recognised as a construct of the communities in which women live (Srikanthan and Reid, 2008).

Low personal autonomy can be emphasised by limited social interactions between males and females (Adongo et al., 1997). The inequality between men and women, rather than being a construct of religion, has been attributed to the community structures in which [Muslim] women live. Omran (1992) highlights passages from the Qur'an which highlight that Islam does not prescribe inequality, but views men and

women as equals on both social and religious levels, further emphasising the social influence of gender roles in these communities.

Ensor and Cooper (2004) identified that the level of female education and the extent to which a woman contributed to household income had an effect on the level of influence the female voice would have in household decision-making. Skewed gender relations were also reflected in the finding that Ghanaian women with little education were less independent and more subservient (Adongo et al., 1997). This lack of independence is referred to as empowerment in the literature. While empowerment is not consistently associated with a desire for smaller families, women who have greater autonomy may have more resources to realise their fertility intentions whether it be few or many children (Upadhyay and Karasek, 2012).

Autonomy in India was observed by Moursund and Kravdal (2003) as falling into four categories: physical autonomy, decision-making autonomy, economic autonomy and emotional autonomy. Physical autonomy involves mobility which will be discussed further in the communication section. Decision-making autonomy refers to who makes decisions from healthcare to household purchases. Economic autonomy relates to whether the wife can decide how to spend her own money and emotional autonomy is about the closeness of a couple and was operationalised by examining whether it was felt that wife-beating was justified or not. The relationships between contraceptive use and the different types of autonomy are varied. Emotional autonomy was examined at the community level as the questions did not refer to an individual woman's situation. Here emotional autonomy was related to increased use of contraception. Women living in areas with high levels of emotional autonomy showed a weak desire for more children, indicating how autonomy, although experienced by individuals, can be influenced by the community. However, there has been research in Asia which found that regardless of the autonomy being measured pronatalist attitudes of Muslim women were not explained by autonomy differentials (Morgan et al., 2002).

Gender roles and the stratification of gender, imposed by society, is a complex concept and the relationship between fertility and gender roles are not straightforward (Leone and Coast, 2014, Do and Kurimoto, 2012). The imbalances between gender roles with

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regards to contraceptive use may be addressed by increasing male involvement. However the inclusion of both sexes in family planning interventions is needed to address gender inequalities (Frye Helmer, 1996). Men need to be exposed to contraceptive knowledge in order to support their wives' choices. However if the male-dominant relationship is enforced through interventions purely targeted at men it is highly likely that gender inequalities will remain and the voice of the woman will not be heard.

2.6.3 Communication

Communication variables are related to the sharing of ideals and values and how exposure to different values and identities can change an individual's values. These relate to the diffusion theory which was previously discussed in section 2.3.3. Without communication there is no exchange of different viewpoints. This section will highlight different ways that sociocultural settings can affect the communication to which individuals are exposed.

2.6.3.1 Personal interactions

The interactions people have with others will affect the exposure they have to new ideas, values and views. Agadjanian (2001) carried out research into social interaction related to religious participation in Mozambique; it was argued that religious participation was not about prescribed religiosity but rather the social exposure and interaction which was provided by religious affiliation. It was suggested that the discourse which resulted from being a member of a congregation could either help with the diffusion of ideas or not. On the one hand membership of a close, homogenous religious community may lead to much lower, or no diffusion of ideas, whereas affiliation with a heterogeneous religious community, with a larger, more socially diverse membership could accelerate the diffusion of ideas. The informational bridge created in heterogeneous religious communities provides a platform for information exchange between higher status and lower status women, the former of whom often have more advanced contraceptive use (Agadjanian, 2001). Likewise in larger communities with multiple congregations there is a higher chance of interacting

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with someone outside one's immediate church family who has different views and beliefs than there is in a smaller more homogeneous society.

Schuler et al. (1994) found that in Bolivia, contraception was rarely discussed and when talked about the main focus tended to be indirectly about side effects. The problem with such discussions is that indirect and incorrect anecdotes fuel misconceptions for which accurate information is not pursued. The physical side effects such as weight gain or weight loss can act as deterrents for use, as women do not want to be recognised as contraceptive users, or be thought of as "sick" as a result of the side effects.

The female seclusion of purdah witnessed in Muslim communities may lead to restricted interactions with the wider community (Isiugo-Abanihe, 1994) and create an environment whereby female autonomy is suppressed. The segregation of sexes and lack of communication both inside and outside of the home contribute to the undermining of the female views and a lack of outside influence on women's beliefs and values. This is also related to personal mobility as women who are able to travel outside of their home have greater personal freedom than those who are restricted by more conservative households (Stephenson and Hennink, 2004). However, autonomy may be examined in various forms and not only through the physical level of personal mobility, but also with regards to decision-making and economic situations.

2.6.3.2 Spousal communication

The hierarchical structure present in some societies can create segmentation between males and females and the influence of men may pose a major stumbling block to the use of family planning (Onwuzurike and Uzochukwu, 2001). It may be that women need permission from men before they undertake any activity, from leaving the compound to the sale of goods (Adongo et al., 1997). In these societies it is not uncommon for women to have to consult a hierarchy of males, from their husbands, who then consult the compound head or community leader, who may then consult a religious leader or soothsayer (Adongo et al., 1997, Ward et al., 1992). If the use of contraception needs to be agreed by such a hierarchy, it may deter women from considering the notion or may lead them to use in secrecy. Community leaders are

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respected among communities and their opinions are highly regarded, likewise men are respected by women and if either of these groups views modern contraceptive use as unacceptable, this may be reflected in contraceptive non-use, regardless of whether the woman is personally against use or not (Ensor and Cooper, 2004).

Fertility decisions are complex and many involve not only the immediate couple but the extended family. The extended family may influence all aspects of a marital relationship and impose their own fertility desires upon a couple (Yue et al., 2010). "Male dominance is profound in matters of reproduction" (Isiugo-Abanihe, 1994, p.150), if women express a desire to use modern contraceptives this can lead to diminished spousal trust (Adongo et al., 1997). One way to avoid discussion about contraceptive use and negotiations over sexual intercourse was observed in Bolivia where women share a their bed with the children and when the husband makes advances the child is woken up, thus stopping the possibility of intercourse (Schuler et al., 1994).

In Kenya, a wife's perceptions of her husband's approval were found to be an important predictor of contraceptive use (Lasee and Becker, 1997). It would be thought that discussion as a couple results in each spouse knowing what the other feels towards contraceptive use and family planning, however DeRose et al. (2004) found that discussion did not necessarily improve knowledge about a partner's attitude towards contraception. Yet a common finding in spousal-communication research is that there is a positive relationship between spousal discussion and use of birth control (Klomegah, 2006). Isiugo-Abanihe (1994) postulated that spousal communication may be a form of couple bonding and could enable spouses to find a middle ground and reconcile their differences. Moreover, conjugal discussions may result in more balanced gender relations as a result of joint decision making (Islam et al., 2010).

2.6.3.3 Social networks

It is important to acknowledge the role that social networks in the form of traditional, kinship and informal networks play on influencing contraceptive use. These information networks are the avenues through which women are exposed to fertility

intentions of other people in their community (Lindstrom and Muñoz-Franco, 2005, Kohler, 2000). Social networks have been found not to initiate fertility decline but once varying family size ideals are present in society these networks can provide an acceleration in the adoption of new ideals and related behaviours (Kohler, 2000). Avogo and Agadjanian (2008) found that when men received encouragement from their social networks, spousal communication was increased and their wives were subsequently more likely to use contraception.

Social networks include immediate family and other members of the community. The members of a person's social network will depend on the societal roles present and imposed in society. Additionally it is important to consider the matriarchal or patriarchal nature of a community as this will greatly influence a person's social network. In patriarchal societies the male will tend to live where he grew up, surrounded by his family and friends and in this context women may have a much smaller social network. The inverse may be the case for matriarchal societies (Behrman et al., 2002).

When examining the effect of social networks and contraceptive use in Cameroon Valente et al. (1997) found that the behaviours of members within a social network are more important that her own characteristics. If contraceptive use is accepted within a social network, and members were actively encouraged to use, respondents were more likely to become contraceptive users. In this case perception of contraceptive approval were found to be significant determinants of increased contraceptive use (Valente et al., 1997).

2.6.3.4 **Media exposure**

Communication can occur on many different levels and through various platforms, one of which is through media exposure. There are two types of media exposure which can affect the way in which people view family planning: specific family planning advertisements and behaviour change communication, and general media exposure. Women in West Africa who had been exposed to family planning media messages were less likely to have an unmet need for contraception (Westoff, 2012). In Kenya, 50% of contraceptive users reported exposure to radio, print and television family

planning messages and their average ideal family size was 4.7 children, compared with 5.5 children for those who reported no exposure (Westoff and Rodriguez, 1995). Similar findings were found in the Philippines, Tanzania, and Uganda, where current modern contraceptive use and intention to use was strongly associated with exposure to family planning media messages (Gupta et al., 2003, Kincaid, 2000, Jato et al., 1999).

Westoff (2012) explored exposure to general mass media and this too was found to have similar effects. General radio exposure was strongly associated with modern contraceptive use in half of the sub-Saharan countries in the analysis. Likewise television exposure was also positively associated with increased contraceptive use. This study found that specific family planning messages were not always directly correlated with use of modern contraceptives. When focusing on unmarried women alone, there was a positive correlation with use for those exposed to family planning via the radio and television.

In Nepal it was found that women exposed to mass media, either from the radio or television, had fewer children than those with no exposure (Adhikari, 2010). For women in Bolivia who had little personal contact with others their exposure to new ideas came from exposure to mass media campaigns (Saba and Valente, 1998). This shows that diffusion of new ideas does not occur through personal interaction alone, which can be replaced to at least some extent by media exposure. One explanation for the success of general exposure may be due to the fact that television soap operas often address issues related to family planning and contraception, and women are exposed to them in this way.

2.6.3.5   **Mobility**

Mobility relates to a person's place of origin and their exposure to migration activities. The physical location of residence will affect the cultural environment one is exposed to, and the extent to which a person is mobile will affect their exposure to different ideals and values by expanding their networks. A person is greatly influenced by the environment in which he or she grows up and Akam (2005) found that living in a city

since childhood greatly increased the chances of using contraception, whereas migrants to urban areas had fewer resources than those who had been socialized in that environment.

Al-Oballi Kridli and Libbus (2001) identified differences in urban and rural fertility, finding that rural fertility tended to be greater than urban fertility. For women living in rural areas it may be difficult to access family planning services if they are situated outside the local commune (Khan, 1999). . Although we know that some of the differences relating to fertility differentials in urban and rural settings may be related to access, economic differences, etc. when a sociocultural perspective is applied additional reasons for these differences may surface. For example if we consider rural and urban areas as different settings, where people are exposed to different avenues of communication the differentials could be due to greater diffusion of innovations in urban areas, leading to increased contraceptive use and smaller families. Andorka (1978) found that where "social conditions are more favourable for innovations" (p.281) the diffusions of ideas spread faster, although the social conditions necessary for this were not specified.

The effect of changing sociocultural environment can also be explored when looking at the contraceptive use of migrants. Guatemalan rural-urban migrants initially displayed low contraceptive knowledge, but this soon increased and surpassed that of urban non-migrants (Lindstrom and Hernández, 2006). Although migration is not directly a cultural attribute, it results in exposure to different sociocultural behaviours and ideals. These may be exchanged from migrants to local residents or from locals to migrants.

Where women require permission to leave the home, their mobility outside the familial compound may be restricted. Khan (1999) found that in Pakistan women had more freedom to visit relatives, whereas visits outside the village were unlikely to be unescorted or without permission. Restricted mobility of women and the cultural unacceptability of leaving the home (Hamid and Stephenson, 2006, Ensor and Cooper, 2004, Bongaarts and Bruce, 1995) will mean that women will be less likely to be exposed to new ideals.

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2.7   Diffusion of innovations and sociocultural barriers

Alongside specific sub-cultural groupings on the basis of religion, location of residence and ethnicity, are the less clear cut aspects of the sociocultural spectrum which include beliefs and value systems. The ideational innovation theory relates to individual awareness of contraceptive methods and personal evaluation of using such methods, whereas behavioural diffusion is linked to the introduction of new technologies and modification of community attitudes towards contraceptive use. The effect of cultural heterogeneity or homogeneity on ideational innovation and behavioural diffusion will be explored in this section.

Cultural customs and beliefs can guide the way contraceptives are viewed within communities as has been discussed in the previous section. Societies where conception is viewed as sacred (Ward et al., 1992) or where the philosophy of letting nature taking its course is prominent (Santiso-Galvez and Bertrand, 2000) do not make a favourable environment for promoting contraceptive use. Family planning may be viewed as "foreign" leading those who are not familiar with it to be sceptical of its benefits (Santiso-Galvez and Bertrand, 2000). Campbell et al. (2006) remarked that sometimes contraception can be viewed as being as harmful as pregnancy; misconceptions can lead to the belief that modern contraceptive methods are dangerous, and can cause infertility or even death (Adongo et al., 1997). Awareness of contraceptive methods is highly linked to knowledge and the lack of knowledge or information will affect how people view the use of contraceptive methods which can lead to these false beliefs (Price and Hawkins, 2007).

Although some negative perceptions of contraception are not "false", such as the possibility of side effects from some methods, negative information and experiences can become entangled in rumour and misconception further discouraging contraceptive use (Avogo and Agadjanian, 2008). Robey et al. (1996, p.13) highlighted that "sometimes people's fears are based on rumours". On the other hand if positive experiences are more common this can encourage people to discuss contraceptive use in an optimistic light and lead to more open-minded views of family planning (Kohler et al., 2000).

The use of modern contraceptives can be linked to moral degradation and increased promiscuity among the female population (Konje and Ladipo, 1999). Morrison (2000) found that a Cambodian refugee was beaten by her husband because she wanted to use contraception and he believed that this meant her morality was questionable. This departure from passivity in sexual relations was also seen amongst the Yoruba in Nigeria, where once women became aware of contraceptive methods it was considered hard for them to keep their sexual morality (Olusanya, 1969). Coale (1984) noted that moral acceptance of birth control was one prerequisite for fertility decline. This moral acceptance is necessary on both a societal and individual level and it occurs when the use of contraception is no longer associated with promiscuous sexual behaviour and extramarital affairs, but with fertility control (Konje and Ladipo, 1999).

Social pressure not to use modern methods of contraception can be exerted by community and religious leaders, family, husbands and even, from the subject's point of view, God and the ancestors (Ward et al., 1992). Where childbearing is seen as the path to respect among society there is a social cost to challenging the traditions and customs which have become social norms in these communities (Olaitan, 2011). Social opposition emerged as being one of three main barriers to contraceptive use in Madagascar (Randrianasolo et al., 2008). The belief that contraceptive use is culturally and socially inappropriate can lead women to be disinclined to practise contraception (Hamid and Stephenson, 2006) and the few "users of modern contraceptives keep their practices secret from their best friends and relatives because they feel somewhat embarrassed" (Tucker, 1986, p.314), further curtailing behavioural diffusion in urban Pakistan and rural Peru, respectively.

It is primarily the attitudes and beliefs of an individual that direct contraceptive behaviours (Sable and Libbus, 1998) but the method by which these are changed is important in terms of diffusing new approaches. Ward et al. (1992) noted that misconceptions of how contraceptives act to prevent birth can lead women to believe that they are actually "murdering" the unborn child. Views such as this can be hard to overcome in societies where it is taboo to discuss family planning, restricting the diffusion of correct knowledge. In some societies discussion of intercourse and family

planning can lead to rumours and ostracism (Adongo et al., 1997), to the detriment of the diffusion of positive contraceptive knowledge.

The communication methods by which diffusion may occur can be through media, individual, familial and communal interactions. Diffusion can be aided or hindered by the composition of societies, for example diffusion is harder amongst communities where segregation is prominent. One such factor of segregation is the cultural make up of a society in terms of heterogeneity and homogeneity. Olaitan (2011, p.228) discussed how community norms can influence reproductive autonomy and that "household and community influence can be so powerful that they obscure the line between individual desires and community norms".

In culturally heterogeneous communities, where there is a multitude of religions, ethnicities or language groups living in proximity to one another, there is greater exposure to differing fertility intentions. In such environments, it is likely that community norms will support individual changes (Olaitan, 2011). Alternatively, the differences between these communities, such as language, may present a barrier to diffusion of new behaviours and technologies.

In culturally homogeneous, traditional societies behavioural deviance may more likely be penalized than in a heterogeneous community (Lightbourne, 1985). Behaviour which is not coherent with social norms may be viewed with suspicion and uncertainty. However, once deviant behaviour is accepted the diffusion of these behaviours may be much quicker than in a socioculturally heterogeneous community. It was observed by Bongaarts (2006, p.8) that "once a region or country had started a fertility decline, neighbouring regions with the same language or culture followed". This supports the theory that communities with cultural similarities can enable the rapid diffusion of fertility behaviours across geographical boundaries (Hirschman, 1994).

2.8 Conceptual framework

In this section an attempt will be made to collate all the information discussed previously into a practical representation of how sociocultural barriers and enablers affect individual contraceptive use.

2.8.1 Additional considerations

As has been discussed, many factors shape people's beliefs and behaviours towards family planning. Knowledge and financial costs were identified but as yet have not been fully discussed. This is because they are not direct sociocultural barriers, even though it is acknowledged that they do play a role in shaping of attitudes, beliefs and behaviours towards contraception and contraception use. Furthermore it is recognised that sexual behaviour results from complex socio-cultural values, alongside economic and political conditions which differ from society to society and also between groups within societies (Coast, 2007). However, for the purpose of this thesis the influence of cultural context on reproductive behaviour will be explored independently from economic and political settings. Bongaarts (1978) stipulates that indirect determinants act through direct determinants to affect overall fertility. In this case cultural variables, which are the indirect determinants, are being explored to see how they affect contraceptive use, one of the direct determinants of fertility.

Although knowledge in itself is not a cultural barrier to contraceptive use, our knowledge of something shapes the way we view it, understand it, and accept it (Akam, 2005) and therefore will affect how people relate to fertility regulation. Education plays a role in the diffusion of new ideas and a lack of education has been found to retard the innovation process (Tsui, 1985) yet despite being a "powerful agent of social change [education cannot effectively change] …attitude to any appreciable degree" (Olusanya, 1969, p.16). In this instance Olusanya is discussing contraceptive acceptance in the Yoruba community in Nigeria where, although family size ideals were changing, both educated and uneducated men believed that contraceptive use was closely related to promiscuity. This highlights the importance of

not only changing ideals but also innovative behaviours through which the views of promiscuity may be altered.

Some sociocultural factors may be considered as being related to economic resources or education, for example certain ethnicities may be more prominent in a particular economic stratum of society or may be more educated than another. However, this study identifies a persons' ethnicity as a cultural element rather than their wealth, which is considered as economic. It has been suggested that the importance of cultural influences are as strong or possibly stronger than economic influences (Cleland et al., 1994, Lapham and Mauldin, 1972). For these reasons economic and education barriers are not ignored by this research instead they are grouped under the umbrella term "individual characteristics" in the conceptual framework presented in this section. They will be included as control factors in the analysis carried out in Chapters 3 and 4.

Contraceptive intentions and resulting fertility behaviours are affected by both internal-individual factors and external factors, posed by husbands, families and the wider community (Kar and Talbot, 1980). Bhushan (1997) also identified that contraceptive behaviour is dependent on both personal factors and wider social influences. Therefore contraceptive behaviour needs to be framed within the community in which a person lives. Although individual level factors may shape individual desires and beliefs the cultural environment in which they live will have a strong influence upon whether these factors will lead to limitation or not (Stephenson and Hennink, 2004). This is represented in the model by the socio-political context and acknowledges that individuals are influenced not only by which policies are made but also how they are created and who implements them (Lee et al., 1998), which in turn will affect community reception of new policies.

The influence of different life stages is accounted for by the division of individual characteristics into those which are fixed over the life course and those which change over time such as parity. In the context of reproductive health and the use of family planning, life course stages are particularly important when considering an individual's unmet need (Madise and Seims, 2013, MacQuarrie et al., 2011, Stephenson et al., 2011, Tucker, 1986). This relates to age-specific patterns of contraceptive use. For

example, a woman who has completed her family may desire to use a permanent method of contraception, whereas a woman who desires more children will not be in favour of sterilization as a form of contraception. Alternatively, living in a society where there is a widespread fear of ostracism related to barrenness, a woman with no children will view the use of contraception perhaps less favourably than a woman who has already given birth. These pathways of influence will shape people's motivations for contraceptive use and will be related to their life stage experience.

The conceptual framework presented in Figure 2.1 captures the relational perspective of the community on individual contraceptive behaviour, and the dynamic nature of how an individual's beliefs and behaviours can in turn influence those of the community and vice versa. This was explored by Tuoane et al. (2003) who concluded that the choosing "a particular method of contraception is a function of both individual and community characteristics" (P.129). The concept delivered here is that not only is method choice related to influences at the individual and community level, but so too is contraceptive use.

The cyclical nature of group-level forces and individual behaviour and the importance changing fertility ideals, unfolding throughout an individual's life course have been found to be important influences of fertility preferences worldwide (Madise and Seims, 2013, Buher-Kane, 2007). "The culture of sub-populations, loosely defined by religion, language or region, appears to exert a major influence on the timing of reproductive change, independently of levels of development, education, or provision of family planning services" (Cleland and Wilson, 1987, p.24). It is for this reason that the framework does not include any supply, demand or quality barriers other than those which have been identified as sociocultural. This framework is similar to that

Figure 2.1. Conceptual framework showing community and sociocultural influences on individual contraceptive behaviour
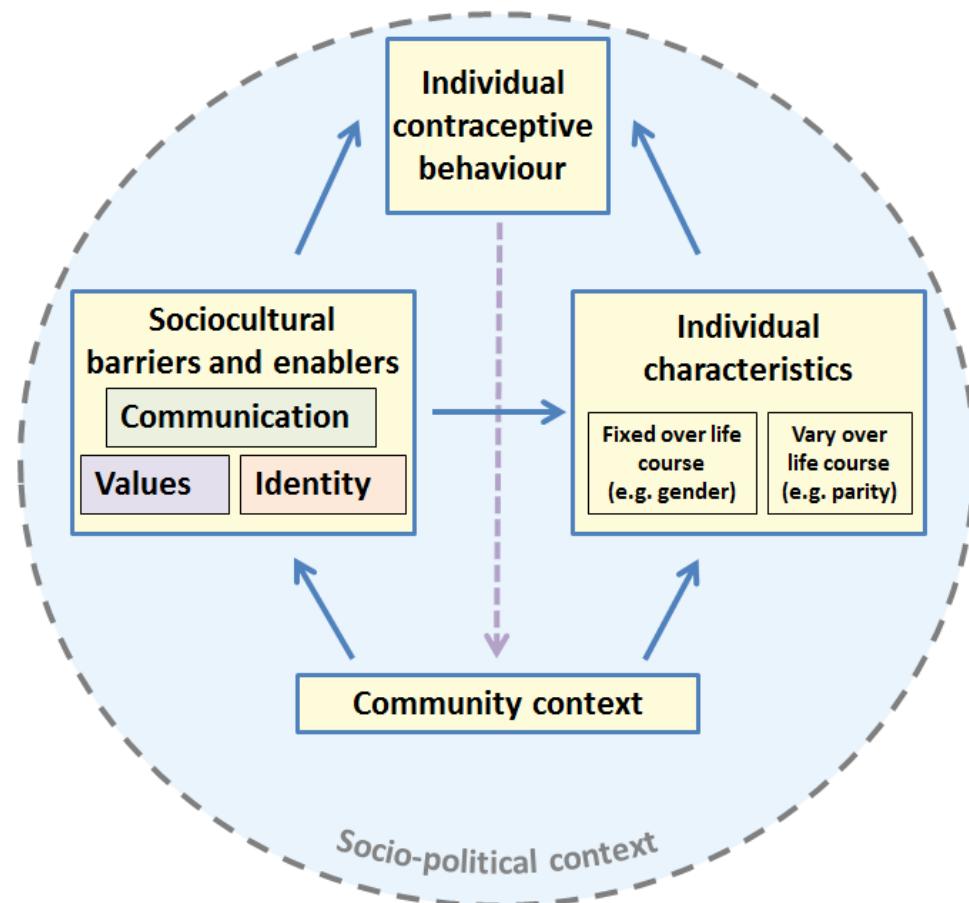
presented by Akam (2005) when examining contraceptive use in Cameroon. They identified contraceptive use, individual characteristics and the social and economic setting as the main factors in determining contraceptive use. This recognises both the individual and social influences on contraceptive use and their schematic framework also recognises the political context in relation to contraception.

In the paper by Akam (2005) access and quality of family planning services are acknowledged after the decision to control one's fertility. These are not included in the conceptual framework being explored here as it is felt that these factors are separate from sociocultural factors and come after the decision of fertility control has been

internalised by the individual. Additionally, it has been found that women who cite lack of access and cost as reasons for contraceptive non-use account for less than 5% of married women in sub-Saharan Africa (Madise and Seims, 2013).

Davis and Blake (1956) emphasized that variables related to cultural influences are not necessarily governed by rational attempts to control fertility but may result from socio-cultural conditions. Therefore the sociocultural factors identified in section 2.5, which have been categorized into three groups, may have positive or negative outcomes on contraceptive use and they also may not be present in the same way in all societies. The classification into three groups; Values, Identity and Communication, was undertaken to provide a framework from which to understand the different "culturally-constituted systems of meaning" present in each society (Parker, 2009, p.259).

Sociocultural variables which relate to *Identity* are factors which can be objectively identified such as religious affiliation as well as hereditary attributes such as ethnicity and the language spoken. These cannot be contested because they can be quantified through visible actions and traits. *Values* are linked to internal thoughts and feelings, which must be taken on face value as expressed truth due to the fact that only a respondent will know their *true* beliefs. *Communication* variables are related to the sharing of ideals and values and how exposure to different Values and Identities can influence an individual's behaviour.

An individual's behaviour is primarily driven by his or her personal characteristics. However, there are additional factors that can have an effect on a woman's beliefs and behaviour regarding fertility control. Chapter 3 will explore to what extent individual contraceptive use is influenced by these various sociocultural factors across and within countries in West Africa. Chapter 4 will investigate how sociocultural factors hinder or enable contraceptive use on a local level, focusing on Saint-Louis, Senegal. Chapter 5 will discover how family planning interventions attempt to overcome these sociocultural barriers and extend their reach amongst target populations.

By operationalizing the three concepts of Values, Identity and Communication through the aspects outlined in section 2.5 it will be possible to explore the conceptual

framework further. This research will investigate whether or not equal weight should be given to these three categories of sociocultural barriers when determining influences on contraceptive use. The framework will be used throughout the thesis to guide the choice of variables for analysis, informing both the data collection and the secondary analysis of data.

2.9   Conclusions

The importance of applying a cultural lens is evident when examining fertility decline and its associated behaviour of increased contraceptive use. Although long standing theories such as the demographic transition did not originally acknowledge the importance of sociocultural determinants, more recent extensions of these theories have attempted to incorporate the significance of sociocultural factors. This body of work attempts to show the necessity of including sociocultural barriers in social science research related to contraceptive use and family planning.

Sociocultural barriers are extensive, and this may account for the fact that often authors only investigate a few sociocultural elements or discuss cultural barriers in general, rather than as specific entities. This chapter highlights the cultural barriers which are most likely to affect contraceptive use. These were found to be related to individual and community Values, Identity and Communication. Within these categories the value of children and community norms were identified as indicators of the values related to contraceptive use. Identity is a larger concept which encompasses both Values and Communication, but relates to beliefs and behaviours imposed and observed by the community. The sociocultural barrier of Communication was found to be affected by interactions on an individual level, community level and inter-community level (through migration).

The geographical location of West Africa has been chosen for this thesis because of its rich cultural heritage and its continued regional and national variations in contraceptive use. Education and economic variables will be included in the analysis, alongside other notable control variables, as the importance of incorporating these

variables is clear from the literature. It is accepted that the significance of these variables has been proven by previous research and therefore analysis into these relationships will not occur in this thesis. The main analysis will investigate sociocultural variations at an individual level within the community context, using the sociocultural elements which have been identified in this chapter.

3. Paper 1: Sociocultural determinants of modern contraceptive use across and within West Africa

3.1   Objectives

This paper will examine the sociocultural determinants of contraceptive use both within and across West African countries. The variation in the success of contraceptive uptake through already existing family planning interventions across West Africa may be in part attributable to the presence of sociocultural barriers. This analysis aims to identify which sociocultural factors, in particular, are significant determinants of contraceptive use in seven West African countries. This will provide an understanding of the nuances of contraceptive use, offering insight into which barriers future family planning interventions should target.

Previous studies have investigated the association of specific sociocultural aspects with contraceptive use (Sharan and Valente, 2002, Addai, 1999, Knodel et al., 1999, Kollehlon, 1994). Others have attempted to investigate the associations between contraceptive use and cultural or contextual factors among specific populations within a region or country (Adongo et al., 1997, Gule, 1994, Ward et al., 1992, Olusanya, 1969). This paper will combine these approaches and will investigate the association between contraceptive use and contextual factors across and within West African countries.

There are wide variations in contraceptive use in West Africa and this study is concerned with investigating the variations across, as well as within, borders. Cleland et al. (1994) suggested that treating each African country as an individual entity would deny strong regional patterns relating to the fertility transition which are evidenced in the literature. By exploring variations across and within countries the idea of a regional pattern will be explored further and empirically.

This paper focuses on the use of modern contraceptive methods due to the fact that modern methods of contraception are "more effective than traditional methods in

preventing unintended pregnancies" (Westoff, 2012, p.1). The first research question which will be addressed is 'What are the sociocultural determinants of modern contraceptive use in West Africa'? The second research question is 'How do these [sociocultural determinants] differ between and within countries'? This will be done through logistic regression and multilevel modelling using Stata 12 (Stata Technical Support, 2011).

3.2 Determinants of contraceptive use

Many studies have been undertaken to explore the determinants of contraceptive use. The findings of some of these will be presented in this section to provide an understanding of why certain variables will be explored and used in this paper. Age is a variable often used in family planning analyses (Grace, 2010). Okech et al. (2011, p.29) found that in Kenyan city slums women aged 20-39 were more likely to use contraception "compared to those aged below 20 years and above 39 years". Whereas in Nigeria women aged 45-49 were significantly more likely to be current users of contraception than those aged 20-24 years (Oyedokun, 2007). This suggests that the motivations for contraceptive use vary by age, not only within but also across countries. When older women desire to use contraception it is often in order to limit future births as they have fulfilled their family size desires (USAID, 2005). Younger women are often motivated to use contraception in order to space their births. This links to parity, in that older women often have a higher parity than younger which explains, to some extent, their different desires.

Education has also been found to be related to contraceptive use. Increased educational levels have been found to have a significant positive relationship with the adoption of contraceptive use (Westoff, 2012, Tuoane et al., 2003, Uchudi, 2001, Addai, 1999, Kollehlon, 1994). Advanced schooling was described as a catalyst for changing attitudes and lifestyles (Uchudi, 2001, Kalipeni, 1997, Kirk, 1996), which in turn leads to the acceptance of small families and contraceptive use. Husband's education was found to be highly correlated with wife's education (Becker and Costenbader, 2001) and when respondent's characteristics were accounted for the

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characteristics of the husband such as occupation and level of education became less strong or even insignificant (Moursund and Kravdal, 2003, Oheneba-Sakyi and Takyi, 1997, p.47, Tawiah, 1997, Ainsworth et al., 1996).

Place of residence was identified as significantly associated with contraceptive use (Ferede, 2013, Kollehlon, 1994). Many theories have been put forward as to the sources of this difference. Addai (1999) explored residence as an indicator of geographic proximity to services. Additionally Uchudi (2001) postulated that urban residents would be more likely to be exposed to the pressures of modern life, mass media and different social-networks which would influence fertility desires and contraceptive adoption. Kalipeni (1997) related the effect of "modern life" to the erosion of traditional practices, however they suggested that it was not modernization alone which stimulated fertility regulation but that population pressure may also play a role in explaining the "significant relationship between population density and crude birth rates in predominantly rural districts" (p.203). Whereby rural districts are seen as less exposed to "modern life". Woldemicael (2007, p.19) also noted that "women who live in rural areas have higher desired family size compared with those living in urban areas. As a result of urban-rural fertility differentials place of residence is often included as a control variable in fertility research.

There has not been much in-depth research done into the relationship between migration and contraceptive use in Africa. Lindstrom and Hernández (2006) explored how migration experience and current residence relates to contraceptive use in Guatemala. They established that contraceptive use patterns of recent rural-to-urban migrants were not much different from those of rural non-migrants, but that the odds of using a modern contraceptive method were more than twice as high amongst rural-to-urban migrants who had migrated over five years previously. However they found that when accounting for contraceptive knowledge the odds of contraceptive use was no longer significantly different between rural non-migrants and those who had migrated more than five years ago, suggesting that lack of knowledge remains an important determinant of contraceptive use in Guatemala. Similar outcomes were evident in African cities, with the odds of using contraception increasing with duration

of residence in cities (Brockerhoff, 1995). In a separate analysis Lindstrom and Muñoz-Franco (2005) suggested that "urban migration is selective of background characteristics that are also associated with modern contraceptive use" (p.284). Despite controlling for individual, household and community variables, living in an urban out-migrant community or having relatives in urban areas remained significantly related to modern contraceptive use (in which an urban out-migrant community is a community from which there is a significant number of migrations to urban areas) (Lindstrom and Muñoz-Franco, 2005). This suggests that controlling for migration could be important when looking at the determinants of contraceptive use.

Wealth is an important factor to consider in any analysis as it is highly correlated with education and socioeconomic status. With regard to modern contraceptive use Westoff (2012) found a general positive association between contraceptive use and wealth in West Africa. Similarly Woldemicael (2007) found that desired family size decreased with household wealth and employment.

The number of living children has an influence on contraceptive use and fertility desires (Westoff, 2012, Iyer and Weeks, 2010, Uchudi, 2001, Kollehlon, 1994). After controlling for various socioeconomic and demographic factors Addai (1999) reported that the number of living children remained a significant indicator of modern contraceptive use. Additionally Woldemicael (2007) stated that in Eritrea, as the number of living children increases the odds that a woman will desire more children decreases. The number of living children is related to the achievement of desired family size and these findings corroborate that as women have more living children they are closer to reaching their ideal family size. As women reach their ideal family size they will be more likely to desire to use contraception to limit their family to this size. This in turn is related to age, as older women are more likely to be closer to achieving their ideal family size.

The aim is to account for women who are exposed to the risk of conception. As all the women in this study are married they are all considered at risk of conception which is why this particular population have been chosen. However it is possible to explore the age at marriage as this indicates how long women have been exposed to this risk,

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assuming unmarried women are not at risk of conceiving. Cleland et al. (1994) found that the age at marriage played an important role in the fertility transition in Asia. A decrease in the median age at marriage has been linked with increases in fertility as exposure to the risk of childbearing increases with the number of years spent in a union. This was confirmed by Ezeh (1997) who established that in Kenya, age at first marriage was positively (p<0.001) related to having had a birth in the last five years; the more time spent in union the more likely they were to experience a birth in the last five years. Contrary to this Addai (1999) found that age at marriage did not significantly affect the odds of using contraception in Ghana. One of the problems with the age at marriage variable is that in the context of Africa marriage is not a single event before which one is not married and after which one is married (Cleland et al., 1994). It is a process involving many stages and this leads to a variable interpretation of the actual date or age at first marriage. This has meant that in the Demographic Health Survey age at first marriage is recorded as the date at which a women starts to live with her partner and is perceived to enter her first stable relationship, regardless if it has been formalised or not (Harwood-Lejeune, 2000).

In West Africa the level of polygamous households ranges from 30-50% and polygamy has been found to be related to contraceptive use (Iyer and Weeks, 2010). Kollehlon (1994) stated that in Liberia multi-union relationships lead to increased overall family size for men but that this was dispersed over the multiple wives and lead to decreased individual fertility for women. When examining sub-Saharan Africa Ezeh (1997) postulated that polygamy should be examined at the contextual level rather than the individual level because it describes a sociocultural setting rather than an individual characteristic. It was found that due to the greater values placed upon children and fertility in high polygamy societies women living in these communities were less likely to use contraception and more likely to have higher fertility desires.

"Ethnic identity is expected to determine fertility aspirations by shaping a woman's belief and value orientations"(Uchudi, 2001). Ethnicity has often been used to represent cultural attributes in fertility related research (Addai, 1999, Ezeh, 1997). Addai (1999) explored whether or not membership of a particular ethnic group (or

culture) reflected the socioeconomic differences between the different ethnic groups, in relation to contraceptive use. After accounting for socioeconomic differences the effect of ethnicity was no longer as evident and after introducing controls the only factors which significantly influenced modern contraceptive use in Ghana were region of residence and number of living children. Contrary to this Iyer and Weeks (2010) confirmed the importance of ethnic-level effects at the individual level when analysing the determinants of fertility. These opposing views suggest that ethnicity may be relevant in some settings and not others, or it could be due to the different models being used, as Addai (1999) did not account for household or cluster level variations.

Religion is another form of identification used to indicate group affiliation. Although Shapiro and Tambashe (1994) found that contraceptive use was higher among non-Catholics than Catholics and women with no religious affiliation were even less likely to practice any form of contraception, they found negligible differences among ethnic groups. Srikanthan and Reid (2008) highlight the importance of understanding the influence of religion on the willingness of couples to use contraception. When examining contraceptive use between 'spirit-type' or independent churches and other churches in rural Zimbabwe Gregson et al. (1999) found that contraceptive use was much lower in Marange Apostolic households than in the non-spirit type church households.

Westoff and Rodriguez (1995) found that as media exposure to family planning messages increased the ideal number of children decreased, suggesting that mass media can affect reproductive behaviour. They found that 50% of women exposed to television, print and radio messages were contraceptive users (Westoff and Rodriguez, 1995). When examining general media exposure in Nepal, Adhikari (2010) found that mass media had an important effect on reproductive behaviour, whereby women exposed to either radio or television were significantly more likely to have fewer children than those not exposed to any form of mass media. Interestingly Westoff (2012) explored this further and found that exposure to mass media in general had a positive effect on contraceptive use as well as specific family planning messages, in various West African countries and exposure to mass media was lowest amongst non-

users. Both studies controlled for wealth, as it was mentioned before this is an important factor and may also have an effect on the type of media a person is exposed too as well as an influence on contraceptive use.

Women exposed to family planning media messages are more likely to be practicing contraception and this likelihood rises with the number of media sources to which women are exposed (Gupta et al., 2003, Jato et al., 1999, Rogers et al., 1999, Westoff and Rodriguez, 1995). Valente et al. (1994) found that radio was an extremely efficient way of disseminating family planning information and motivating women to use family planning services. It was not only direct exposure to the programs but also the subsequent interpersonal communication that diffused information about family planning.

Interpersonal discussion between husband and wife with regard to family planning discussions has been widely investigated. In Ghana husband-wife discussions about family planning were associated with increased contraceptive use (Oheneba-Sakyi and Takyi, 1997). This positive relationship was also found in Ethiopia (Haile and Enqueselassie, 2006). Additionally Lasee and Becker (1997) found that in Kenya as frequency of husband-wife discussion on family planning increased so did contraceptive use. Hogan et al. (1999) found that "communication between husband and wife does not always predict birth limitation" (p.311), especially when considering religious affiliation in Ethiopia. Muslim respondents were found to favour birth spacing whereas Protestants displayed patterns of communication which led to fertility limitation.

Although the husbands' characteristics were not necessarily found to be significant with regards to education, occupation, etc. (Tawiah, 1997) when examining husbands' fertility desires and contraceptive acceptance there are some significant determinants of contraceptive use. For example contraceptive use was more likely when both the husband and wife wanted to stop childbearing than amongst couples who desired more children (Bankole and Singh, 1998).

There have been mixed results from studies looking at the influence of women's status on contraceptive use. In Togo women who chose their partner themselves, without

family advice had significantly increased odds of using modern contraception (Gage, 1995). In this case complete independence in choosing a husband was used as an indication of higher levels of autonomy for wives compared with those who had arranged marriages. In Tanzania women were found to have increased unmet need if their husbands believed that they should make decisions on behalf of their wives (Bhushan, 1997).

3.3   Background

"Contraceptive use in the region of west Africa is the lowest of any region worldwide" (Westoff, 2012, p.5). This analysis will look at contraceptive use in seven West African countries. These countries are; Burkina Faso, Ghana, Guinea, Mali, Nigeria, Senegal and Sierra Leone. They were chosen for their geographical proximity (Figure 3.1) and to provide a mix of Francophone and Anglophone countries. The difference between the TFRs in Anglophone and Francophone countries were represented graphically in Chapter 1. Additionally Cleland and Wilson (1987) noted that "in Francophone countries of West Africa, only a minority of women report an awareness of modern methods [of contraception]" (p.13). Here it is hoped to explore whether or not these countries are exposed to within group or across group similarities.

The notion of Francophony originated in the 1980s to identify populations or groups of people who speak French in their daily lives. It is not exclusively geographical or linguistic but extends to the cultural realm (Tétu, 1997). It has been suggested that perhaps it is not the fact of association with one administrative or colonial background but the evolution of cultural ties associated with these that affect the uptake of contraceptive use. For example Tétu (1997) postulates that in these countries the French language is constantly changing, that it is no longer the same in different countries and that this added variation may present additional barriers to information dissemination. Despite their unifying colonial history ethnic and linguistic diversity reaches across this region, making it "one of the most linguistically diverse areas in the world."(Nettle, 1996). This will be explored further in this paper, to see if colonial lineage or ethnicity are significant determinants of contraceptive use.

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Figure 3.1. Map of West African countries in this analysis
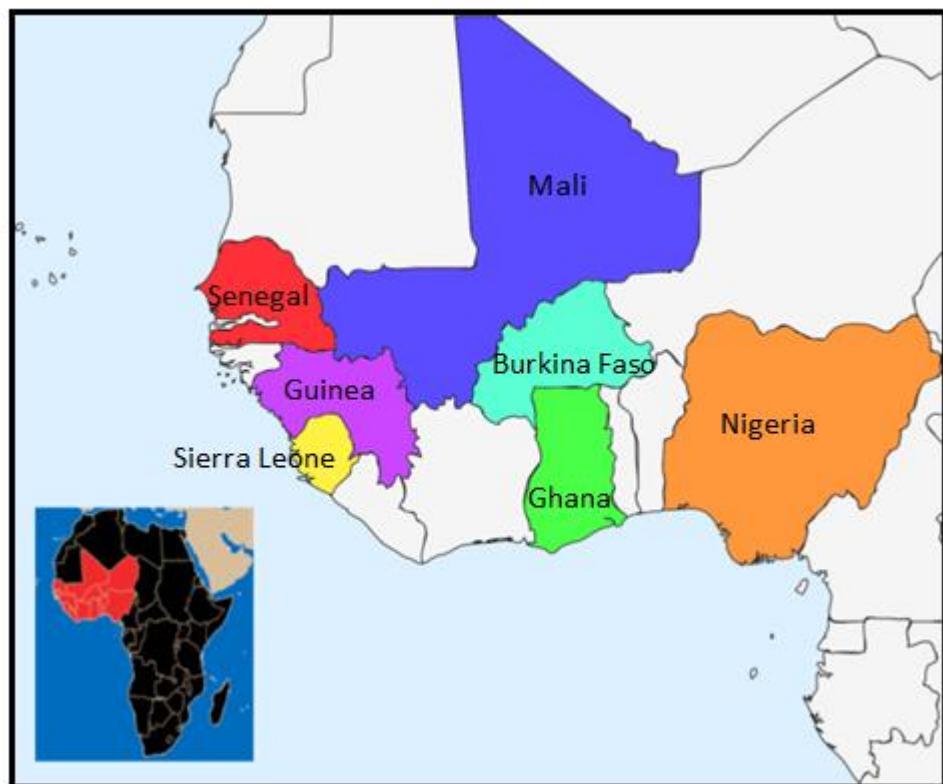
Source: www.alternatehistory.com

Senegal, Guinea, Burkina Faso and Mali all have French as their official language and are classified as the Francophone countries. The Anglophone countries are Nigeria, Ghana and Sierra Leone as they are united by the use of English as their shared national language. This will enable a double comparison and the questions asked are: 1. Do the sociocultural determinants of contraceptive use differ in Francophone and Anglophone countries and 2. Are there regional and community level variations in contraceptive use?

"Historically, family planning programs have been more prevalent in Anglophone than in Francophone sub-Saharan countries" (National Research Council, 1993, p.132). This is in part due to the negative effect exerted by a French law from the 1920s which prohibited the promotion of family planning, including the dissemination of contraceptive information and supplies. A reform of this law was prompted in 1994 after the International Conference on Population and Development (ICPD). All the

countries in this analysis have made amendments to this colonial law (Russell, 2008). One of the reasons for the slow uptake of contraceptive use in Francophone Africa may be the delayed implementation and negative associations of family planning. However it could also be due to sociocultural differences which have materialised from the different colonial backgrounds and this analysis will explore this further.

However, when examining sub-Saharan Africa (SSA) as a whole Ghana has not proved as successful as other countries such as Botswana and Kenya when considering the early support of family planning within the country (National Research Council, 1993). There remain wide variations in contraceptive use uptake within the different regions in Ghana. Bankole and Singh (1998) suggest that this may be due to variability in the acceptance of sociocultural norms which support large families. This analysis hopes to investigate if regional patterns in sociocultural determinants of contraceptive use transcend national borders, by examining neighbouring countries which may or may not have the same historical colonisation background.

3.3.1   Post-Cairo reproductive health policies

Maternal and child health was on the Ghanaian agenda since the 1920s and in the 1960s birth spacing was introduced in this context and in 1969 a population policy was formulated (Odoi-Agyarko, 2003). Following this, in 1970 and with limited success, Ghana established a National Family Planning Programme emphasising the belief that birth spacing was seen as a fundamental right for couples (Odoi-Agyarko, 2003). After the ICPD a National Population Council was formed to reposition family planning and fertility reduction through systemic integration in development planning and now Ghana's TFR is one of the lowest in sub-Saharan Africa (Obeng Gyimah et al., 2011).

Similarly population policies in Nigeria originated in 1988 from the principle that everyone has the right to determine family size and birth spacing (Martinez et al., 1998). In 2001 Nigeria produced a National Reproductive Health Policy document, among others to express its commitment to the PoA from the ICPD (Nwoso, 2001).

Senegal was Francophone Africa's first country to adopt a population policy, in 1988, (Hardee et al., 1999) however contraceptive use remained low. The concept of reproductive health presented at the ICPD was embraced and in response reproductive health was seen as an investment in the population. By 2001, Senegal had created a Division of Reproductive Health within the Department of Health and in 2005 a law was passed in order to protect individuals' rights to reproductive health and choice (Wade, 2005).

In 1991, in Mali the prohibition of providing family planning services was lifted leading to the inclusion of reproductive health in social development and health programs (Maiga et al., 2012). Mali was one of the first countries in Francophone West Africa to introduce a CBD program for contraceptive distribution between 1990 and 1999. Following the ICPD 1994 population and health policies were expanded beyond maternal and child health to encompass reproductive health and family planning (Viadro, 2000) and in 2002 a reproductive health law was passed. This law was designed to reinforce the PoA presented at the ICPD (Touré, 2002).

Burkina Faso first adopted a population policy in 1991. Post-Cairo this was revised to include reproductive health, focusing on improving the quality of life instead of population control (Viadro, 2000). As in Senegal, in 2005, a Reproductive Health Law was passed in Burkina Faso, which overturned the law from 1920 that banned family planning. Despite laws, policies and strategies creating a supportive political-legal environment for reproductive health and contraceptive use, Burkina's family planning remains weak (Maiga, 2012).

Family planning was initiated in Guinea following funding from the UNFPA to integrate family planning services with government health centres (McDavid, 2012). The ICPD led to increased support from external organisations to help Guinea integrate family planning services into the already established health system, yet social constraints remain and implementation documents for a Reproductive Health Law passed in 2000 have yet to materialise (McDavid, 2012).

Sierra Leone is a unique country in this study as between 1991 and 2002 it was engaged in civil war. In 2009 a National Health Sector Strategic Plan was created to

guide the efforts of the country to attain the Millennium Development Goals (MDGs), which includes the provision of family planning and reproductive health commodities, that relate to MDG number 5 (Koroma, 2009).

3.3.2 Country setting

Using data from the most current DHS surveys and GDP per capita information from the World Bank, Table 3.1 was created to provide an overview of the social economic and demographic settings of the seven countries examined in this paper. The variables included were guided by the MDG Indicators tables provided in each DHS report and also by factors which have been shown to affect contraceptive use differentials which were explored in section 3.2.

As would be expected, where net primary school attendance was lower so too was the percentage of women who completed secondary or higher education. Net primary school attendance was lowest in Mali and highest in Ghana. It is interesting to observe that low levels of primary school attendance did not always equate with low levels of contraceptive knowledge. For example contraceptive knowledge was under 80% for Mali, Nigeria and Sierra Leone, where primary school attendance was between 42.8 and 61.7%, whereas, in Burkina Faso and Guinea contraceptive knowledge was above 90% despite primary school attendance being under 45%. This indicates that in Burkina Faso and Guinea women are being exposed to family planning outside of the education system and despite having low levels of exposure to mass media.

Table 3.1. Overview of seven West African countries

	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
	2010	2008	2005	2006	2008	2010-11	2008
Primary School Net Attendance Rate (all children)	44.4	73.8	43.8	42.8	62.1	54.2	61.7
Highest educational level secondary or above	12.4	58.6	11.1	10.3	44.6	20.4	21.1
Housing has electricity (%)	13.1	60.5	20.2	16.6	50.3	56.5	12.1
Access to improved sanitation, urban (% population)	49.2	17.9	27.0	27.0	37.5	66.1	26.1
Access to improved sanitation, rural	16.1	8.1	11.0	6.4	28.1	30.0	6.6
Median age at first marriage (25-49 years)	17.8	19.8	16.2	16.6	18.3	19.3	17.0
Infant Mortality Rate (per 1000 children)	65.0	50.0	91.0	96.0	75.0	47.0	89.0
Percentage of births attended by skilled health personnel	67.1	58.7	38.0	49.0	38.9	65.1	42.4
Total Fertility Rate	6.0	4.0	5.7	6.6	5.7	5.0	5.1
Contraceptive knowledge (modern method, women in union)	97.5	97.8	92.6	75.0	67.0	92.5	66.2
Ever use of modern method (women in union)	20.0	50.3	16.7	19.3	23.7	-	18.6
Current use modern contraceptive (women in union)	15.0	16.6	5.7	6.9	9.7	12.1	6.7
Unmet need (all women)	23.8	35.3	21.2	31.2	20.2	29.4	27.6
Percentage of demand satisfied (all women)	37.2	40.0	30.0	20.9	41.9	31.2	22.9
Ideal number of children (women in union)	5.8	4.6	5.9	6.4	6.7	5.5	5.3
Ideal number of children (men in union)	7.0	5.3	8.8	8.4	8.5	8.5	6.4
No mass media exposure	48.1	16.7	51.1	24.6	38.5	20.3	52.3
GDP per capita (from World Bank in repective DHS year in USD)	652	1234	307	497	1376	999	453

Source: Most recent DHS for each country

Ghana has the highest percentage of women who have ever used contraception and also the highest current use of modern contraceptives. Yet it also has the highest amount of unmet need. Currently Ghana has the lowest ideal number of children desired by both men and women. Therefore ideals about family size are changing and both men and women are acknowledging they wish to have smaller families. The use of modern contraceptives reflects this, and the relatively high (compared to other countries) use of modern contraceptives has led to the large percentage of demand being satisfied, however there remains a proportion of women who desire smaller families but are not using contraception and account for the highest overall unmet need expressed by women in union. Ghana has a high GDP per capita and a low percentage of respondents who have no access to mass media, access to improved sanitation remains low in rural areas and is the lowest for urban areas out of all the countries. This is interesting because one measure of household asset indexes is the type of sanitation the household has access to and if despite having improved amenities such as electricity and televisions or radios, people in Ghana are not spending their income on improving their sanitary conditions.

On the other hand Nigeria has the highest percentage of demand for contraception satisfied but the lowest percentage of unmet need. This taken with the lower contraceptive knowledge and desire for larger families, and relatively high infant mortality rates suggests that for those who know about contraception, they are more able to use and access services, to satisfy their demand. However, overall unmet need is not very high as ideals about family size and the certainty of children surviving to adulthood remain to be addressed before the demand for contraception is increased.

When looking at the overall picture for Burkina Faso we see a country which, despite having a desire for large families, few houses with electricity and a high percentage of women who have no access to mass media, has high contraceptive knowledge and use as well as the highest number of births attended by skilled health personnel. This suggests that there is a focus on improving maternal and child health which is occurring outside of education and mass media exposure.

Guinea has the lowest GDP, educational attendance is low, the lowest median age of marriage, the lowest current modern contraceptive use and low unmet need. This, alongside the knowledge that men in Guinea have the largest average ideal family size of all the seven countries may be indicative of a country in pre-transition (explored in section 2.3), where improvements need to be made in all aspects of life; economic, social and healthcare, before the high levels of contraceptive knowledge are translated into behaviours indicative of fertility regulation.

Mali may also be in this pre-transition phase, characterised by high fertility and little indication of desire for fertility regulation. Ever-use of contraceptives is under 20% for both Guinea and Mali. This is an interesting indicator to examine as due to the high fertility rates and desires for large families in West Africa many women may not be using contraception because they are trying to get pregnant, being pregnant or as a result of post-partum amenorrhea. The low current contraceptive use and low ever use shows little intent for fertility regulation.

Senegal has elevated levels of contraceptive use (relative to the other study countries) and high levels of unmet need but also satisfied unmet need, coupled with a comparatively low TFR suggesting that it may have entered the third stage of transition, where fertility levels decrease as contraception is being used to regulate fertility. Although the ideal family size in Senegal remains high, it has the lowest IMR and also performs well in all the other indicators, therefore if family size ideals start to align more with the actual fertility rates then Senegal may see even more contraceptive use.

Sierra Leone appears to still be in the second stage of the transition, as unmet need is high and the demand which is satisfied is low compared to the other countries. Here ideals about family size have been adopted, and are reflected in a TFR of 5.1, however infant mortality remains high and the economic setting of Sierra Leone is reflected in the second lowest GDP. Current contraceptive use is one of the lowest in this country, it has the highest percentage (over 50%) of women with no exposure to mass media and the lowest contraceptive knowledge. As contraceptive knowledge increases more women may begin to adopt family planning in order to attain their desired family size.

3.4   Methods

This section will discuss the datasets and specific populations used for analysis in this paper. The variables used will also be explored here. The analysis section introduces the different methods used which are: bivariate analysis, logistic regression and multilevel modelling. It was deemed necessary to do a bivariate analysis to establish if assumptions presented in the literature review were true in this region. Therefore where possible the sociocultural determinants of fertility presented in Chapter 2.6 were operationalised and where necessary proxy variables were explored. Throughout the process some variables were excluded as they were not significant but the final models included at least one variable from the three different sociocultural categories Values, Identity and Communication which are explored further in this Section.

Firstly logistic regression was used because the outcome variable of modern contraceptive use and non-use is a dichotomous dependent variable (Pampel, 2000). As it is hypothesized that there are community and regional influences on contraceptive use, multilevel modelling was used to identify if any effects exist at these different levels. These models will be explained in greater depth in the analysis section (3.5).

The dependent variable is binary, representative of whether or not a woman was using a modern contraceptive method at the time of the survey. The two-level random intercept model is expressed as:

$$\text{logit}(\pi_{ij}) = \beta_{0j} + \beta_1 x_{1ij} + \cdots + \beta_n x_{nij}$$

where:

$$\beta_{0j} = \beta_0 + u_{0j}$$

$$[u_{oj}] \sim N(0, \Omega_u) : \ \Omega_u = [\sigma_{u0}^2]$$

In this instance u_{oj} refers to the random error component for the PSU level, which is assumed to be normally distributed with a mean of 0 and variance σ_{u0}^2. The three-level random intercept model is a simple extension of this.

3.4.1   Data

This paper uses Demographic Health Survey (DHS) data from seven West African countries (Burkina Faso, 2010; Ghana, 2008; Guinea, 2005; Mali, 2006; Nigeria, 2008; Senegal, 2010-11; Sierra Leone, 2008 accessible at www.dhsprogram.com). These particular surveys were used as they had been conducted using either the standard DHS questionnaires from Phase V or VI. Previously (in DHS Phases I-IV) datasets were created by combining information from two questionnaires. Whereas, from Phase V onwards only one core questionnaire was used meaning that the questions asked across these later phases are more comparable. The questionnaires included information on family planning and contraceptive use as well as individual characteristics of respondents. Although there have been more recent surveys conducted for some of these countries the data were not available for analysis at the commencement of this study.

The DHS uses a stratified two-stage cluster design to collect nationally representative demographic data on levels of fertility and trends, family planning and other proximate determinants of fertility, fertility preferences as well as information on reproductive health and women's health in general.

3.4.2   Participants

Eligible persons for the individual questionnaire were women aged 15-49 years in the sampled household. This paper is interested in women who are at risk of pregnancy and the sociocultural determinants of contraceptive use, so the population used for analysis was restricted to married women "as most childbearing occurs within unions" (Uchudi 2001) and this is the case in the study countries as seen in Figure 3.2. Additionally Cleland et al. (2011) highlighted that single women have contraceptive use

trends which are different from those of married women. They found that when the sample was restricted to ever-married women the effects of female schooling were lower (Cleland et al., 2011), however this was not the case with these datasets as education remained highly significant in the initial binary investigation.

Figure 3.2. Percentage of non-marital and in-union births
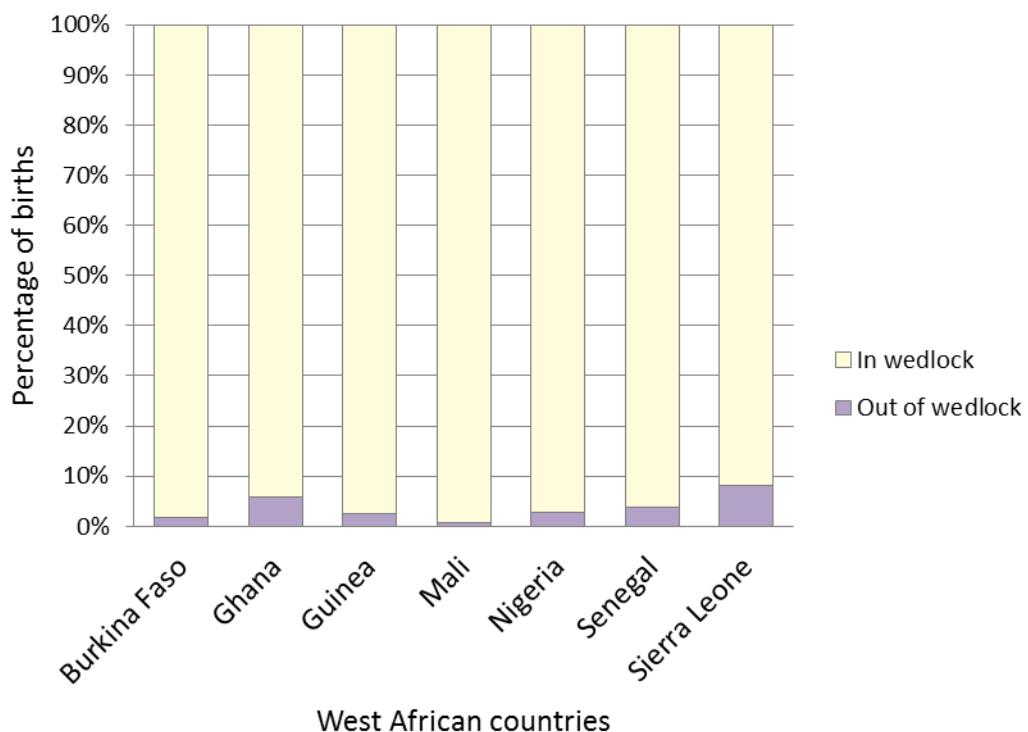
Source: Demographic Health Survey (most recent survey)

Additional restrictions were made to the base population for analysis in this paper (Figure 3.3). Following the example of Cleland et al. (2011) these women, identified as not at risk of conception were also excluded from the analysis:

- currently pregnant women;
- post-partum amenorrheic women (PPA) – identified using birth history and time since last period as well as including those who self-declared PPA;

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- infecund women – women identified as being menopausal or never having a
  period through self-declaration and time since last period: women who had
  undergone hysterectomy were also excluded as part of this category.

Figure 3.3. Flow diagram for Mali to show how the exclusion process affects the
sample size
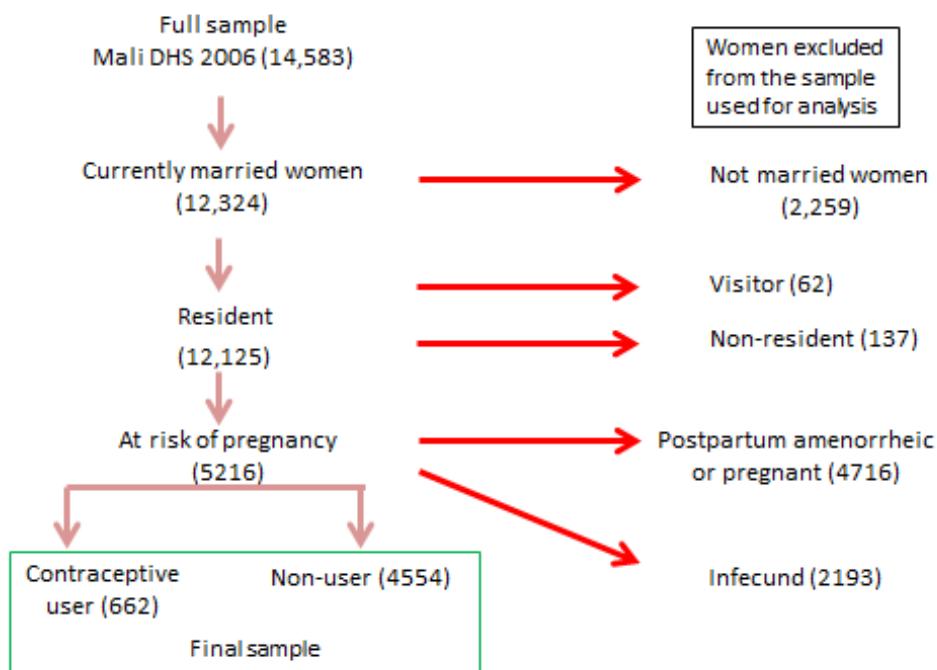
N.B. unweighted figures

Non-resident women were excluded because they may have different contextual
experiences and exposures than resident women, and thus be influenced by different
social and cultural determinants. As can be seen in Figure 3.3 there is a large
proportion of women who have been excluded due to their classification as either
being pregnant or postpartum amenorrheic. It is acknowledged that postpartum
amenorrheic women may be at risk of conception and could therefore have an unmet
need for contraception. However it was felt that these women may be subjected to
too many varying factors to be included with women who were not in this group. For

example women's desire to use contraception at this stage will be related to how long she intends to breastfeed, how the birth went, etc.

The contraceptive prevalence rate (CPR) in Figure 3.4 has been calculated twice. The darker bars show the CPR when the base population is all women married or in union, which is often used in demographic research. The lighter bars depict the CPR for the study population in the paper (taking into account all the exclusions mentioned above). Although the CPR is higher in the population used for analysis in this paper the relative difference across the countries only changes slightly. The range between the highest and lowest CPRs increases by only 6.7 percentage points in the study population.

Figure 3.4. Modern contraceptive prevalence rate with different base populations

Key: Official DHS figures = darker bars
Study population = lighter bars

Source: Demographic and Health Survey (most recent survey)
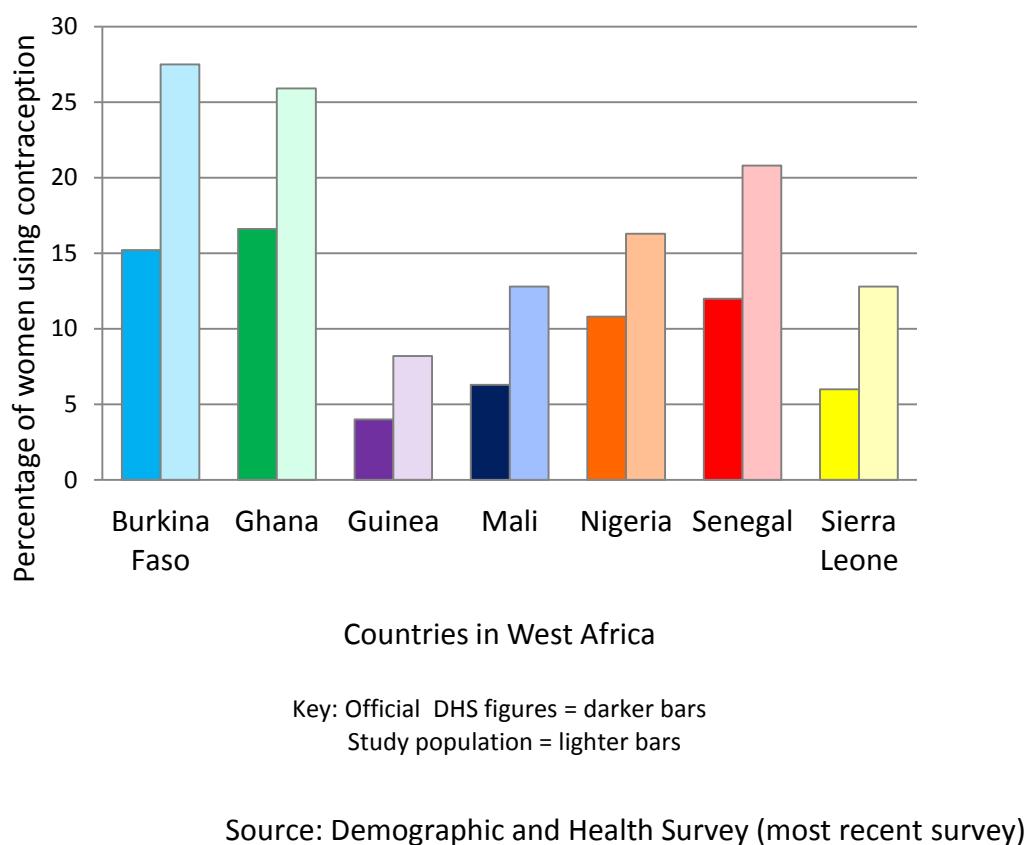
The software package STATA version SE11 (StataCorp. LP, College Station, United States of America) was used to undertake all the analysis discussed in this paper. Table 3.2 gives a general overview of the participants included in the study. The mean age of respondents from all countries was about 30 years and the mean level of education ranged between four and five years for all countries. Burkina Faso had the largest proportion of respondents who used modern contraception and Guinea had the smallest. Islam and Christianity were the main religions across the seven countries. The vast majority of respondents lived in rural areas.

Table 3.2. General characteristics of the study populations

	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
Mean age (years)	30.0	32.0	30.0	29.0	31.0	29.0	30.0
Mean number of years in education	4.0	4.0	4.0	5.0	5.0	4.0	4.0
Population living in rural areas (%)	68.0	58.0	70.0	61.0	67.0	62.0	59.0
Current modern contraceptive use (%)	27.5	25.9	8.2	12.8	16.3	20.8	12.8
Main religion (%)	Islam (62%)	Christian (73%)	Islam (89%)	Islam (92%)	Christian (49%)	Islam (96%)	Islam (75%)

3.4.3 Operationalising variables

3.4.3.1 Dependent variable: modern contraceptive use

The DHS defines modern methods of contraception as the pill, IUD, injection, diaphragm, condom (male and female), sterilization (male and female), implant, foam, jelly and lactational amenorrhea. Periodic abstinence, withdrawal, abstinence and the rhythm method are classified as traditional methods of contraception. Folkloric methods vary by country and only the 'collier' was registered as a specified folkloric method in one of the datasets (Burkina Faso). Users of traditional and folkloric methods were classified as non-users of modern contraception for the purpose of this

study. It was felt that the use of modern methods necessitates users to overcome different obstacles compared to other forms of protection i.e. natural or traditional.

It is interesting to explore the modern contraceptive method mix for different countries (Table 3.3) as it becomes clear that across the countries some favour certain methods over others. For example the pill and the injection appear to be the most commonly used methods across all seven countries. However in Burkina Faso nearly a quarter of contraceptive users use the implant, the greatest of all seven countries by far. Dr Norbert Coulibaly, from the UNFPA, believes that it is the long acting prevention provided by the injection which makes it a desirable in this context (Katabo, 2013).

Table 3.3. Modern contraceptive method mix by country (% of modern contraceptive users, women in union)

	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
Female sterilisation	0.7	8.0	4.1	2.7	4.0	2.0	0.0
Male sterilisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pill	24.7	30.7	40.7	50.5	21.3	34.6	44.1
IUD	1.7	1.5	3.0	1.6	12.3	4.2	3.7
Injectables	39.3	39.6	27.6	35.3	33.8	43.3	43.1
Diaphragm	0.0	0.2	0.0	0.3	0.1	0.0	0.0
Male condom	9.4	14.0	24.6	7.1	27.8	6.3	9.2
Female condom	0.0	0.2	0.0	0.4	0.2	0.1	0.0
Implant	24.1	4.8	0.0	1.6	0.6	9.1	0.0
Foam or jelly	0.1	1.0	0.0	0.4	0.1	0.0	0.0
Other modern method	0.0	0.0	0.0	0.0	0.0	0.5	0.0

The DHS (MEASURE DHS, 2012) includes the lactational amenorrhea method (LAM) as a modern method of contraception, yet it is a natural method as it is linked to the continued amenorrhea experienced by women who breast feed. Breastfeeding can be used intentionally or unintentionally to regulate post-partum fertility after birth. The debate as to whether LAM should be classified as a natural method or a modern method of contraception does not need to be taken further as women experiencing PPA have already been excluded from the base population in this analysis.

Despite the exclusion of postpartum amenorrheic (PPA) women some women reported the use of LAM as their form of contraception. These women were identified

as PPA through their responses to other questions such as time since last birth and time since last period. The discrepancy could have occurred if respondents were not using the method correctly and their periods may have returned. Or they may not have recently been pregnant but were still be using LAM which may not have been picked up by the population selection criteria. These women were classified as non-users as they are acting as women who are PPA even if they may not have been classified as medically PPA. Similarly if respondents were using any form of natural family planning such as the rhythm methods or withdrawal they were classified as non-users. These women were not excluded as it was felt that they possessed a need or the potential need for contraceptive use and so are prospective users of modern contraception.

A binary variable was created to indicate modern contraceptive use (coded 1) or non-use (coded 0). In this instance modern contraceptives were defined as hormonal, barrier or permanent methods of contraception which allow women to space or limit their births. Only women using modern contraception at the time of the survey were considered contraceptive users.

3.4.3.2   **Control variables**

Variables which have been shown to be related to contraceptive use were included as control variables in the analysis. It is customary to control for age in analysis related to contraceptive use as the latter tends to be low amongst younger women, to increase with age and subsequent parity and then to decrease again towards later age and menopause. To account for the non-linearity between contraceptive use and age an age squared variable was also included in the analysis. A continuous variable for current age at the time of the survey was used; denoting age in completed years and was calculated using the date of the interview and the respondent's reported date of birth. The mean age of respondents for all seven countries ranged from 28.6 (Mali) to 32.5 (Ghana), hence age was centred on 30 years, to aid interpretation.

The variable for highest level of education attended was used in this analysis. It is a country-specific variable constructed to best reflect educational levels present in each country, even if educational systems do not naturally follow such a clear progression (MEASURE DHS, 2012). As the proportion of women in the "higher" education category

was rather low in some countries, three categories were created (from the four prescribed by the DHS): 1. no education, 2. primary education, 3. secondary and 4. higher education. Residence was a simple dichotomous variable denoting either urban or rural residence, created from the DHS variable for de facto type place of residence.

The DHS datasets contain a wealth index variable in both continuous and quintile form. This is created independently for each country and is a measure of relative wealth within each country and comparability across countries is questionable. Subsequently for the individual models the wealth index quintile variable provided by the DHS was used. However, in order to address the issue of comparability when creating the combined country dataset used for the multilevel analysis an asset index was created specifically for all the seven study countries together. Once the data for all countries was combined a Principal Component Analysis (PCA) was carried out using eleven different variables (source of drinking water, type of toilet, main floor material and possession of a radio, television, fridge, phone, electricity, bike, motorcycle and/or car). PCA was used in order to condense the eleven variables into different components which represent the relationships between each of the eleven variables, from these, one component representative of assets was chosen. This is similar to the process undertaken when creating the individual country wealth index for the DHS (Rutstein and Johnson, 2004).

Using dummy variables the PCA command in STATA resulted in the generation of "components" that accounted for variance in the data. All the eigenvalues produced were positive which indicated that the PCA was successful (without errors) (Kline, 1994). It was felt that the first principal component (Abeyasekera, 2005) also known as a "general factor" (Kline, 1994) best represented assets and it was not necessary to combine it with any of the other values. This conclusion was drawn as women with more positive assets had higher PCA scores when looking at the general factor, and thus this component was a reasonable measure of the "household assets". Similarly the DHS uses the first of the factors produced by PCA to represent the wealth index (Rutstein and Johnson, 2004). The first component explained 28% of the variance in

the data. The output was stored and used throughout the entire modelling process of the grouped dataset.

Table 3.4. Weighted asset index across countries

	Asset Index (quintiles)					
	Poorest	Poorer	Middle	Richer	Richest	Total
Burkina	21.7	25.0	27.3	13.1	12.9	6275
Ghana	4.2	7.7	24.3	32.2	31.6	1595
Guinea	38.4	16.9	19.4	13.4	11.9	2492
Mali	26.0	26.0	13.5	22.1	12.4	5174
Nigeria	13.3	14.8	19.0	23.6	29.4	9774
Senegal	8.3	12.5	12.1	21.0	46.2	4919
Sierra Leone	30.6	22.8	24.0	14.8	7.8	2227

Table 3.4 shows how the weighted asset index was divided across the seven countries. Senegal has the highest proportion of respondents falling into the 'richest' category relative to the other countries and Guinea has the greatest number of respondents in the 'poorest' category. In Guinea, Mali and Sierra Leone the populations are skewed towards the poorer end of the asset index, with over 50% of respondents falling into the poorer and poorest categories. Sierra Leone had the fewest respondents in the richest category, showing that assets are spread differently across countries. It is necessary to highlight that this index is a measure of household assets and not actual income. This must be stated in order to explain the large number of respondents falling into the 'richest' category in Senegal. Which is not explained by the GDP presented in (Table 3.1), this is because income and assets do not measure the same components. Senegal has a large percentage of urban and rural population with access to improved sanitation. This is a direct component measured within the asset index and may contribute to Senegal's perceived 'richness' as measured by the assets present in respondent households.

Ghana has some of the lowest levels of improved sanitation yet has two-thirds of respondents within these two "rich" categories. This may highlight the influence of

electricity when calculating the asset index. Ghana has the highest percentage of people with access to electricity and Senegal the second highest percentage. Although this variable was included in the asset index score it may also relate to the possession of a fridge, phone, radio and television and therefore having more households with access to electricity could lead to higher levels of possession of these electrical goods and therefore lead to higher than expected levels of "richness" than if one was solely examining economic levels.

This exploration of the bias towards countries with high levels of households with electricity is also reflected by the other countries in Table 3.4. Burkina Faso, Guinea, Mali and Sierra Leone all have low levels of population with access to electricity and the highest proportion of respondents which fall within the "poor" asset categories. It does not mean that the asset index should be discounted, rather it highlights the importance of improved infrastructure in the acquisition of assets.

Figure 3.5. Asset index variation
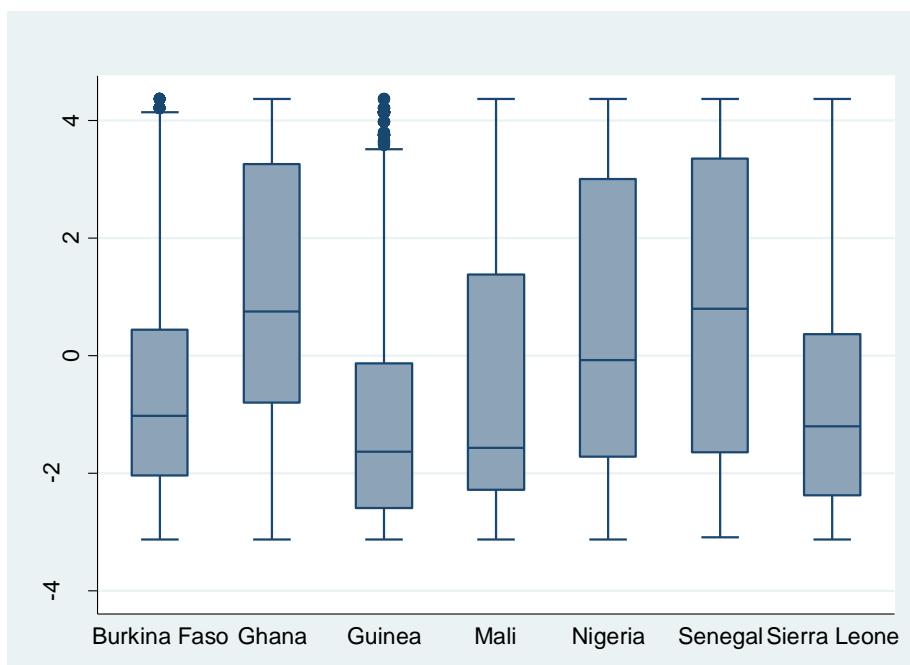
When examining Figure 3.5 we can see that there is variation between the median asset index for each of the countries, ranging between -2 and +2. Burkina Faso and Guinea both recorded outliers in the higher quadrant and the variation was greatest for those with an asset index in the top 50%. The upper quintiles for Ghana, Nigeria and Senegal were similar, which can also be seen in Figure 3.5.

3.4.3.3 Independent variables

These variables were chosen as they are considered potentially significant sociocultural determinants of contraceptive use, for theoretical reasons and were guided by the availability of variables in the datasets. It was necessary to identify the measurable aspects of sociocultural characteristics and Figure 3.6 illustrates the conceptual framework presented in Chapter 2, which contextualises certain sociocultural factors.

Figure 3.6. Conceptual framework of sociocultural determinants of contraceptive use
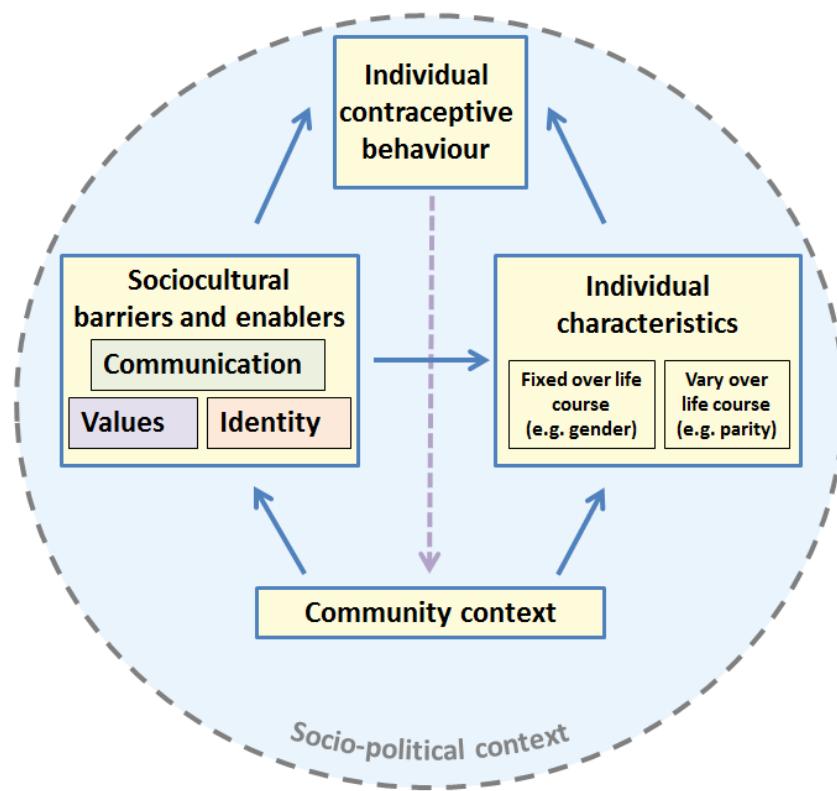
The sociocultural variables identified by other studies, discussed in Chapter 2, were used to operationalise these variables into the three sociocultural categories presented in Figure 3.6. The responses are collated in Table 3.5 and their practicality of use will be discussed in this section.

Table 3.5. Exploring which variables can be used to operationalize the conceptual framework

Values (internalised beliefs)	Identity (measurable associations)	Communication (exposure to new ideas)
Desire for more children (wife and husband)	Ethnicity	Childhood place of residence
Ideal number of children/family size	Dialect/language of questionnaire	Number of trips in the last 12 months
Ideal number of boys/girls	Religion	Discuss family planning (with partner of family planning worker)
	Final say (healthcare, purchases, visits, cooking)	Exposure to media (family planning and general)
	Can refuse sex	
	Can ask partner to use a condom	
	Attitdues towards wife beating	
	Polygamy	

Values are considered individualistic factors which are self-reported and which may be affected by external influences but may not necessarily be verified. There are not many variables presented in the DHS which could help us to understand values, as something as internalised as this is better explored through qualitative research where thoughts and reasoning may be explored in greater depth. However there are a few questions relating to family size as well as the aspiration to continue growing a family which are explored here.

Whether or not a woman desires more children, and whether she believes her husband's desires reflect her own may only be stated by the individual. With regard to the perception of husband's fertility desires the question was phrased in a way that

the respondent would need to state whether or not she believed that she and her husband wanted the same number of children or if she felt he desired more or fewer children than herself. This question was only asked to women in relationships where neither partner had undergone sterilization and resulted in a smaller total sample population for this specific question but as the numbers of sterilizations were not large the changes were slight. Only one country (Burkina Faso) registered women who did not know their desire for more children and as only five people used this response they were coded as undecided.

Similarly only an individual can know his or her ideal number of children or the gender divisions he or she wishes to have. When considering the desire for more children one of the possible responses is "non-numerical". This is because sometimes women respond with answers such as "[it is] up to God", "as many as possible" or "husband's wishes" etc. (Olaleye, 1993). Research has shown that this response is less used in recent surveys and that being literate increases the likelihood of providing a numerical answer (Bachan and Frye, 2013).

Identity relates to quantifiable entities such as religion and ethnicity. Ethnicity is an attribute which one is born with and although religious affiliations may change it is possible to verify if someone does associate with a particular religion or not. The dialect and language of a questionnaire can also shed light on another form of group identification which can also be measured or checked.

Female autonomy is related to gender roles and these are also ascribed by society. In this case it is suggested that female autonomy may be measured by the ability to refuse sex or to ask a partner to use a condom. After consideration, the ability to ask a partner to use a condom was not used as it was felt that this variable may be a proxy for multiple factors rather than solely female autonomy. For example it may also reflect the ability of couples to communicate or individual values about condom use and assumes knowledge of condoms. Similarly wife beating was also not used as if women agreed with wife beating, the implications of this are not clear. For example the question asks if women agree with wife beating under different circumstances. It does not ask whether or not wife beating is actually occurring. Although acceptance

may be indicative of the lower status of women it does not establish if women are subjected to beatings. In previous studies acceptance of wife beating has been used in conjunction with other variables to explore women's autonomy. It was not found to be significant when controlling for other factors relating to contraceptive use in Ethiopia (Wado, 2013) or Eritrea (Woldemicael, 2007). The question is also predisposed to placing women in the role of the beaten which for the purpose of exploring sociocultural barriers could be misleading.

The response for "respondent can refuse sex" was transformed into a dichotomous variable. Respondents who answered "don't know" were grouped with respondents who answered "no". It was supposed that if a woman does not have the conviction to think she could discuss such a sensitive topic with her husband, this suggests that she has not discussed it hitherto and is unlikely to discuss it in the future. The use of this variable alone to explore empowerment or autonomy has been criticised by Upadhyay and Karasek (2012) for the fact that this encompasses only one facet of such a dynamic and variable term. Additionally they felt that to ask women who had not had sex this question meant it may not always be applicable. However in this context as the women are all married it is assumed that they will have been exposed to sexual encounters.

In light of this it was decided to explore the final say on own healthcare, large household purchases and visiting relatives as additional measures of females' relative power within relationships (Klomegah, 2006). Unfortunately there was a high amount of missing data for the final say on various decisions so this variable could not be used as a straightforward proxy. Instead PCA was used to create a "final say" index. Here two components were retained. The first component was greatest when the final say on healthcare, large household purchases and visiting relatives was had by the husband. Whereas when the respondent had the final say the other component was largest.

In total across the seven countries 49 different ethnicities were recorded, which were grouped into 34 different categories. Table 3.6 shows the percentage of respondents in each ethnic group who are using contraception. Sierra Leone originally had eight

defined ethnicities. The Kriole were placed with the Sherbro into a South-west Sierra Leone ethnic group. Both these ethnicities are predominantly found in this region and they share similar cultural traits, being the Sierra Leonean ethnicities most exposed to Western culture and ideals (Taylor and Bankole Kamara, 2011). The Temne, Limba and Loko were also grouped together into a North Sierra Leone ethnic group as they are politically and culturally similar (Ministry of Tourism and Cultural Affairs, 2014). Although the Loko were originally part of the Mende ethnic group, it was felt that their cultural links to the Northern tribes of the Limba and Temne were what this research is interested in and so they were grouped together. The Kono in Sierra Leone were originally from the Kissi tribe (Ministry of Tourism and Cultural Affairs, 2014), which is identified in Guinea, so they were given the same name and grouped together for this analysis. The Mandingo people originate from Guinea but were also identified in Sierra Leone, Mali and Senegal.

Ghana also had eight specified ethnicities, these were largely tribal clusters such as the Akan and Ewe however smaller tribes were also named. It was decided to keep these ethnicities separate as they compared closely with ethnicities in other countries. The Dagara, from Burkina Faso, are originally from the Mole-Dagbani ethnicity group and the Lobi, also from Burkina Faso, are part of the same clan as the Dagara people. So it was decided to group these three ethnicities together. The Mande ethnicity identified in Ghana was placed into the "other" category as it is a broad ethnic classification but had few respondents, meaning that respondents placed here may have come from many different tribes within this category. The Guan ethnicity was kept separate as they originate from the Mossi region in Burkina Faso (GhanaWeb, 2013) and it would enable a comparison with the Mossi ethnicity, named in the Burkina Faso DHS.

Similarly the Grussi and Gurma were identified both in Ghana and Burkina Faso and interestingly have the same levels of contraceptive use. Although the Mole-Dagbani, the Grussi and the Gurma are all from the Gur speaking tribe it was decided to keep them separate to see if there are cross-national similarities between those that share the same immediate ethnic identification.

Table 3.6. Percentage of each ethnicity who are contraceptive users

Ethnicity	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
Akan		25.7					
Bambara				15.2			
Bissa	29.8						
Bobo	44.7			11.4			
Diola						27.1	
Dioula	34.4						
Dogon				9.8			
Ewe		32.2					
Ga-Adangbe		31.1					
Grussi	24.7	33.6					
Guerzé			7.4				
Gurma	20.7	20.7					
Hausa					2.5		
Igbo					21.8		
Kissi			14.3				11.5
Malinké/Mandingo			9.5	15.5		17.4	17.9
Mende							12.2
Mole-dagbani/Dagara/Lobi	22.2	21.6					
Mossi	28.1	18.6					
North Sierra Leone							12.9
Peulh	16.0		5.6	12.3		17.5	
Sarkolé/Soninké/Marka				11.2		15.6	
Sénoufo/Minianka	39.5			15.9			
Serer						23.8	
Sonrai				8.8			
Soussou			9.2				
South-east Nigeria					19.9		
South-west Sierra Leone							27.8
Tiv					22.6		
Toma			10.3				
Tuareg	3.9			9.1			
Wolof						21.3	
Yourba					30.7		
Other	30.4	24.1	15.7	9.4	16.6	25.3	10.1
Total	27.5	25.9	8.2	12.8	16.3	20.8	12.8

N.B. Ethnicities common to multiple countries are highlighted in light blue

In Guinea, three ethnicities were already identified in other countries; the Soussou, Toma and Guerzé. These remained separate as there were no similar ethnicities either within Guinea or in any of the other countries. This was also the case for Senegal and Mali, where either the ethnicities were named in other countries or stayed separately grouped for analysis.

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There was additional grouping undertaken in Nigeria, whereby the Ekoi, Ibibo and Izon who were prominent in South-east Nigeria were placed into a group with this title. Not only were they predominantly found in this regional cluster but they were also from related origins (Ankrah, 2013). Additionally the Hausa and Fulani were grouped together. Although the Fulani are part of the Peulh ethnic group those living in Nigeria have a close link with the Hausa, this relationship extends so far that they are often referred to as the Hausa-Fulani people (Levinson, 1998).

The Poular/Peulh/Peul ethnicity was common to Burkina Faso, Guinea, Mali and Senegal. Senegal and Mali both also had respondents who were part of the Soninke ethnic group. Guinea, Mali and Sierra Leone shared an additional common ethnicity; the Malinké. The Bobo, Sénoufo and Tuareg ethnicities were named in both Mali and Burkina Faso.

The religion variable varied across the countries, as for some countries Christianity was split into various denominations. Hogan et al. (1999) found that Protestants and Orthodox Christians in Ethiopia did not differ in their contraceptive use trends. It was decided to group the religions into three main categories, where possible comprising Muslims, Christians and others. This meant that respondents with no religion, a different religion or affiliated with a traditional religion were all grouped together. For Sierra Leone or Senegal, there were not enough respondents even in this grouped "other" category and so Christians were also placed in the "other" category for these two countries.

Polygamy was also represented by a binary variable denoting woman who had a co-wife and those who did not. Women who stated that they did not know if their husbands had another wife or not were coded '0' as the sole wife. There were not many women in this category and it was felt that women living in openly polygamous relationships would behave differently from those who knew about or acknowledged the other wives, and it was the behaviour of the latter group of women which was hoped to be captured by this variable.

Communication variables relate to ways in which ideas can be communicated either directly between individuals or through indirect methods such as mass media and

family planning media messages. The childhood place of residence could have been used to establish if there was a difference between where a respondent grew up and where she currently lives, to see if any form of migration has occurred. However this variable was not available for all the datasets and so could be explored no further.

Various aspects of Communication are examined in this analysis. Both general media exposure and specific family planning exposure were examined separately. There have been mixed results in previous research as to the extent to which these two variables are determinants of contraceptive use and it was felt necessary to explore them both separately. Although in general women with greater exposure to general media also had more exposure to specific family planning messages it was felt that just looking at one form of media may eliminate possible differences between specific family planning messages and general exposure to mass media.

The exposure to media variable and exposure to family planning media messages were both composite variables, where several variables were combined to represent overall exposure (Kiecolt and Nathan, 1985). Exposure to media was calculated according to whether or not respondents had access to the radio, a television, neither or both. Adhikari (2010) found that exposure to the radio and television were considered routes of access to health information, and it was found to be a strong predictor that affected fertility in Nepal. Access to media was also a variable used by Adetunji (2000) looking at condom use in Zimbabwe in this paper it was found not to be a significant determinant of contraceptive use at the 5% level.

As family planning campaigns were specific to each country it was decided to focus on whether women had been exposed to family planning messages via media, rather than how the messages had been disseminated, to enable cross-country comparison. Family planning messages were disseminated through the radio, television and newspapers or magazines. Exposure to only one medium was classified as low and then high exposure was attributed to women who encountered family planning messages through all three types of media. For both variables women with missing answers to any of the elements were coded as having no exposure to the respective categories.

Migration was investigated through the "number of trips in the last 12 months which resulted in sleeping outside the home community" variable. It was hoped to include an additional variable which looked at where a respondent grew up and how that area compared to their current residence in terms of urban/rural location. Akam (2005) found that living in a city since childhood greatly increased the chances of contraceptive use and that women who were socialized outside of large urban areas had fewer resource links to contraceptive use than those who had lived there since birth. However it was not possible to examine this as childhood place of residence was not a variable in all of the countries explored here.

It was felt that women who had taken multiple trips outside of the community may have encountered and been exposed to new ideas which women who had not left the community may not have been exposed to. Trips away from the home could be made to visit family, or related to work (which may reveal a respondent's values in relation to her family or they could be an indication of increased worldliness). Unfortunately there is no explanation as to why these trips may have been undertaken from the survey data and so any inference beyond that these trips may provide exposure to more people and new ideas, cannot be made. Number of trips was a categorical variable recording no trips, one trip and two or more trips.

The variable which examined the discussion of family planning was a compound variable created from three DHS questions. The final variable had three categories: (1) women who had never discussed family planning (2) women who had discussed with one source and (3) women who had discussed with two or more sources. Originally it was hoped to have a variable which measured the frequency of discussions or the number of different sources of discussion. However, as the questions asked and responses recorded were not consistent across countries it was not possible to create a more specific variable recording the sources of family planning discussions. Research has shown that individuals tend to make decisions not in isolation but within a social context and in relation to interactions with one another; in Kenya males were found to be more likely to be influenced by their network partners (Behrman et al., 2002) with regard to contraceptive decision making. It was suggested that this might be due to

men having known their networks since childhood, unlike women who, due to the marriage system were newcomers into their husbands' communities. It is hoped that due to this the definition of sources is not as important as the general exposure to different avenues of family planning discussion.

The first component of this compound variable was whether or not a respondent had discussed family planning with her partner. For countries with a "discussed family planning with partner" variable respondents who stated they did not know whether or not they had discussed family planning with their partner were coded as "no" as it was felt that if they had had a discussion about this sensitive topic they would know.

For Senegal there was no variable which referred directly to discussing contraceptive use with a woman's husband so a proxy was created and women who answered that the decision maker for contraceptive use was either mainly their husband or partner or that it was a joint decision were coded as discussing with their husband. In addition, when women said their reason for discontinuing contraceptive use was their husband's disapproval it was decided they must have had some kind of discussion about family with their husbands. A similar problem arose for Ghana and Nigeria, whereby the "discuss family planning with husband" variable was also not part of the survey. Instead the variable denoting whether the woman's husband knows she is using contraception was used, also based on the assumption that if the husband knows at least some discussion must have happened. However for these countries only contraceptive users were asked this question. Therefore women who did not use contraception were automatically coded as not discussing with husband, and there was no way of verifying if a discussion had occurred with non-users and their partners or not. Although this will cause some bias towards increased non-discussion amongst non-users it is hoped that the amalgamation of different sources of discussion may counteract this.

The two other components of this variable were whether or not a respondent had been visited by a family planning worker (assuming that they would have discussed family planning with this visitor) and if they had discussed family planning at a health facility. Due to the large variations in reliability of the "discuss family planning with

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husband" variables it was felt that despite three sources of discussion being used to create the variable a separate category should not be made for discussions with all three sources, so as not to exclude women from any category who were not asked relevant questions due to being non-users.

3.4.3.4 **Contextual variables**

The contextual variables were aggregated from individual-level variables, using the primary sampling unit (PSU) level as a proxy for "community". Given the data the PSU is the only measure available to explore community level variation. At the PSU level data are skewed and it is not representative of the country. However, looking at Table 3.7, Nigeria had the largest number of total respondents and also the largest number of PSUs, whereas Guinea had the least PSUs. The numbers of respondents from each PSU varied across the seven countries from 1 to 31. Ghana had the lowest mean number of respondents in each PSU as well as the lowest total number of respondents in a PSU, whereas Mali and Senegal had both the highest mean number of respondents in a PSU and the highest overall number of respondents per PSU, of all the countries, at 31. The mean level of female education, mean wealth score and mean number of living children were all calculated at the PSU and regional level to explore how living in communities with higher mean scores compared with living in communities with lower mean scores.

Table 3.7. Primary sampling unit (PSU) summaries

	Number of observations	Number of PSUs	Mean number of people in PSU	Minimum number of people in PSU	Maximum number of people in PSU
Burkina Faso	6220	573	11	3	22
Ghana	1584	406	4	1	10
Guinea	2525	295	9	1	20
Mali	5216	407	13	4	31
Nigeria	9553	885	11	1	25
Senegal	4919	391	13	2	31
Sierra Leone	2248	350	6	1	17

A contextual variable was created to indicate the percentage of women in the community who were in polygamous unions. From previous research it is expected that modern contraceptive use will be negatively associated with the prevalence of polygamy in the community (Cau, 2013, Ezeh, 1997). The average educational level of women in the community was also calculated to explore how illiterate and educated women influence each other (Moursund and Kravdal, 2003). Regional polygamy was presented as low, medium or high. Regions which had less than 20% polygamy were classified as low, 20-33% was categorised as medium and high polygamy was attributed to regions where polygamy levels were over 33%. These boundaries were chosen as across the three categories about one-third of respondents fell into each of the three sections. Ezeh (1997) used less than 10%, 10%-20% and more than 20% for low, medium and high polygamy in Kenya. However for the seven countries in West Africa less than 1% of regions had polygamy levels below 10% and over 75% had levels greater than 20% so it was felt this classification may hide some interesting differences between the three polygamy levels. This variable was only used in the model looking at all seven countries together as some countries did not have regions which fell into the low (Guinea) or high (Ghana) categories.

Additional variables were created to show if a respondent belonged to the majority or minority ethnic and religious groups. The variable indicated whether or not the respondent shared the same ethnic group or religion as 50% or more of the other respondents in the primary sampling unit. It was not possible with the data to explore interpersonal communication following exposure to specific family planning programs however a dummy variable was created which indicated whether or not 50% of the community had been exposed to such programs. Table 3.8 shows an example of these variables, most notably the one relating to family planning media exposure. Interestingly about 20% of Malian and Ghanaian communities have over 50% exposure to medium or high levels of family planning media, whereas in the other countries communities with this level of exposure are more around 5%. When considering the contextual information from the DHS it would be expected that Ghana has the greatest percentage of high mass media coverage across PSUs based on the fact that as a

country Ghana has the overall lowest percentage of people with no access to mass media.

Family planning media exposure is lowest in Nigeria and Senegal where 57% and 67% of communities, respectively, have over 50% of their households with no family planning media exposure at all. When looking previously at DHS data neither Nigeria nor Senegal had exceptionally high levels of women who had no exposure to mass media, suggesting that in these countries exposure to mass media may be heterogeneously dispersed throughout the populations in these two countries. The hypothesis being explored here is whether or not living in a community with a higher percentage of women exposed to family planning media leads to a higher percentage of contraceptive users.

Table 3.8. Percentage of communities with different levels of family planning media exposure

	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
No majority exposure level	32.1	34.9	25.7	36.3	28.9	22.9	20.1
Over 50% of the community have no exposure	28.6	23.2	41.5	38.1	57.4	67.7	45.2
Over 50% of the community have low exposure	34	18.4	29.4	5.2	4.9	3.4	32.9
Over 50% of the community have medium or high exposure	5.3	23.4	3.3	20.4	8.8	5.9	1.8

A Francophone variable was created to explore how the colonial background of each country would influence contraceptive use (Table 3.9) . It was hypothesised in Chapter 1 that contraceptive use variations may be explained by the influence of different histories of colonisation. However this variable was not significant and therefore not included in the final model.

Table 3.9. Modern contraceptive use in Francophone and Anglophone countries

Official Language	Non-user	Current user
Francophone (%)	80.83	19.17
Anglophone (%)	83.13	16.87
Total (N)	26357	5908

3.5   Analysis

There are three analysis sections in this paper. First a bivariate analysis is presented to provide a basic understanding of the relationship between contraceptive use and the chosen independent variables. Then logistic regression was carried out between contraceptive use and the various independent variables as a whole. Multilevel modelling was then used as, especially when considering sociocultural factors, we are aware that decisions are not made by individuals in isolation but more in conjunction with the influence of their communities. The hierarchical nature of the DHS data also lends itself to the use of multilevel models.

3.5.1   Bivariate analysis

After identifying and operationalizing the variables; the relationship between individual variables and modern contraceptive use was explored. The analysis was carried out using the software package STATA Version SE 11. Standard DHS sample weights were used to make the sample more representative of the total population. A chi-squared test was carried out to assess the strength of the relationship between each pair of variables. The percentage of contraceptive users in each category is recorded in Table 3.10 and the significance of the chi-squared test is also shown in this table. If variables were not significant in at least one country they were excluded from future models and will not be discussed further.

Of the control variables; education, number of living children, and whether women were in a polygamous marriage, were significantly related to contraceptive use for all seven countries to at least $p<0.05$. As expected wealth and residence were also significantly ($p<0.001$) associated with contraceptive use in all countries, except in Ghana. Despite the lack of significance of residence and wealth in Ghana the numbers did follow the generally expected pattern, whereby urban respondents had slightly higher contraceptive use than rural respondents and contraceptive use did increase with wealth.

Table 3.10. Percentage of fecund, married women who are using contraception

Country	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
Highest educational attainment	***	***	***	***	***	***	***
No education	21.6	18.5	5.5	8.9	3.9	15.1	8.4
Primary	39.9	25.8	11.7	19.4	18.8	28.9	16.2
Secondary	57.5	29.3	27.7	32.2	26.7	33.8	29.9
Residence	***		***	***	***	***	***
Urban	46.0	27.2	17.0	21.5	24.9	30.6	25.0
Rural	20.7	24.7	4.2	7.6	11.2	11.7	6.8
Wealth	***		***	***	***	***	***
Poorest	14.6	20.0	2.8	6.0	3.4	8.2	4.1
Poorer	17.0	24.3	3.1	8.0	7.1	13.1	5.0
Middle	18.8	26.0	5.4	6.3	12.4	20.1	6.2
Richer	28.9	28.2	11.0	11.1	21.3	24.8	17.8
Richest	49.0	28,97	16.8	25.0	30.0	31.7	28.5
Husband's desire for more children	***		***	***	***	***	**
Both want the same	36.1	24.5	15.9	17.5	24.4	31.9	14.2
Husband wants more	19.4	24.5	4.9	8.8	9.8	19.6	15.3
Husband wants fewer	41.8	27.3	17.7	29.9	24.0	37.0	20.7
Don't know	23.0	21.6	6.6	11.1	9.9	16.3	9.5
Ideal number of children	***	*	***	***	***	***	***
2 or fewer	45.4	28.2	21.1	19.8	17.0	23.9	19.6
Three	46.6	29.5	17.1	15.7	30.9	32.9	17.1
Four	35.6	25.1	12.2	20.5	27.8	29.8	17.8
Five	26.9	31.4	8.5	17.0	19.6	21.3	11.6
6 or more	20.3	20.3	6.2	9.6	11.5	16.7	8.0
non-numerical	20.7	14.8	2.4	8.5	7.1	14.1	5.7
Desire for more children	***	***	***	***	***	***	***
Wants more	23.8	20.5	5.6	10.4	11.6	17.2	8.1
Undecided	23.5	11.4	13.5	9.6	10.1	14.7	15.2
Wants no more	39.9	36.4	15.0	22.4	33.4	35.0	20.6
Is in a polygymous marriage	***	***	*	*	***	***	***
No	31.4	27.7	9.1	13.8	19.4	22.7	15.0
Yes	21.1	17.5	6.8	11.0	9.0	16.6	8.9
Religious affiliation	***	**		**	***	***	***
Islam	25.0	17.7	8.0	12.8	8.1	20.0	11.1
Christian	36.1	27.7	10.4	21.2	24.1	–	–
No religion and other	15.0	23.4	8.6	6.8	10.0	41.6	19.4
Respondent can refuse sex	***		***	***	***	***	***
No	22.9	21.4	5.5	10.6	8.9	18.9	7.8
Yes	31.4	26.8	11.9	17.6	20.7	25.3	16.8
Ethnicity	***		*	**	***	**	*
Number of trips in last 12 months	***		**	***	***	**	**
None	24.1	26.4	6.9	11.6	13.4	18.7	10.2
One	32.2	24.4	10.3	13.1	16.4	20.0	15.7
Two or more	37.1	26.1	12.2	19.2	20.9	24.5	15.6
Radio and television access	***	*	***	***	***	***	***
No access	19.2	22.3	6.4	6.5	7.8	9.8	5.8
Access to one	24.7	23.4	6.6	9.3	9.5	15.7	13.8
Access to both	46.8	29.7	18.5	22.5	25.8	26.5	31.9
Exposure to family planning messages	***	*	***	***	***	***	***
None	18.4	22.8	5.1	6.6	8.7	15.5	6.2
Low	27.2	24.3	6.6	9.4	17.1	23.0	17.7
Medium	43.1	31.1	20.3	18.9	30.0	29.5	26.8
High	57.2	20.3	31.2	33.0	30.6	41.7	32.7
Discussed family planning	***	***	***	***	***	***	***
Not at all	18.1	17.5	7.2	11.9	13.1	8.2	6.3
With one source	36.5	67.2	8.6	17.3	63.7	41.9	24.8
With more than one source	54.3	68.7	25.7	31.5	72.4	81.3	50.4
Total percentage of users	27.5	25.9	8.2	12.8	16.3	20.8	12.8

Note: *** p<0.001 **0.001≥p<0.01 *0.01≥p<0.05

The pattern of contraceptive use with regards to husbands' desire for more children varied across the seven countries, although if the husband was perceived to want fewer children the wives were more likely to be using contraception. Respondents who felt that they could refuse sex were more likely to report modern contraceptive use for all seven countries, this difference was significant (p<0.001) in all countries with the exception of Ghana. Similarly women who could ask their partner to use a condom also reported the highest levels of contraceptive use.

Women who responded that their ideal number of children was more than five or that this could not be quantified numerically were the least likely in all countries to use a modern method of contraception.

The desire for more children was significantly associated (p<0.001) with the use of modern contraception for all seven of the study countries. Contraceptive use was 10% or more in the group of women who wanted more children than among those who did not want more. Whether or not respondents felt they could ask their partner to use a condom, and general discussions of family planning were also significant determinants of contraceptive use (p<0.001) in each of the seven countries.

There was no significant relationship between religious affiliation and modern contraceptive use in Guinea, however there was an association in the other six countries where Christians were more likely to be contraceptive users. Interestingly contraceptive use was generally elevated amongst the group who reported other or no religious association for all but Mali and Burkina Faso. In Mali the lowest contraceptive use was identified in the other or no religious affiliation category and in Guinea contraceptive use amongst "others" and Muslims were quite similar (8.6 and 8.0 respectively).

Across the seven countries, 33 ethnic classifications remained after the re-categorisations, shown in Table 3.6. Burkina Faso has the most shared ethnicities with the Bobo, Grussi, Gurma, Mole-Dagbani, Mossi, Peulh, Sénoufo and Tuareg. Ethnicity varied in significance; for Burkina Faso and Nigeria it was significant to p = 0.0000, whereas the relationship for Ghana was not significant. Ethnicity was associated with

contraceptive use in Mali, Guinea, Senegal and Sierra Leone with a significance of between p=0.04 and p=0.003.

The Bobo in Burkina Faso registered the highest modern contraceptive use at 44.7%, whereas contraceptive use among the Bobo living in Mali was 11.4%. The Sénoufo had the second highest rate of contraceptive use in Burkina Faso, and in Mali those from the same ethnicity had the highest rate of contraceptive use, however the absolute percentage of contraceptive users in this ethnicity differs substantially from 39.5% in Burkina Faso and 15.7% in Mali. The overall lowest contraceptive use among any ethnic group was recorded in Nigeria, for the Hausa ethnicity of 2.5%, yet this ethnicity was the fourth largest named ethnicity in Nigeria. Contraceptive use was also lowest for the Peulh in Guinea, at about 6%, despite this being the largest ethnic group in Guinea. Interestingly contraceptive use for the Peulh across all the countries identifying this ethnicity was relatively low or mid-low compared to the use for other ethnic groups. In Burkina Faso and Ghana the percentage of contraceptive users from the Mossi ethnicity was 28.1% and 18.6% respectively, whereas in Burkina Faso this is the dominant ethnicity it is the smallest named ethnicity for Ghana (only making up about 2% of the ethnic composition).

For Nigeria, Burkina Faso and Mali the number of trips undertaken by respondents was significantly related to contraceptive use. In all countries except Ghana the expected trend that contraceptive use would increase with number of trips was observed. Contraceptive use generally increased by at least 6% between those who had not undertaken any trips at all and women who had been on two or more trips. In Ghana there was not much variation between the groups and contraceptive use was slightly higher for women who had undertaken no trips.

In Nigeria and Guinea women with access to both radio and television were nearly three times more likely to use contraception than women with access to one medium. Contraceptive use for those with access to both the radio and television ranged from 18.5% to 46.8% across all seven countries.

Discussing family planning with more than one source resulted in the highest percentage of contraceptive users, with contraceptive use as high as 81% in Senegal

when family planning had been discussed with more than one source. Contraceptive use amongst those who reported not discussing contraception at all was as low as 6.3% in Sierra Leone. In Burkina Faso 18.1% of women who had never discussed family planning were contraceptive users, this was the highest level of use in this category across all seven countries. In Ghana there was not much increase in contraceptive use between women who had discussed with one or two sources whereas for the other countries there was a more marked increase in the percentage of users between these two categories.

3.5.2 Logistic regression

Two approaches were taken when running the logistic regression. The first was the creation of seven individual country models which included variables that were significant in individual countries. These will be referred to later on as the individual country models. The second approach was to create a single model which was run for each of the countries, producing seven models all containing the same variables. Hitherto this will be known as the overall country model.

The variables which were identified to be significant (at the 10% level) in the bivariate analysis, according to the chi-squared test, were input into individual country models. Backward selection was conducted, removing variables which were no longer significant at the 10% level.

In the final model for each country all remaining variables which were significant at the 10% level were used. The reference categories were chosen to be the categories with the lowest contraceptive use, in general across all countries, in order to ensure cross-comparability between the different models for each country. A number of countries were exceptions to the general rule about the category with the lowest contraceptive use.

For the variable "average number of trips" the category "no trips" was the reference for this group. For Ghana this was not the category with the lowest number of

contraceptive users. However the theories presented in the literature review indicate that this would be the category with the lowest percentage of users.

Individuals who stated a non-numerical answer for their desired family size were used as the reference category. In Burkina Faso the percentage of contraceptive users was slightly lower for women desiring six or more children. Across all the other countries non-numerical contained the lowest percentage of users.

For the "desire for more children" variable the reference category was chosen as "wants more children" despite it being the category with the lowest contraceptive use in only Guinea and Sierra Leone. It was felt that this was the most reasonable reference category as it would seem more likely for women who desire more children to not be using contraception than those who do not.

The response "husband wants more children" was the reference category for the variable where the respondent states what she believes her husband's desire for children is. It was felt that women who believed their husband wanted more children would be less likely to use contraception and this was the case for the study countries with the exception of Ghana, Senegal and Sierra Leone.

3.5.3   Multilevel analysis

To account for the hierarchical nature of the data the logistic regression was extended through multilevel modelling in order to estimate the correlation of observations within clusters. In this instance clusters refer to PSU and region. Two steps were carried out before the multilevel analysis was undertaken. First, the datasets for all seven countries were combined into one large dataset consisting of 32,265 respondents. Of these 5,754 were contraceptive users at the time of the survey. Second, new variables were created in order to maximise the benefits of using such a large dataset. These were discussed in section 3.4.3. second order PQL estimation methods were used as they are the most accurate. Although they are computer intensive, with the structure of the models and the number of individuals there was

not a problem in computing these models at this level. Cross level interactions were explored but did not significantly improve the fit of the model.

A multilevel model was created to explore community level variables and to increase the comparability of the ethnicity and religion variables. This was done in a two stage fashion. First the all-country dataset was subdivided into seven countries and a two-level random intercepts model was run for each country, with PSU as the random intercept. These models contained ethnicity and the wealth asset that related to wealth across all seven countries. In this model religion was excluded and region was included as a fixed effect.

In the second model, run using the whole combined dataset, the levels were specified as the individual at the lower level, nested in PSU and these were in turn nested within region, creating a three-level random intercepts model. By including the hierarchical level of PSU as a proxy for communities we are also correcting for clustering in the data. Although the country could also be included as a level in the model it has been included as a fixed effect in order to explore the interactions between countries and religion and this is the only interaction explored in the final model. Religion could not be explored in the two-level random intercept model for each country, as not all regions had participants in each of the religion categories. Here religion was reclassified into three categories: Muslim, Christian or other in order to allow country and religion interactions.

3.6   Results

The results from each of the country models will be discussed individually in the sections of this chapter. However, one variable – sources of family planning discussion, was significant in all countries, so it will be discussed here. Additionally for all countries exposure to more than one source of family planning discussion has the largest effect size on contraceptive use. As would be expected, in Burkina Faso, Ghana, Nigeria, Senegal and Sierra Leone both discussing family planning with one source and discussing with more than one source were highly related to the women using a

contraceptive method. For these countries the more discussions respondents were involved with the greater the odds of contraceptive use. However between these countries the effect sizes varied greatly. For example in Mali if there was more than one source of contraceptive discussion respondents had odds of contraceptive use 3.54 times greater than those who were not exposed to discussions, whereas in Senegal the corresponding figure was 39.96. The variation of this odds ratio verifies the intuitive link that discussions about family planning should lead to elevated levels of contraceptive use compared to non-exposure.

For most countries discussion with more than one source led to an increase of about 50% in the odds of contraceptive use. However in Ghana, despite both categories of discussion being highly significant the odds of contraceptive use did not differ greatly depending on how many discussions had occurred. Contrary to this in Guinea the odds of contraceptive use were reduced for women with exposure to only one source of family planning discussion but for women with multiple sources of discussion odds of contraceptive use increased by 4.5 times. This may be due to the classification of the individual sources of contraceptive discussion or it may suggest that in Guinea contraceptive users are not often only exposed to one type of discussion. Another exception is seen in Mali whereby despite the likelihood of contraceptive use increasing as the number of sources increasing, it is the only country where the magnitude of likelihood is not that unlike those observed for some of the other categories such as desire for more children or husband's desire for more children. Suggesting that in Mali this variable does not stand alone as the most important determinant of contraceptive use, unlike in the other six countries where this is the case.

The discussion regarding the results of the individual country models will focus on the variables of interest rather than the control variables, which are not discussed but are listed at the bottom of Table 3.11 to Table 3.17.

3.6.1   Burkina Faso

In Burkina Faso many variables were significant leading to the model in Table 3.11.
Respondents affiliated with the 'other' religion category were 40% less likely to be
contraceptive users than Muslims, whereas Christians are nearly 20% more likely to be
contraceptive users than their Muslim counterparts. Women who desire 3 or 4
children were significantly more likely to use contraception than women who could
not quantify their ideal family size.

Table 3.11. Burkina Faso individual country logistic regression

Variable	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Ideal number of children	Reference: Non-numerical				
	2 or fewer	1.48	0.24	0.77	2.86
	Three	1.89	0.02	1.11	3.21
	Four	1.62	0.05	0.99	2.63
	Five	1.35	0.22	0.84	2.17
	6 or more	1.14	0.60	0.71	1.81
Desire for more children	Reference: Wants more children				
	Undecided	1.00	0.99	0.52	1.90
	Wants no more	1.99	0.00	1.61	2.48
Husbands desire for more children	Reference: Husband wants more				
	Both want the same	1.71	0.00	1.44	2.03
	Husband wants fewer	1.89	0.00	1.33	2.68
	Don't know	1.24	0.09	0.97	1.57
Identity					
Religion	Reference: Muslim				
	Christian	1.18	0.08	0.98	1.41
	Other	0.61	0.00	0.44	0.84
Ethnicity	Reference: Peulh				
	Other	1.16	0.45	0.79	1.70
	Tuareg	0.37	0.07	0.13	1.08
	Sénoufo	2.48	0.00	1.66	3.69
	Bobo	2.40	0.00	1.54	3.72
	Mossi	1.41	0.02	1.05	1.90
	Mole-dagbani	1.09	0.71	0.68	1.75
	Grussi	0.97	0.90	0.62	1.53
	Gurma	1.28	0.26	0.83	1.97
	Dioula	1.29	0.48	0.64	2.61
	Bissa	1.53	0.06	0.99	2.37
Has a co-wife	Reference: No				
	Yes	0.87	0.09	0.73	1.02
Communication					
Family planning media exposure	Reference: Has no access to family planning media				
	Low	1.32	0.00	1.13	1.56
	Medium	1.10	0.46	0.86	1.40
	High	0.94	0.78	0.62	1.43
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One Source	2.68	0.00	2.25	3.19
	More than one source	5.58	0.00	4.61	6.75
Controlling for: age, age 2, education, wealth					

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Low exposure to family planning media messages led to an increase in contraceptive use, whereas contraceptive use was not significantly increased for medium or high exposure which could be due to small numbers of people in these categories. Members of the Bobo and Sénoufo ethnicities were 2.4 and 2.5 times (respectively) as likely to be using contraception than the Peulh, who have a very low use of contraception (p<0.00).

3.6.2   Ghana

Ghana had few significant variables compared to Burkina Faso and the model was much simpler, this can be seen in Table 3.12. The sociocultural barrier related to values: desire for more children was also statistically significant for Ghana. As expected, women who did not want any more children were 2.19 times more likely to be contraceptive users than those who were sure they wanted more. Women who stated that they were undecided as to whether or not they wanted more children were 45% less likely to be using contraception, this was however not statistically significant.

Table 3.12. Ghana individual country logistic regression

Variable	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Desire for more children	Reference: Wants more children				
	Undecided	0.56	0.18	0.24	1.31
	Wants no more	2.19	0.00	1.63	2.93
Identity					
Has a co-wife	Reference: No				
	Yes	0.65	0.04	0.43	0.98
Communication					
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One source	8.70	0.00	5.59	13.53
	More than one source	9.81	0.00	5.97	16.11
Controlling for: education					

3.6.3   Guinea

In Guinea a greater number of variables were significantly related to contraceptive use than in Ghana (see Table 3.13). Husbands' desire for more children was statistically significant. When the respondent perceived her husband's desire for more children as

Table 3.13. Guinea individual country logistic regression

Variable	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Desire for more childre	Reference: Wants more children				
	Undecided	1.68	0.29	0.64	4.39
	Wants no more	3.08	0.00	1.93	4.89
Husbands desire for more children	Reference: Husband wants more				
	Both want the same	2.89	0.00	1.68	4.96
	Husband wants fewer	1.91	0.12	0.85	4.29
	Don't know	1.31	0.20	0.87	1.99
Identity					
Can refuse sex	Reference: No				
	Yes	1.61	0.01	1.11	2.34
Communication					
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One source	0.70	0.32	0.35	1.42
	More than one source	4.49	0.00	2.49	8.11
Controlling for: age, age 2, education, residence and wealth					

being the same as hers the likelihood of contraceptive use was 2.4 times higher than for women who believed their husbands wanted more children (p<0.00). The ability to refuse sex was associated with a highly significant increase in the likelihood of contraceptive use, compared to women who could not refuse sex.

3.6.4   Mali

As was found in Burkina Faso, religion was significantly associated with contraceptive use in Mali (Table 3.14). However in this case women affiliated with the Christian faith were nearly twice as likely to be contraceptive users as Muslim women.

Table 3.14. Mali individual country logistic regression

Variable	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Ideal number of children	Reference: Non-numerical				
	2 or fewer	1.65	0.09	0.92	2.96
	Three	1.34	0.31	0.76	2.35
	Four	2.01	0.00	1.34	3.02
	Five	1.83	0.01	1.20	2.80
	6 or more	1.26	0.21	0.88	1.81
Desire for more children	Reference: Wants more children				
	Undecided	1.46	0.36	0.65	3.28
	Wants no more	2.97	0.00	2.13	4.13
Husbands desire for more children	Reference: Husband wants more				
	Both want the same	1.74	0.00	1.26	2.40
	Husband wants fewer	3.12	0.00	1.77	5.51
	Don't know	1.50	0.01	1.12	2.00
Identity					
Religion	Reference: Muslim				
	Christian	2.04	0.01	1.21	3.45
	Other	0.71	0.35	0.35	1.45
Can refuse sex	Reference: No				
	Yes	1.36	0.01	1.08	1.72
Communication					
Trips outside of home community	Reference: No trips				
	One trip	1.19	0.21	0.91	1.58
	More than one trip	1.81	0.00	1.35	2.42
Family planning media exposure	Reference: Has no access to family planning media				
	Low	1.22	0.25	0.87	1.73
	Medium	2.00	0.00	1.50	2.66
	High	2.14	0.00	1.37	3.34
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One source	1.23	0.39	0.77	1.98
	More than one source	3.54	0.00	2.22	5.66
Controlling for: age, age 2, number of living children, education, residence and wealth					

Undertaking trips outside of the home increased the likelihood of contraceptive use but this was only statistically significant for women who had undertaken multiple trips. Respondents who desired 4 or 5 children were significantly more likely to have increased odds of contraceptive use than those with a non-numerical desired family size. Exposure to two or more forms of family planning media significantly increased the odds of contraceptive use. However it was only statistically significant for women who had high or medium exposure.

Women who felt able to refuse sex were 1.36 times as likely to be contraceptive users (p<0.01). The respondents view on her partner's desire for children in comparison to her own was significant at the 1% level whether she perceived her husband to want the same number of children as herself, want fewer or even if she was not sure.

Women who believed they wanted the same number of children as their partners were 1.74 times as likely to use contraception and those whose partners wanted fewer were 3.12 times as likely to be using contraception. Even women who were unsure or did not know their husbands opinion were 1.5 times more likely to be contraceptive users than women who felt their husband wanted more children than they did.

3.6.5 Nigeria

Ethnicity was significantly (at the 1% level) associated with contraceptive use for all ethnicities in Nigeria. As was found by Kollehlon (2003) being a member of the Yoruba ethnic group meant women were significantly more likely to be contraceptive users than members of other ethnic groups (Table 3.15).

Table 3.15. Nigeria individual country logistic regression

Variable	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Ideal number of living children	Reference: Non-numerical				
	2 or fewer	1.72	0.06	0.97	3.04
	Three	2.07	0.00	1.36	3.15
	Four	1.77	0.00	1.26	2.47
	Five	1.39	0.06	0.98	1.95
	6 or more	1.23	0.19	0.90	1.68
Desire for more children	Reference: Wants more children				
	Undecided	1.07	0.67	0.79	1.46
	Wants no more children	2.24	0.00	1.82	2.76
Husbands desire for more children	Reference: Husband wants more				
	Both want the same	1.45	0.00	1.17	1.79
	Husband wants fewer	1.19	0.38	0.81	1.74
	Don't know	0.90	0.38	0.72	1.14
Identity					
Ethnicity	Reference: Hausa				
	Other	3.12	0.00	2.29	4.25
	South-eastern Nigeria	3.15	0.00	2.11	4.71
	Yoruba	5.35	0.00	3.86	7.41
	Igbo	2.79	0.00	1.95	3.98
	Tiv	3.74	0.00	2.23	6.25
Has a co-wife	Reference: No				
	Yes	0.71	0.00	0.59	0.86
Communication					
Trips outside of the home community	Reference: No trips				
	One trip	1.09	0.45	0.87	1.38
	More than one trip	1.26	0.00	1.08	1.48
Radio and television access	Reference: Has no access to general media				
	Access to radio or TV	1.23	0.12	0.95	1.60
	Access to both radio and TV	1.60	0.00	1.22	2.08
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One source	5.57	0.00	3.80	8.18
	More than one source	11.05	0.00	7.72	15.82
Controlling for: age, age2, number of living children, education and residence					

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Access to both the radio and television significantly increased the likelihood of contraceptive use to 1.6. Taking multiple trips outside of the community led to increased odds of contraceptive use compared to those who did not undertake trips. Similarly, as observed in Burkina Faso, women who desired 3 children were significantly more likely to use contraception. In Nigeria they had odds of 2.07 to be contraceptive users. Having a co-wife was associated with decreased odds of contraceptive use.

3.6.6   Senegal

As seen in Table 3.16 we can identify that similarly to Burkina Faso, religion was significantly associated with increased contraceptive use in Senegal. However in Burkina Faso there are three religion categories (Muslim, Christian and other) whereas in Senegal there are just two (Muslim and other). In Senegal women in the other category were 2.6 times more likely to be contraceptive users than Muslims, whereas in Burkina Faso women in the other category had been identified as being less likely and Christians as more likely to use contraception than Muslims. This may be due to the fact that Christians in Senegal were included in the other category, making up nearly 90% of this category. Table 3.16 also shows that women exposed to both radio and TV were over twice as likely to use contraception as those who were not exposed to general media messages. Additionally women exposed to one form of media were 1.7 times more likely to use contraception than those with no exposure. The ideal number of children was also significant, as with Mali and Burkina Faso for women who wanted 3, 4 or 5 children compared to women who did not quantify their desired family size

Table 3.16. Senegal individual country logistic regression

Variables	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Ideal number of children	Reference: Non-numerical				
	2 or fewer	1.41	0.46	0.57	3.46
	Three	1.71	0.09	0.93	3.17
	Four	1.81	0.00	1.22	2.67
	Five	1.62	0.02	1.08	2.44
	6 or more	1.12	0.55	0.77	1.63
Desire for more children	Reference: Wants more children				
	Undecided	0.87	0.79	0.32	2.36
	Wants no more children	1.64	0.01	1.11	2.41
Identity					
Religion	Reference: Muslim				
	Other	2.55	0.01	1.28	5.09
Has a co-wife	Reference: No				
	Yes	0.62	0.00	0.47	0.83
Communication					
Radio and television access	Reference: Has no access to general media				
	Access to either radio or TV	1.67	0.01	1.12	2.51
	Access to both radio and TV	2.43	0.00	1.58	3.72
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One source	6.41	0.00	4.79	8.59
	More than one source	39.96	0.00	27.42	58.23
Controlling for: age, age 2, residence and number of living children					

3.6.7   Sierra Leone

In Sierra Leone women who wanted no more children were over twice as likely to use contraception (p<0.00). This was the only country where the respondent alone having the final say on certain household, visitation and healthcare decisions was significant. Women who scored higher on the PCA were 14% more likely to use contraception than women with lower scores.

Table 3.17. Sierra Leone individual country logistic regression

Variable	Categories	Odds Ratio	P>t	95% confidence interval	
Values					
Desire for more children	Reference: Wants more children				
	Undecided	1.90	0.03	1.06	3.40
	Wants no more	2.06	0.00	1.41	3.01
Identity					
Who has the final say	Respondent alone	1.14	0.01	1.04	1.26
Communication					
Sources of family planning discussion	Reference: Has not discussed family planning with husband or family planning worker				
	One source	4.65	0.00	3.11	6.95
	More than one source	11.93	0.00	7.85	18.12
Controlling for: age, age 2, education and wealth					

3.6.8 Same model for all countries

In order to better understand how the sociocultural determinants of contraceptive use vary across the countries the same model was created for each country whereby the variables included were included because they were significant in at least one of the countries. Table 3.18 shows the variables, which were identified as significant to at least the 10% level for each of the individual country models.

For the overall model age, age^2, the number of living children, education, wealth and place of residence were all controlled for. Using the same model (Table 3.19 and Table 3.20) for all countries provides some interesting observations. When the model for Guinea was run with all the variables, the ideal number of children variable was significant for women with two children or fewer, which was not the case before.

Table 3.18. Variables included in the individual logistic regressions for each country

	Burkina Faso	Ghana	Guinea	Mali	Nigeria	Senegal	Sierra Leone
Value variables							
Ideal number of children	●			●	●	●	
Desire for more children	●	●	●	●	●	●	●
Husband's desire for more children	●		●	●	●		
Identity variables							
Ethnicity	●				●		
Religion	●			●		●	
Can refuse sex			●	●			
Has a co-wife	●	●			●	●	
Who has the final say							●
Communication variables							
Trips ouside of home community				●	●		
Access to radio and/or television					●	●	
Family planning media exposure	●			●			
Has discussed family planning	●	●	●	●	●	●	●
Control variables							
Age	●		●	●	●	●	●
Age^2	●		●	●	●	●	●
Number of living children				●	●	●	
Education	●	●	●	●	●		●
Residence			●	●	●	●	
Wealth	●		●	●			●

Guinean women were 6.18 more likely to be contraceptive users if their ideal family size was two children or fewer compared to women who expressed a non-numerical ideal family size. Across Burkina Faso, Mali, Nigeria and Senegal having 4 children was significantly related to increased odds of contraceptive use, odds of use were greatest in Mali.

In Table 3.19 "desire for no more children" was significantly associated with increased odds of contraceptive use for all countries. In Ghana, Guinea, Mali and Nigeria women who wanted no more children were over twice as likely to be contraceptive users as women who wanted more children.

Husband's desire for more children was significantly related to the odds of contraceptive use in Mali and Burkina Faso, where the odds that a couple in which the wife believed her husband wanted fewer children than she did were 2.97 and 1.91 respectively. Women who wanted the same number of children as their husbands in Guinea were nearly three times more likely to be using contraception. In Nigeria this same group had increased odds of 1.38 to be contraceptive users, for both countries this was significant to $p<0.001$.

Undertaking two or more trips outside of the home community was only significant in Mali and Nigeria, in Mali the odds of contraceptive use were 1.84 if women had undergone two or more trips outside of the home. General media exposure was only significant in Mali and Senegal. The odds of contraceptive use in Senegal for women exposed to one form of general media were the same as for Malian women exposed to both forms. Women in Senegal with access to both the radio and television had odds of 2.06 of being contraceptive users.

Only in Senegal and Ghana were specific family planning media messages not significantly related to contraceptive use. Exposure to family planning media was not consistently significant, nor did the odds of contraceptive use always increase with the strength of exposure. In Burkina Faso and Sierra Leone, only low exposure to family planning media messages was significantly related to increased odds of modern contraceptive use. In comparison, in Guinea only medium exposure was significant. In

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Table 3.19. Same model for each country exploring Values and Communication sociocultural determinants of contraceptive use

Variable	Categories	Burkina Faso Odds Ratio	P>t	Ghana Odds Ratio	P>t	Guinea Odds Ratio	P>t	Mali Odds Ratio	P>t	Nigeria Odds Ratio	P>t	Senegal Odds Ratio	P>t	Sierra Leone Odds Ratio	P>t
Values															
Ideal number of children	Reference: Non-numerical														
	2 or fewer	1.69		1.13		6.18	**	1.68		1.68		1.27		2.06	
	Three	2.08	**	1.22		2.84		1.33	***	1.98	***	1.55		2.45	
	Four	1.74	*	1.03		2.45		2.00	***	1.69	***	1.59	*	2.97	
	Five	1.43		1.69		2.61		1.82	*	1.34		1.50		3.08	
	6 or more	1.14		1.04		2.53		1.24		1.23		0.97		2.03	
Desire for more children	Reference: Wants more children														
	Undecided	0.94		0.57		1.55		1.46		1.06		0.84		1.76	
	Wants no more children	1.80	***	2.10	**	2.71	***	2.95	***	2.19	***	1.57	*	1.83	*
Husbands desire for more children	Reference: Husband wants more														
	Both want the same	1.72	***	0.91		2.81	***	1.67	***	1.38	***	1.42		0.53	*
	Husband wants fewer	1.91	***	1.14		2.00		2.97	***	1.09		1.32		0.82	
	Don't know	1.24		0.89		1.28		1.47	*	0.89		0.93		0.54	*
Communication															
Number of trips outside the home	Reference: No trips														
	One	1.04		0.69		1.24		1.16		1.08		0.85		1.18	
	2 or more	1.18		0.80		1.23		1.84	***	1.26	***	1.05		1.17	
Radio and television access	Reference: Has no access to general media														
	Access to one	1.07		1.06		0.77		1.17		1.14		1.58	*	1.28	
	Access to both	0.93		1.08		0.78		1.54	*	1.23		2.06	*	1.37	
Family planning media access	Reference: Has no access to family planning media														
	Low	1.30	**	1.10		1.26	***	1.22		1.39	***	0.98		1.61	*
	Medium	1.09		1.19		2.47		1.83	***	1.33	*	0.96		1.27	
	High	0.98		0.52		1.96		2.00	***	1.19		0.90		1.43	
Family planning discussion	Reference: Has not discussed family planning with husband or family planning worker														
	With one source	2.61	***	9.22	***	0.68		1.27		5.49	***	6.27	***	4.28	***
	With more than one source	5.42	***	10.84	***	3.63	***	3.54	***	10.67	***	40.48	***	11.92	***

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

Mali both medium and high exposure to family planning media was significantly related to contraceptive use and the odds increased with the extent of exposure (1.8 and 2.0 respectively). In Nigeria only low and medium exposure were significant, yet the more exposure, the less odds of contraceptive use increased.

The discussion of family planning was significant in all countries, at the 5% level, for discussions with one or more sources, with the exceptions of Guinea and Mali where discussions with one source were not significantly associated with increased contraceptive use. It may not be significant due to a small number of women in these categories, where the majority of women who use family planning have had discussions about family planning with more than one source. In Guinea the inverse relation with one source of family planning discussion and odds of contraceptive use could show that women need to be exposed to more than one source of family planning discussion before they become users. Table 3.19 shows that women who discuss family planning with more than one source have increased odds of 3.63 to be contraceptive users. In Sierra Leone, Ghana, Nigeria and Senegal women with only one source of family planning discussion had increased odds of over 4 to be using contraception. This suggests that the odds of contraceptive use in these countries are highly elevated after discussions with only one source of family planning.

In Burkina Faso, Mali and Nigeria membership of the Christian faith is significantly (p<0.05) associated with increased odds of contraceptive use, compared to being Muslim (Table 3.20). In Mali the odds of contraceptive use increased twofold for women of the Christian faith, whereas in Burkina Faso and Nigeria the odds increase by 0.2. Being a member of the "other" religious group was significant in Burkina Faso and Senegal. In Burkina Faso it was associated with decreased odds of contraceptive use. Due to the construction of the "other" variable it is hard to conclude any viable outcomes of the way this category affects contraceptive use as it is a very heterogeneous group. For example in Senegal 79% of the "other" category is Christian and in Burkina Faso 88% of this category follow traditional or animist faiths so the observed relationships with contraceptive use may be reflective of the dominant faiths in the "other" category. The perceived ability to refuse sex remained significant in only

one country (Mali) and it was associated with increased odds of contraceptive use of 1.37.

The reference category for Guinea, Burkina Faso, Mali and Senegal was the Peulh ethnicity, this ethnicity was chosen to make this cross-country examination as comparable as possible. In Mali, Guinea, Senegal and Sierra Leone ethnicities were not significantly related to contraceptive use at the 5% level or less. However, in Nigeria being in an ethnicity other than the Hausa ethnic group was related to significantly increased odds of contraceptive use of two or more. This is likely because of the extremely low rates of contraceptive uptake amongst the Hausa ethnicity in Nigeria. The Yoruba were 4.49 times as likely to be using contraception as the Hausa. The Yoruba are knowing for being highly westernised and as the ethnicity with the most exposure to immigration, which could explain the elevated odds of contraceptive use in this region (Levinson, 1998). No other ethnicity had similar odds of contraceptive use. In Burkina Faso, the Bissa, Bobo, Mossi and Sénoufo were significantly more likely than the Peulh to be contraceptive users. Again this may be due to the low contraceptive use observed amongst the Peulh ethnicity. However the differences in contraceptive use and varied levels of significance may be related to the fact that for some ethnicities in Burkina Faso village and family ties are more important than ethnic associations (Levinson, 1998). In Ghana the Ewe and Mole-Dagbani had significantly increased odds of being contraceptive users but the odds of use were elevated for all ethnicities and those in the unnamed ethnic category were the most likely to be contraceptive users, with odds of 2.7.

Table 3.20. Same model for each country model exploring Identity sociocultural determinants of contraceptive use

Variable	Categories	Burkina Faso Odds Ratio	P>t	Ghana Odds Ratio	P>t	Guinea Odds Ratio	P>t	Mali Odds Ratio	P>t	Nigeria Odds Ratio	P>t	Senegal Odds Ratio	P>t	Sierra Leone Odds Ratio	P>t
Identity															
Religion	Reference: Muslim														
	Christian	1.20	*	1.40		0.86		2.34	*	1.29	*	-	-	-	-
	Other	0.60	**	1.20		1.65		0.73		1.23		2.45	*	0.97	
Ethnicity	Akan			Ref											
	Bambara									1.34					
	Bissa	1.56	*												
	Bobo	2.39	***							0.58					
	Diola											0.81			
	Dioula	1.30													
	Dogon									1.19					
	Ewe			1.76	*										
	Ga-Adangbe			1.49											
	Grussi	0.98		2.17											
	Guerzé					1.18									
	Gurma	1.29		2.02											
	Hausa									Ref					
	Igbo									2.19	***				
	Kissi					1.84								0.91	
	Malinké/Mandingo					1.55		1.01				0.69		1.15	
	Mende													1.31	
	Mole-Dagbani/Dagara/Lobi	1.08		2.14	**										
	Mossi	1.40	*	1.52											
	Northern Sierra Leone													Ref	
	Peulh	Ref				Ref		Ref				Ref			
	Sarkolé/Soninké/Marka							0.97				0.66			
	Sénoufo/Minianka	2.57	***					1.24							
	Serer											0.88			
	Sonrai							0.85							
	Soussou					0.90									
	South-eastern Nigeria									2.48	***				
	South-western Sierra Leone													1.82	
	Tiv									3.16	***				
	Toma					1.36									
	Tuareg	0.38						1.33							
	Wolof											0.94			
	Yoruba									4.49	***				
	Other	1.16		2.70	*	1.25		0.77		2.67	***	1.02		0.94	
Can refuse sex	Reference: No														
	Yes	1.04		1.20		1.43		1.37	*	1.04		1.26		1.22	
Has a co-wife	Reference: No														
	Yes	0.89		0.65		0.86		0.94		0.74	***	0.65	***	0.80	
Who has the final say	Respondent alone	1.05		0.98		0.94		1.02		0.99		0.97		1.15	*

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05 Ref = Reference category

3.6.9   Multilevel logistic regression

Initially all the variables significant in the logistic regression were entered into the model in MLwiN. However having the final say in household decisions was no longer significant and excluded from the final MLMs. Only contextual variables which were significant in at least one model were included.

3.6.9.1   **Individual country multilevel logistic regressions**

This is different from the previous models as ethnicity and region were included in these multilevel models (Table 3.22) and therefore these variables will be explored first, after examining the base population for each country (Table 3.21).

Table 3.21. Base odds of being a contraceptive user by country

	Constant	SE	Odds	Probability of use
Burkina Faso	-3.76	0.37	0.02331	0.02278
Ghana	-4.31	0.84	0.01339	0.01322
Guinea	-5.27	0.86	0.00517	0.00514
Mali	-5.62	0.39	0.00361	0.00360
Nigeria	-6.42	0.37	0.00163	0.00162
Senegal	-5.94	0.52	0.00263	0.00262
Sierra Leone	-6.32	0.80	0.00181	0.00180

Across the seven countries the probability of a woman being a contraceptive user is very low for a woman in the base category (Table 3.21). This is a woman who: is aged 30, has fewer than two children and desires more children, lives in a rural community, is from the poorest quintile, holds a desire for a non-numerical ideal number of children, would like more children and believes her husband would like more children than she does, has not undertaken any trips outside her home community in the last 12 months, has no access to any form of media, has never discussed contraception, does not feel she can refuse sex with her partner, has a co-wife, comes from either the Peulh ethnicity or the largest named ethnicity if Peulhs were not present and also lives in the most populated region of her country.

Table 3.22. Multilevel models run for each country Identity variables

Identity variables	Burkina Faso		Ghana		Guinea		Mali		Nigeria		Senegal		Sierra Leone	
	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t
Ethnicity	Reference: Peulh		Reference: Akan		Reference: Peulh		Reference: Peulh		Reference: Hausa		Reference: Peulh		Reference: N. Sierra Leone	
Unspecified ethnicity	1.18		1.53		1.07		1.11		3.27	***	1.12		0.84	
Tuareg	0.38						1.17							
Sénoufo/Minianka	1.88	*					1.08							
Bobo	1.91	**					0.90							
Mossi	1.34		1.64											
Mole-Dagbane	1.08		1.99	*										
Grussi	1.06		1.23											
Gurma	1.34		1.89											
Dioula	1.24													
Bissa	1.60													
Ga-Adangbe			1.15											
Ewe			1.81	*										
Malinké/Mandingo					1.20		1.15				0.82		1.45	***
Kissi					1.54								0.88	
Soussou					0.80									
Toma					1.43									
Guerzé					1.22									
Bambara							1.15							
Sarkolé/Soninké/Marka							0.94				0.84			
Sonrai							1.11							
Dogon							1.27							
Bobo							0.90							
South eastern Nigeria									3.36	***				
Yoruba									4.72	***				
Igbo									3.33	***				
Tiv									5.35	***				
Wolof											0.96			
Serer											0.88			
Diola											0.95			
South-western Sierra Leone													1.25	*
Mende													1.02	
Can refuse sex	Reference: No													
Yes	1.01		1.23		1.43	*	1.54		1.09		1.27	*	1.22	
Has a co-wife	Reference: Yes													
No	1.14		1.64	*	1.04		1.16	**	1.41	***	1.38	**	1.28	

*** $p<0.001$ ** $0.001>p>0.01$ * $0.01>p>0.05$

Despite being a recognised ethnicity in four countries and three of these countries sharing the same reference ethnicity, being part of the Mandingo ethnicity was only significant in Sierra Leone (Table 3.22). Only in Senegal was being of Mandingo origin related to decreased odds of contraceptive use, but this was not significant at the 5% level. The Mandingo are present in four of the seven countries as they are known for immigration and travel which stems from their origins as traders (Levinson, 1998). The differences in levels of contraceptive use may reflect the fact that this ethnicity is known to assimilate into indigenous ethnic groups (Levinson, 1998) and with the exception of the Mandingo in Sierra Leone odds of contraceptive use for this ethnicity

are similar to those displayed for the country in which they are observed. The differences in the probabilities of contraceptive use for women identifying as Mandingo in the four countries where the reference ethnicity is Peulh reaffirm this (Figure 3.7).

Figure 3.7. Probability of contraceptive use for the Mandingo ethnicity in four West African countries
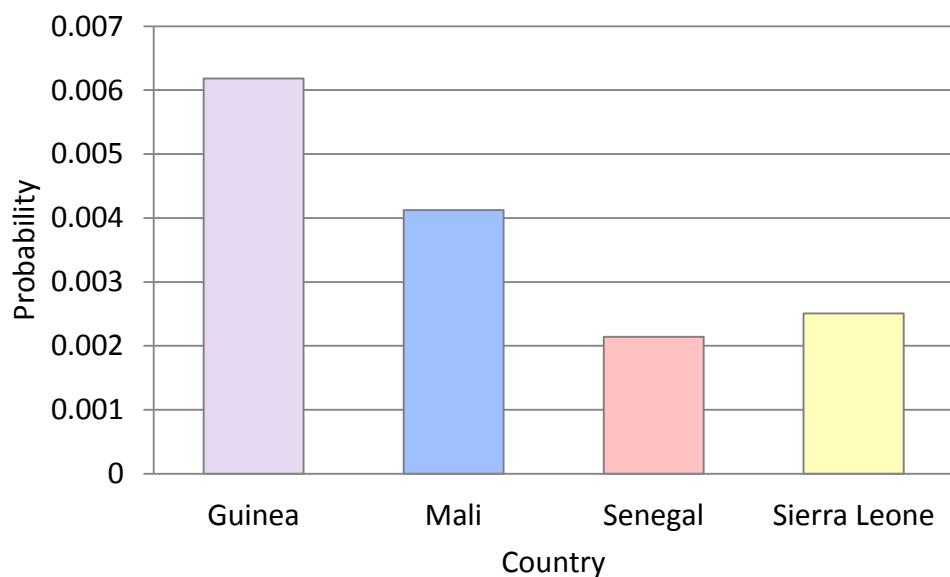
As was previously observed, in Nigeria, being a member of any ethnicity other than the Hausa, significantly increased the odds of contraceptive use. However, interestingly when accounting for the clustering of the data, it is no longer the Yoruba who have the highest odds of contraceptive use. Women who identify with the Tiv ethnicity have the highest odds (5.3) of being contraceptive users. The Tiv have been recognised as having a collectively strong notion of ethnicity (Sparks, 1998), which could explain why the odds of contraceptive use are highest in this ethnicity. Kollehlon (2003) did not include the Tiv ethnicity in their analysis of ethnicity and fertility in Nigeria.

Figure 3.8. Probability of contraceptive use for different ethnicities in Ghana
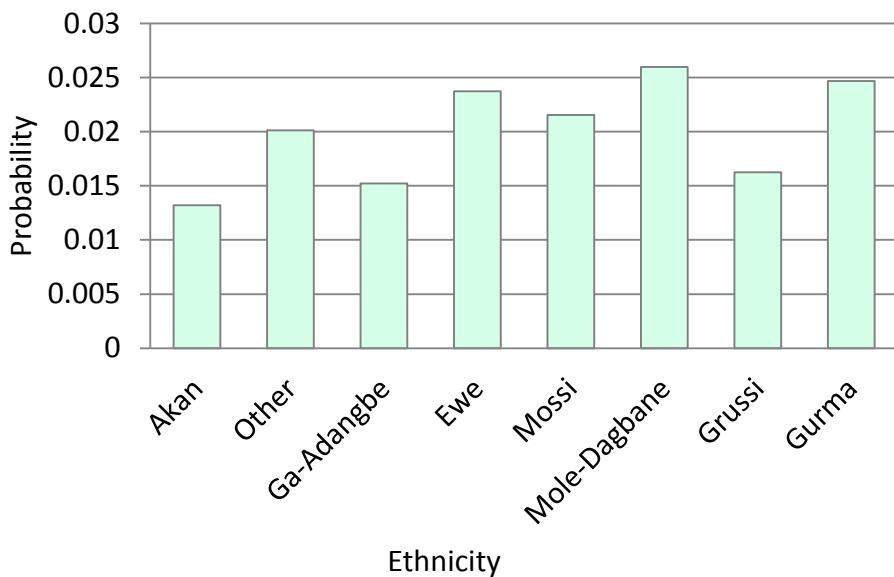
In Ghana being a member of the Mole-Dagbane ethnicity or being of Ewe origin remained significant at the 95% level and women were nearly twice as likely to use contraception as the Akan. Interestingly Addai (1999) had the Mole-Dagbani as the reference category and in there analysis identifying with the Akan was significantly related to odds of contraceptive use, suggesting that there may be a relationship between these two ethnicities. When we examine the probabilities of contraceptive use in Ghana there is not much difference in the probabilities of contraceptive use for the Ewe, Mole-Dagbane and Gurma. It was difficult to classify ethnicities in Ghana as the Mole-Dagbane, Grussi and Gurma are all from the Gur language family. However in Figure 3.8 the decreased probability for women from the Grussi ethnicity validates the importance of considering these ethnicities separately.

Women in Burkina Faso who identified as Sénoufo and Bobo still had significantly increased odds of contraceptive use, compared to the Peulh when the multilevel regression was run. Although no ethnicities in Mali were significant determinants of contraceptive use. This is emphasised in Figure 3.9 where the probability of contraceptive use hardly varies by ethnicity in Mali, contrary to Burkina Faso where ethnic differentials in contraceptive use are confirmed.

Figure 3.9. Probability of contraceptive use by ethnicity for two West African countries
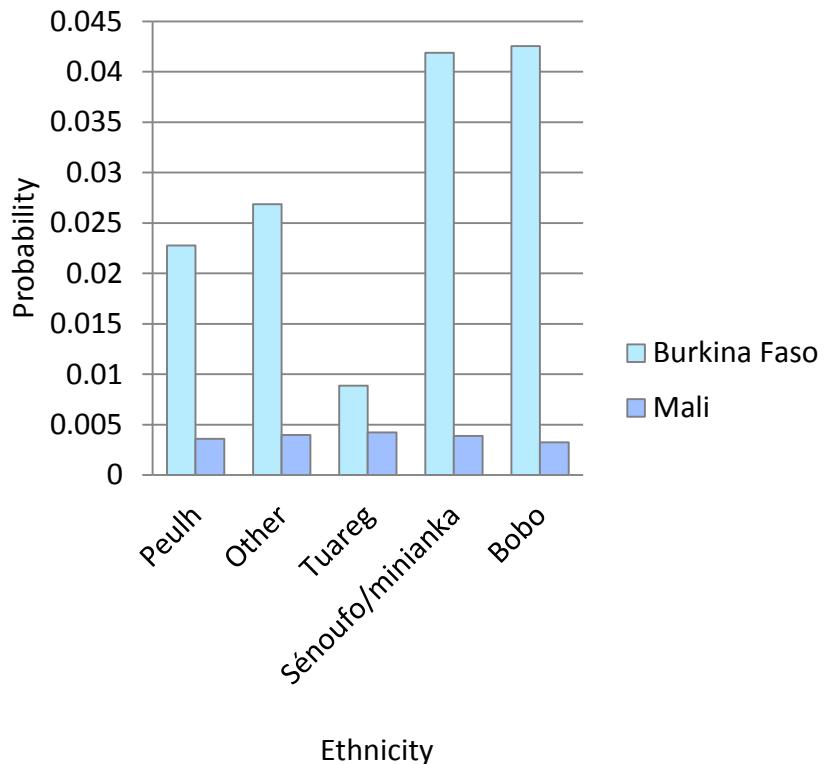
The reference categories for region were chosen as the region with the largest number of respondents (Table 3.23). This led to the region in which was situated the capital city to be used as a reference category in Burkina Faso, Mali and Senegal. The only two regions which were significantly associated with contraceptive use were the Nord in Burkina and Ségou in Mali however the odds and probability of contraceptive use are not similar across this border (Figure 3.10).

Table 3.23. Multilevel models run for each country region variable

Region	Burkina Faso Odds Ratio	P>t	Ghana Odds Ratio	P>t	Guinea Odds Ratio	P>t	Mali Odds Ratio	P>t	Nigeria Odds Ratio	P>t	Senegal Odds Ratio	P>t	Sierra Leone Odds Ratio	P>t
	Reference: Centre		Reference: Ashanti		Reference: Nzérékoré		Reference: Bamako		Reference: South-west		Reference: Dakar		Reference: Northern	
BF: Boucle de Mouhoun	0.66	*												
BF: Cascades	0.80													
BF: Centre-Est	0.58	**												
BF: Centre-Nord	0.64	*												
BF: Centre-Ouest	0.52	**												
BF: Centre-Sud	0.97													
BF: Est	0.71													
BF: Hauts-Bassins	1.08													
BF: Nord	0.65	*												
BF: Plateau-Central	0.62	*												
BF: Sahel	1.01													
BF: Sud-Ouest	0.70													
GH: Western			0.91											
GH: Central			1.77											
GH: Greater Accra			1.65											
GH: Volta			1.06											
GH: Eastern			1.09											
GH: Brong-Ahafo			1.45											
GH: Northern			0.86											
GH: Upper-east			0.96											
GH: Upper-west			1.71											
GN: Boké					0.75									
GN: Conakry					0.49									
GN: Faranah					1.10									
GN: Kankan					1.98									
GN: Kindia					1.19									
GN: Labé					0.45									
GN: Mamou					0.81									
MLI: Kayes							1.06							
MLI: Koulikoro							1.88	**						
MLI: Sikasso							1.63	*						
MLI: Ségou							1.91	**						
MLI: Mopti							1.87							
MLI: Tombouctou							1.55							
MLI: Gao							0.84							
MLI: Kidal							2.20							
NG: North-central									1.27					
NG: North-east									0.82					
NG: North-west									1.06					
NG: South-east									0.61	*				
NG: South-south									0.93					
SN: Ziguinchor											0.83			
SN: Diourbel											0.90			
SN: Saint-Louis											1.62			
SN: Tambacounda											0.42	*		
SN: Kaolack											0.86			
SN: Thiès											1.33			
SN: Louga											0.66			
SN: Fatick											0.97			
SN: Kolda											0.87			
SN: Matam											0.49			
SN: Kaffrine											0.39	*		
SN: Kédougou											0.89			
SN: Sédhiou											0.52			
SL: Eastern													1.35	**
SL: Southern													1.75	***
SL: Western													1.45	**

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

However some bordering regions were found to share similar majority ethnicities. These are shown in Figure 3.11. The comparable regions are show in either light or dark colours. The Region 1 bars in Guinea and Mali refer to the regions of Faranah (Guinea) and Kayes (Mali), in Ghana and Burkina Faso the corresponding regions are Northern and Sud-oest respectively. The region two (darker bars) in Guinea and Mali refer to the regions of KanKan (Guinea) and Koulikoro (Mali), and for Ghana the Upper-east and in Burkina Faso the Centre-Sud region. When examining the probability of contraceptive use for the Malinké/Mandingo ethnicity in Guinea and Mali it appears that region is more important than ethnic differentials and that the ethnic differentials do not seem to cross borders. However, in Ghana and Burkina Faso neither ethnicity nor region appears to be the main determinants of contraceptive use.

Figure 3.10. Probability of contraceptive use in two bordering regions
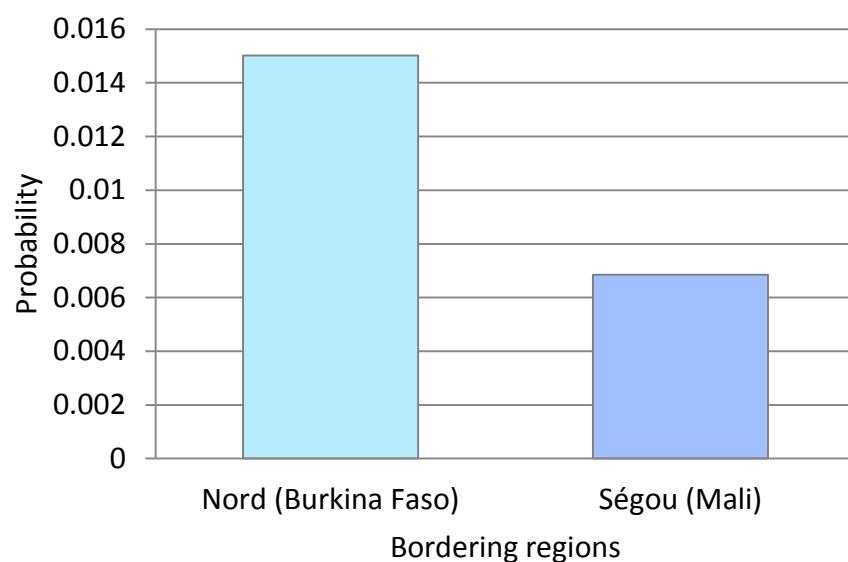
Figure 3.11. Probability of contraceptive use by region, accounting for Malinké/Mandingo ethnicity

Light bars = Region 1   Dark bars= Region 2
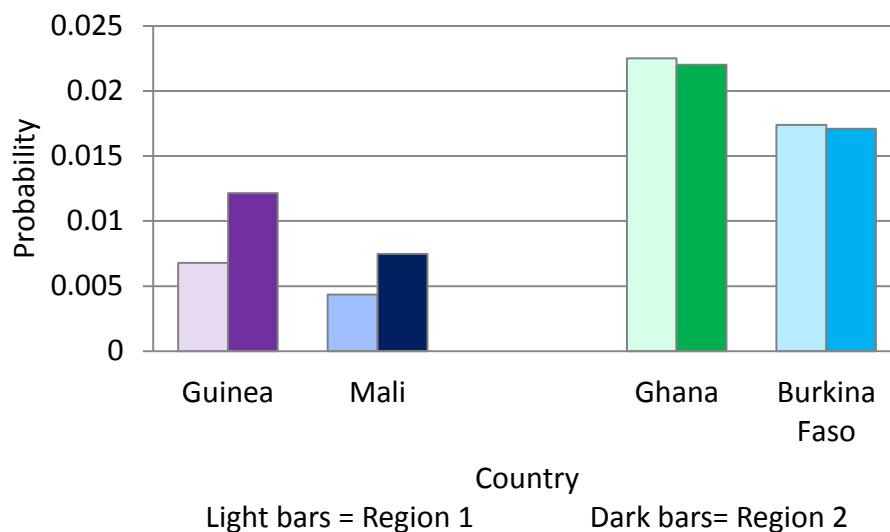
Refusing sex was only significant in Guinea and Senegal but even in countries where it was not significant the odds of contraceptive use were increased (Table 3.22). Not having a co-wife increased the odds of contraceptive use in all countries. This was however only significant in Ghana, Mali, Nigeria and Senegal, where the odds were most pronounced and ranged from increased odds of use of 1.16 in Mali and 1.64 in Ghana.

In Burkina Faso, Mali, Nigeria and Sierra Leone, wanting fewer than five children increased the odds of contraceptive use (Table 3.24). Generally women who responded with a numerical answer for their ideal family size had greater odds of being contraceptive users than those who gave a non-numerical answer. In general women who wanted six or more children or who did not quantify their ideal family size had similar probabilities to be contraceptive users. However in Guinea women who wanted six or more children had much higher probabilities of use than those with a

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Table 3.24. Multilevel models run for each country Value variables

Value variables	Burkina Faso		Ghana		Guinea		Mali		Nigeria		Senegal		Sierra Leone	
	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t
Ideal number of children	Reference: Non-numerical													
2 or fewer	1.93	*	1.19		3.49	*	1.65		1.34		1.66		1.43	***
Three	2.19	**	1.42		1.59		1.63	*	1.89	**	1.79	*	1.70	***
Four	1.59	**	1.10		1.73		1.82	***	1.66	**	1.37		1.91	***
Five	1.21		1.65		1.66		1.70	**	1.27		1.32		1.95	***
6 or more	1.01		1.25		1.37		1.20		1.26		0.87		1.37	***
Desire for more children	Reference: Wants more children													
Undecided	0.93		0.63		5.77	***	2.39	**	1.22		0.52		3.34	***
Wants no more children	1.94	***	1.72	**	3.07	***	2.53	***	2.49	***	2.06	***	2.35	***
Husbands desire for more children	Reference: Husband wants more													
Both want the same	1.71	***	0.90		2.85	***	1.90	***	1.48	***	1.31		0.70	
Husband wants fewer	1.87	***	0.94		1.86		2.62	***	1.34		1.70		1.08	**
Don't know	1.28	*	1.23		1.50		1.59	***	1.11		1.08		0.83	

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

non-numerical ideal. Here we see two patterns which were presented by previous literature. The first is the theory that women who do not state a numerical ideal family size hold traditional values, when their conceptualisation of family formation changes and they are able to quantify their family size they are more open to using contraception. This is seen in Guinea. In the other countries the similar probabilities between these two groups may show that women who want large families and those who feel that their family size will be determined by forces out of their control hold similar values towards contraceptive use.

Figure 3.12. Probability of contraceptive use by country, examining ideal family size
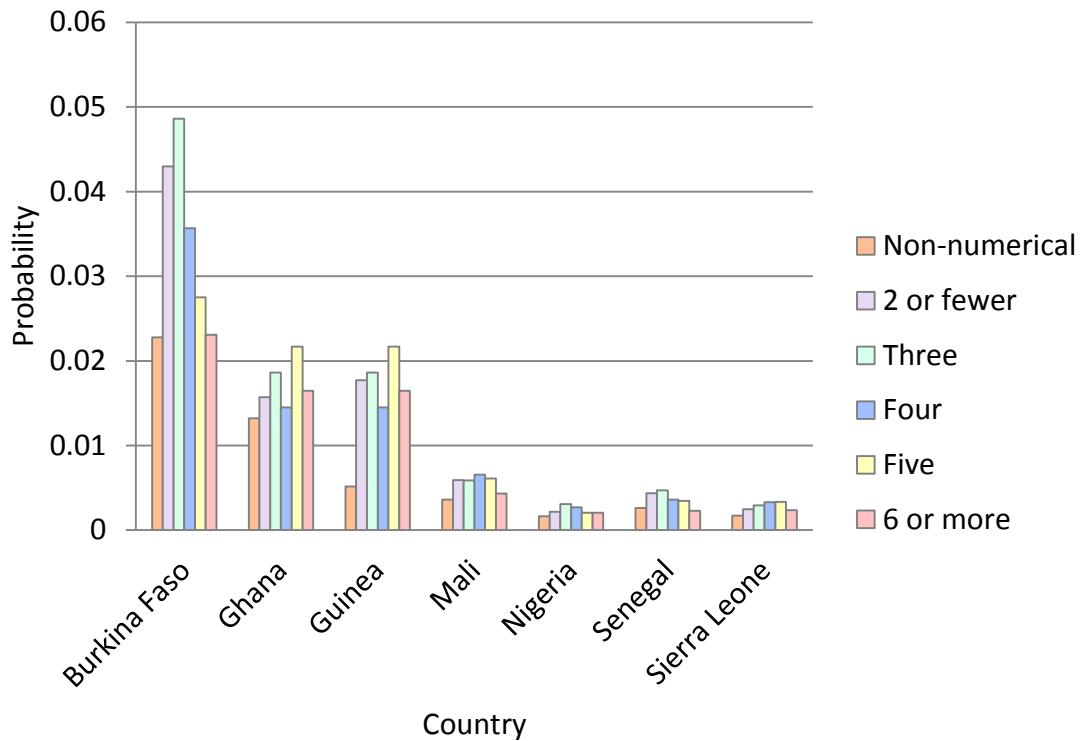
As expected, wanting no more children significantly increased the odds of contraceptive use in all countries. In Ghana, Guinea, Mali and Nigeria women who believed they wanted the same number of children as their husband were significantly

Table 3.25. Multilevel models run for each country Communication variables

Communication variables	Burkina Faso		Ghana		Guinea		Mali		Nigeria		Senegal		Sierra Leone	
	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t	Odds Ratio	P>t
Number of trips outside the home	Reference: No trips													
One	1.01		0.81		1.21		1.15		1.21		0.99		1.21	
2 or more	1.15		1.10		1.26		1.61	***	1.28	**	1.17		1.33	
Radio and television access	Reference: Has no access to general media													
Access to one	1.10		1.25		0.73		1.19		1.03		1.72	**	1.52	*
Access to both	0.91		1.39		0.81		1.22		1.09		2.47	***	1.11	*
Family planning media access	Reference: Has no access to family planning media													
Low	1.23	*	1.01		1.23		1.33	***	1.48	***	0.97		1.40	*
Medium	1.19		1.13		1.66		1.94	***	1.50	***	1.09		1.15	*
High	1.10		0.62		1.86		2.13	***	1.52	**	1.14		1.38	**
Family planning discussion	Reference: Has not discussed family planning with husband or family planning worker													
With one source	2.67	***	12.44	***	1.13		1.25		7.36	***	8.64	***	4.77	***
With more than one source	6.29	***	17.81	***	3.96	***	3.27	***	14.11	***	47.94	***	12.45	***

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

more likely to be contraceptive users. In Guinea this was most pronounced, and women who held this belief were nearly three times as likely to be users.

Figure 3.13. Exposure to family planning discussions and probability of contraceptive use
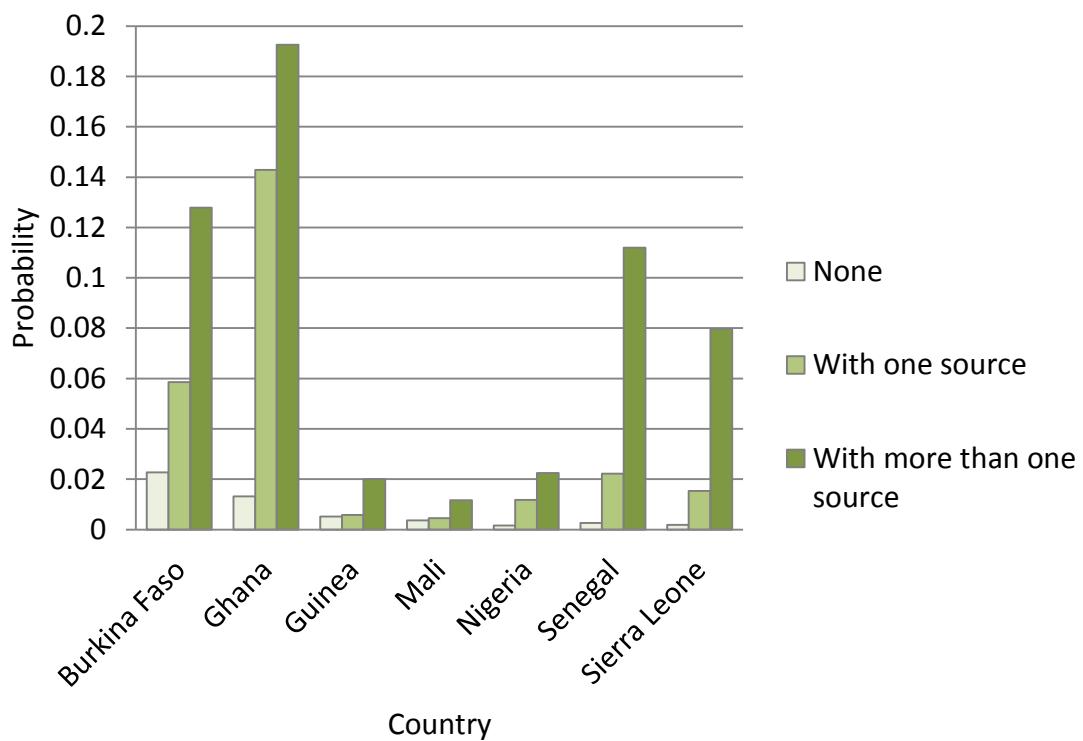
In Ghana discussing family planning with just one source increases the probability of contraceptive use to 14%, whereas in five of the six other countries this level of exposure increases contraceptive use by less than 3 percentage points. Women exposed to more than one source of contraceptive discussion were more likely to be contraceptive users. In Guinea this was most pronounced, and women who held this belief were nearly three times as likely to be users.

Figure 3.13). In Sierra Leone discussing family planning with two or more sources increases the probability of contraceptive use to 8% and in Ghana the increase is more than twice this with the probability of contraceptive use being nearly 20% for women who have discussed family planning with more than one source. There may be two factors at play here; firstly this shows how the probability of contraceptive use is increased across all countries if women have discussed contraceptive use with at least one source. However, in Guinea, Mali and Nigeria this increase is very small.

Secondly this graph may also be showing additional sources of family planning distribution and therefore discussion. The discussion variable collates exposure to family planning discussion with husband, family planning workers in the home and at a health facility. In Ghana and Burkina Faso the larger probability of women to be contraceptive users who had never discussed family planning with either their husband or a family planning worker shows that they must be gaining contraceptive knowledge and the contraceptives themselves from somewhere other than these two sources, as they would have to discuss family planning with the person they are obtaining their contraception from. Interestingly if we look back at Table 3.1 we notice that contraceptive knowledge was highest in these two countries, which supports the suggestion that women are learning about contraception from other sources.

In Mali and Nigeria increased exposure to family planning media messages led to increased odds of contraceptive use. However in Burkina Faso and Sierra Leone exposure of any kind increased odds of contraceptive use, although the increase was not linear with exposure and was only significant for low exposure in Burkina Faso. Exposure to general media messages were only significant in Senegal and Sierra Leone, in Senegal the odds of use were increased as access increased. In Mali and Nigeria women who had undertaken more than one trip in the last 12 months were significantly more likely to have increased odds of contraceptive use.

Not many of the contextual variables were significant when PSU was included as a random effect and subsequently only two were included (Table 3.26). This means that when the random variation between communities was taken into account the

Table 3.26. Multilevel models run for each country control and contextual variables

Control variables	Burkina Faso Odds Ratio	P>t	Ghana Odds Ratio	P>t	Guinea Odds Ratio	P>t	Mali Odds Ratio	P>t	Nigeria Odds Ratio	P>t	Senegal Odds Ratio	P>t	Sierra Leone Odds Ratio	P>t
Age	1.00		0.97	**	1.00		0.97		0.98	*	1.00		1.02	
Number of living children	Reference: Less than two children													
Two-three children	1.85	***	1.47	**	0.88		1.90	***	1.74	***	2.06	***	1.47	*
Four or more children	2.04	***	2.23	**	1.07		3.06	***	2.23	***	2.68	***	1.25	*
Educational attainment	Reference: No education													
Primary	1.49	***	1.46		1.46	***	1.33	*	1.86	*	1.70	***	1.04	
Secondary and higher	1.89	***	2.38	***	2.41	***	1.92	***	1.96	***	2.03	***	1.29	
Residence	Reference: Rural													
Urban	1.06		1.03		1.96		1.77	***	1.14		1.54	*	1.97	***

Contextual variables	Burkina Faso Odds Ratio	P>t	Ghana Odds Ratio	P>t	Guinea Odds Ratio	P>t	Mali Odds Ratio	P>t	Nigeria Odds Ratio	P>t	Senegal Odds Ratio	P>t	Sierra Leone Odds Ratio	P>t
Asset index	Reference: Poorest													
Poorer	1.14		1.09		1.22		1.05		1.28		0.78		1.16	*
Middle	1.47	**	0.86		1.70		1.37		1.39	*	0.75		1.73	**
Richer	1.88	***	0.92		1.45		1.94	**	1.73	*	0.75		1.81	***
Richest	1.70	*	0.82		0.98		1.45		1.67	*	0.74		3.80	***
Mean asset PSU	1.15	**	0.98		1.32	*	1.16	*	1.04		1.05		1.01	
Mean number of children PSU	1.08		1.04		1.15		0.98	**	1.09		1.43	***	1.20	

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

prevalence of polygamy, the average educational level of women in the community, living in a community with a majority ethnicity or religion, and living in a community with a majority exposure to family planning media was not found to be significantly related to the odds of contraceptive use.

In Ghana, Nigeria and Sierra Leone none of the contextual variables were significant determinants of contraceptive use. However in Burkina Faso, Guinea and Mali the mean asset score for PSU was significantly associated with increased odds of contraceptive use. In these countries, a woman who is living in a PSU where there is a higher than average asset score has higher odds of contraceptive use. For example, in Guinea women who live in a cluster that has an asset score a unit higher than the average mean asset score will has odds of using contraception 1.3 higher than a woman who lives in a cluster at the average level.

In Mali and Senegal the average number of living children in the PSU was significantly associated with contraceptive use. In Senegal this was associated with increased odds of contraceptive use whereas in Mali odds of contraceptive use were slightly decreased as the average number of living children increased. This suggests that in Mali for women living in communities with a greater mean number of children their odds of contraceptive use were slightly reduced. Whereas in Senegal, the greater the mean number of children in a PSU the higher the odds of contraceptive use.

Interactions were investigated to see if they explained more of the differences observed between contraceptive users and non-users. However they did not add anything to the models so they were disregarded.

The effect of PSU on the odds of being a contraceptive user in a specific community can be viewed in Table 3.27. The variance between communities is being explored using the standard deviation. , in Burkina Faso, if a woman is in a cluster that has a random effect of -2 SD from the mean then the probability of using contraception is 0.009. Whereas a woman with the same characteristics, but living in a cluster which is 2 SD above the mean, has a probability of using contraception of 0.057, which is 6.4 times greater. In Nigeria the probability of contraceptive use is the lowest, where women living +2 S.D. have a probability of 0.005 of being a contraceptive user. Sierra

Leonean women living in a cluster with a random effect of -2 S.D. are the least likely to use contraception. In Sierra Leone there is the largest inter-cluster level effect, with women living in a cluster with a random effect of +2 S.D. being 19.8 times more likely to be using contraception. However, the overall probabilities of contraceptive use remain low.

Table 3.27. Standard deviation of cluster effect of PSU for all countries

	Standard Deviation (SD) cluster effect	Odds Ratio (-)	Odds Ratio (+)	Probability (-2 SD)	Probability (+2 SD)
Burkina Faso	0.955	0.385	2.599	0.009	0.057
Ghana	0.883	0.413	2.419	0.006	0.031
Guinea	0.978	0.376	2.658	0.002	0.014
Mali	0.690	0.502	1.994	0.002	0.007
Nigeria	1.117	0.327	3.056	0.001	0.005
Senegal	1.180	0.307	3.254	0.001	0.008
Sierra Leone	1.497	0.224	4.467	0.000	0.008

3.6.9.2 All country combined multilevel model

When looking at all the countries using the combined dataset, the three-level random slope model shows previously observed trends with respect to the odds of contraceptive use (Table 3.28). At the regional level however, we are able to draw a few conclusions. The asset index shows that despite the asset score being skewed in some countries across the region as asset score increased so did the odds of contraceptive use. What is interesting to note is that women in the "richest" category did have slightly lower odds of contraceptive use (1.531) compared to those in the "richer" category (1.76). However, as the confidence intervals overlap the difference between these two categories may not be significant. The number of living children and educational attainment led to higher odds of contraceptive use than did place of residence.

When examining the odds of contraceptive use for Value variables across the region it is clear that women who want no more children have elevated odds of contraceptive use. Women who are undecided as to whether or not they want more children also have increased odds of contraceptive use. In the individual country models women from Burkina Faso, Ghana and Senegal in this category displayed decreased odds of

Table 3.28. Multilevel model for all countries, including religion (part 1)

	Odds Ratio	95% Confidence Interval		P>t
Value variables				
Ideal number of children	Reference: Non-numerical			
2 or fewer	1.67	1.32	2.10	***
Three	1.92	1.59	2.32	***
Four	1.68	1.43	1.96	***
Five	1.44	1.23	1.69	***
6 or more	1.17	1.01	1.36	*
Desire for more children	Reference: Wants more children			
Undecided	1.41	1.17	1.69	***
Wants no more children	2.28	2.06	2.52	***
Husbands desire for more children	Reference: Husband wants more			
Both want the same	1.54	1.40	1.69	***
Husband wants fewer	1.64	1.37	1.96	***
Don't know	1.27	1.15	1.40	***
Communication variables				
Number of trips outside the home	Reference: No trips			
One	1.08	0.98	1.19	
2 or more	1.23	1.13	1.35	***
Radio and television access	Reference: Has no access to general media			
Access to one	1.13	1.01	1.27	*
Access to both	1.19	1.01	1.40	*
Family planning media access	Reference: None			
Low	1.28	1.16	1.40	***
Medium	1.41	1.27	1.56	***
High	1.42	1.22	1.65	***
Family planning discussion	Reference: Has not discussed family planning with husband or family planning worker			
With one source	3.86	3.48	4.27	***
With more than one source	10.38	9.30	11.59	***
Control variables				
Age	0.987	0.981	0.993	***
Number of living children	Reference: Less than 2 children			
Two-three children	1.75	1.57	1.94	***
Four or more children	2.24	1.94	2.58	***
Educational attainment	Refernce: No education			
Primary	1.59	1.43	1.76	***
Secondary and higher	1.87	1.66	2.10	***
Residence	Reference: Rural			
Urban	1.351	1.194	1.529	***
Asset index	Reference: Poorest			
Poorer	1.15	0.99	1.34	
Middle	1.51	1.29	1.76	***
Richer	1.76	1.46	2.13	***
Richest	1.53	1.21	1.94	***

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

contraceptive use, which suggests that interesting variances at the country level are being hidden by the all country multilevel model.

At the regional level undertaking one trip outside of the home is not significantly associated with increased odds of contraceptive use which supports the concept that ideas are spread over multiple exposures. General access to mass media was not as significantly associated with increased contraceptive use as exposure to specific family

Table 3.29. Multilevel model for all countries, including religion (part 2)

	Odds Ratio	95% Confidence Interval		P>t
Identity variables				
Can refuse sex	Reference: No			
Yes	1.20	1.11	1.29	***
Has a co-wife	Reference: Yes			
No	1.21	1.11	1.32	***
Religion	Reference: Muslim			
Other religion or none	1.41	0.81	2.46	
Christian	1.68	1.39	2.02	***
Country and religion interaction	Reference: Nigerian and Muslim			
Burkina Faso and other religion or none	0.56	0.29	1.06	
Ghana and other religion or none	1.17	0.52	2.62	
Guinea and other religion or none	1.27	0.38	4.19	
Mali and other religion or none	0.51	0.23	1.10	
Senegal and other religion or none	1.11	0.31	4.00	
Sierra Leone and other religion or none	0.46	0.08	2.77	
Burkina Faso and Christian	0.72	0.57	0.92	**
Ghana and Christian	0.68	0.43	1.08	
Guinea and Christian	0.81	0.44	1.50	
Mali and Christian	1.01	0.64	1.61	
Senegal and Christian	0.83	0.50	1.38	
Sierra Leone and Christian	0.54	0.37	0.78	**
Contextual variables				
Country	Reference: Nigeria			
Burkina Faso	3.27	2.31	4.63	***
Ghana	1.61	0.97	2.69	
Guinea	1.11	0.73	1.67	
Mali	2.55	1.76	3.70	***
Senegal	1.95	1.38	2.74	***
Sierra Leone	1.22	0.78	1.92	
Mean asset PSU	1.08	1.03	1.13	***
Mean number of children PSU	1.11	1.05	1.18	***

	Variance	
	B	SE
Region	0.085	0.022
PSU	0.347	0.033

*** p<0.001 ** 0.001>p>0.01 * 0.01>p>0.05

planning messages when accounting for PSU and regional differences. The odds of contraceptive use were also greater in relation to exposure to family planning media messages. However odds of contraceptive use barely increased between women with "medium" or "high" exposure to these specific family planning messages. Family planning discussions had the greatest effect on the odds of contraceptive use.

From Table.29 we are able to observe that the ability to refuse sex and not having a co-wife are significantly related to slightly elevated odds of contraceptive use of about 1.2. When examining religion it appears that if women in the region did not affiliate with the Muslim religion they had at least 1.4 odds of being contraceptive users. If they identified with the Christian religion they had increased odds of 1.68 that they would be contraceptive users and this was significant to 1%.

The probabilities of contraceptive use were calculated and are presented for different religious groups in Figure 3.14 where they are interpreted with regards to Nigerian-Muslims (the reference population). The probabilities of contraceptive use are highest for Christians in Burkina Faso. Here women are also the least likely to use contraception if they are neither Muslim nor Christian. Similar patterns are seen in Mali but the probabilities are smaller. In Ghana Christian women are less likely to use contraception and there is not much difference between Muslims and people identifying with another religion or no religion. This is only seen in Ghana. In Guinea and Senegal the probability of using contraception is higher among Christians than Muslims and greater among women in the other category than both the named religion categories.

For Burkina Faso, Mali and Senegal women were significantly more likely than Nigerians to be contraceptive users and the odds of use were highest in Burkina Faso at 3.27. At the regional level the mean asset of a PSU was still significant but was only associated with odds of 1.1 of contraceptive use. Similarly the mean number of children in the PSU was also only associated with slightly elevated odds of contraceptive use.

Figure 3.14. Probability of contraceptive use by country and religion
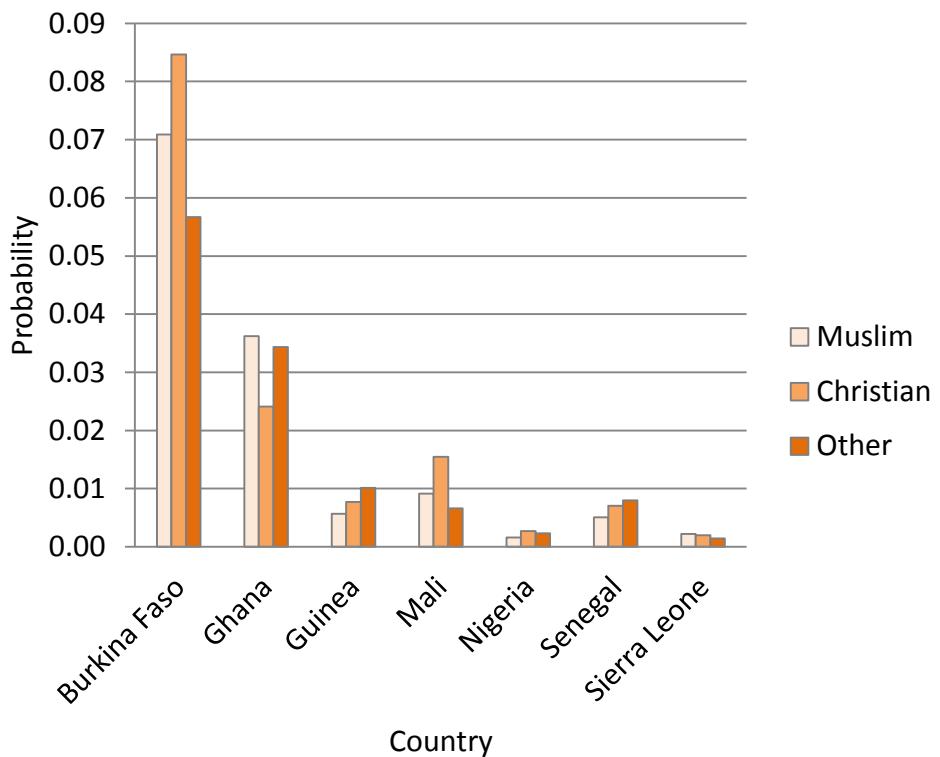
There is significant variation at the regional and PSU level which indicates that women within a PSU or region are more likely to have similar contraceptive behaviour than others in a different PSU or region. This suggests that women are influenced by the women living in their immediate surroundings. Women living in a region one standard deviation above the average region are 1.6 times more likely to be contraceptive users (Table 3.30). Women living in a PSU of standard deviation above average are 1.56 times more likely to be contraceptive users than women living in an "average" PSU.

Table 3.30. Standard deviation for cluster effect of PSU and Region

	S.D. cluster effect	Odds Ratio (-1 S.D.)	Odds Ratio (+1 S.D.)
Region	0.477	0.952	1.612
PSU	0.442	0.874	1.555

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3.7   Limitations

As was highlighted at the beginning of this paper, the base population for analysis has been specifically chosen as only women at risk of pregnancy. Therefore it is necessary to state that the results from this paper may not necessarily be comparable to other studies, which do not have the same base population. It was felt necessary to make this restriction due to the nature of the topic being explored. Fertility desires and contraceptive use are complex subjects, which vary greatly depending on a person's circumstances. Although some may argue that breastfeeding women are at risk of pregnancy the individual may view it differently and this perception of not being at risk could lead to non-use of contraception. Similarly if lactational amenorrhea is being used correctly as a form of birth control this person should not be at risk of conception. However there is no way to tell if the method is being used correctly and so for this analysis it was easier to calculate if women were menstruating or not and to exclude those who were post-partum amenorrheic.

Only women using contraception at the time of the survey were considered contraceptive users. This means that women who may have used in the past but have discontinued for whatever reason are not included in the sample as users, despite their status as being a user at some time in the past (Cottingham, 1997). They may have also just recently stopped using contraception or be trying to conceive. These women, at some point in time, decided to use contraception and they may provide valuable insight into the determinants of contraceptive use.

It may be argued that this paper includes "overly simplistic representations of complex concepts" (Cleland et al., 2011, p.139) in relation to the conceptual framework and the operationalisation of the variables. For example using the PSU as a proxy for a community is not representative of the true community and especially where only a handful of respondents were interviewed a different sample of respondents would provide different community values. Statistically there are also problems with estimation when using a small number of cases. However, no PSU contained too few cases for estimation of PSU-level variables.

Despite the limitations it is necessary to have a framework from which to exemplify an idea and it was felt that this framework adequately encompasses the aspects of sociocultural determinants, from those that can be measured, to those which are felt and only quantifiable by an individual and the mechanisms by which ideals and values are exchanged. Although the DHS addresses fertility and family planning issues the inconsistencies between questions across the seven countries did reduce the possibilities of operationalising the variables. Despite this it was possible to create some strong variables that appear to shed some light on the sociocultural variations in the determinants of contraceptive use for women in the study countries. Similarly PSUs are often used to create community level variables where full-coverage data is unavailable (Stephenson et al. 2007).

3.8 Discussion and conclusions

Across each of the individual models (logistic regression and multilevel), in no country were all the 12 sociocultural elements significant determinants of contraceptive use. However, each country had at least one significant determinant of contraceptive use from each of the three sociocultural categories. Moreover there were two variables which were consistently significant determinants of contraceptive use across the seven countries; desire for more children and exposure to different sources of contraceptive discussion.

The desire for more children variable was used in the context of reflecting Values linked to family planning. Women who wanted no more children had higher odds of contraceptive use than women who wanted more children. The other variables used to operationalise Values, as a group, were the variables most often significantly associated with contraceptive use. However, in Ghana and Senegal husbands desire for more children was not significant. This might indicate higher personal autonomy of women in these countries. Certainly the identity variable; ability to refuse sex, used as a proxy for female autonomy was associated with increased odds of 1.2 in both countries, but of the two it was only significant in Senegal.

With regards to the Communication variables it would appear that in Senegal and Sierra Leone, contraceptive use was significantly increased for women with exposure to general mass media, whereas in Mali women would benefit from specialised family planning messages. Communication efforts between husband and health professionals should continue to be used to promote changes in family planning information. As would be expected the probability of contraceptive use increases when women are exposed to more than one avenue of family planning discussion. What is unclear is whether exposures to sources of discussion are consequences of use, or if they happen alongside use. Although that they are related to increases in contraceptive use has been a common theme throughout this thesis.

Despite having the most number of variables in the group, the Identity category has the fewest variables with a significant association with increased odds of contraceptive use. In four countries ethnic identity was found to be significant. This was in the three Anglophone countries (Ghana, Nigeria and Sierra Leone) and Burkina Faso, although the levels of contraceptive use and significance varied across these countries. Additionally when examined alongside regions with similar odds of use, the probability of using contraception was no longer seen to be due to ethnicity differentials for regions with high levels of the same ethnicity in Ghana and Burkina Faso.

Similar to Stephenson et al. (2007) this chapter identifies that contextual factors must also be considered when exploring sociocultural factors. This is evident through the differences in outcomes from the logistic regressions and the multilevel models. In Ghana, Nigeria and Sierra Leone (the Anglophone countries) the mean asset score for the PSU and the mean number of living children per woman in the PSU were not significant, suggesting that for these countries there may be other factors at the PSU level which are associated with contraceptive use. Despite some similarities between countries colonised by the English, identifying with these countries was not found to be a significant determinant of contraceptive use. This was explored through an Anglophone/Francophone variable, which did not feature in the final model due to it adding nothing to the model. The findings of this paper support the theory that when

analysing hierarchical data, it is necessary to account for contextual differences between clusters, as was also done by Iyer and Weeks (2010).

The purpose of this paper was to investigate the sociocultural determinants of contraceptive use in West Africa and to see how they differ between and within countries. Previously it has been recognised that there is great variation of contraceptive use in this region. From the analysis is evident that the sociocultural determinants of contraceptive use vary significantly among the seven countries explored in this paper. What is clear is that there is no easy formula for research into sociocultural barriers.

Therefore when exploring sociocultural barriers it is recommended that researchers incorporate a variety of variables, with at least one from each of the Value, Identity and Communication sub-categories to gain an initial understanding of which determinants are significant in a particular country or sub-region, as to explore only one or two would not provide a complete perspective. Similarly by only including sociocultural variables which are assumed to be important may risk imposing research bias from assumed significant barriers instead of allowing the data to illustrate the determinants of contraceptive use.

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4. Paper 2: Family planning and contraceptive use: sociocultural barriers and enablers in Saint-Louis, Senegal

4.1   Aims of the study

This paper examines individuals' views and their interpretation of the sociocultural barriers to contraceptive use in the suburb of Pikine and three villages in the commune of Saint-Louis, Senegal. Qualitative methods were adopted as the research questions involve the exploration of the social reality of contraceptive use in a West African community. Although it is not possible to enter a person's mind in order to understand social phenomena, qualitative methods enable access to individuals perceptions, their "interpretations and understandings [with regards to family planning] … revealed in some way" during the interview process (Mason, 1996, p39).

The purpose of this study is to determine sociocultural influences on attitudes and behaviours associated with contraceptive use in Saint-Louis rather than the magnitude of contraceptive use. Firstly a brief overview using data from the DHS in 2012 is used to relate the region of Saint-Louis to the broader context of Senegal. This is done in order to understand how reflective the region of Saint-Louis is of the overall demographic, social and cultural context of Senegal. Subsequently IDIs and FGDs are used "to provide a framework within which respondents can express their own understandings in their own terms" (Patton, 1980) and to comprehend the contraceptive reality in participants' own words (Walker, 1985). A wide scope was chosen to try and understand both the individual and the group perspectives. The data collected through IDIs reflect "individual views and opinions…shaped by the social process of living in a culture" whereas the group data collected in the FGD process reflect "collective notions shared and negotiated by the group"(Berg, 2004, p.138). These may be similar or different and it is hoped that this research will be able to clarify this.

The specific research aims are to:

1. to understand female (group and individual) knowledge, meaning and attitudes towards the use of contraception,

2. to discover the influences on and sources of views on contraceptive use,

3. to determine what motivates the use of contraception,

4. to explore the perceptions of barriers to contraceptive use, and

5. to gain insights of how these barriers can be overcome.

4.2   Choice of study area

This research could have been conducted in any of the countries in West Africa, using any small area as a case study, as it is the individual's interpretation of sociocultural barriers in context which is the focus of this paper. Initially a placement search was carried out by contacting the UNFPA offices in Francophone Africa. The UNFPA have been increasingly investing in augmenting contraceptive prevalence, especially in remote areas (Niang, 2012b). At the community level contact was made in Senegal with Moussa Mane who works for the Association Sénégalaise pour le Bien Etre de la Famille (ASBEF). ASBEF became the host organisation for the project.

A UNFPA Senegal bulletin highlighted family planning issues in Senegal and stated that despite programmatic efforts, family planning in Saint-Louis, a region of Senegal, remained low with only 9.9% of the population using modern contraception in 2007 (Ndoye, 2011). An organization called Luxembourg Development (Lux Dev) helped to implement a decentralisation of family planning in the region of Saint-Louis and they recorded that family planning levels rose to 16.1% in 2011. Initially it was hoped to explore how this intervention had impacted barriers to contraceptive use in Saint-Louis. However it was discovered that this particular intervention was implemented in Matam (which used to be part of the region of Saint-Louis and now is a region in its' own right). Additionally Lux Dev did not have any current projects related specifically

to reproductive health in the commune of Saint-Louis as here they are more focused on the provision of equipment and the establishment of infrastructure.

The choice of Senegal as a study country also enabled a brief quantitative comparison between the population of Senegal as a whole and the population in the region of Saint-Louis using the 2012-2013 Demographic and Health Survey of Senegal (SDHS) to provide a general contextual background for the main part of this chapter. However key analysis of this chapter is carried out using the qualitative research methods of focus group discussions (FGDs) and in-depth interviews (IDIs) in order to better understand motivations and barriers to contraceptive use from the perspectives of both contraceptive users and non-users. Individual interviews were used to explore women's private thoughts about contraceptive use acceptance and barriers. The FGDs investigated whether or not views about barriers to contraceptive use were different when discussed in a social setting.

This research is not only concerned with examining contraceptive behaviours but also with exploring attitudes towards family planning within the identified communities (Brannen, 1992, p.45). The previous chapters have explored the association between contraceptive use and sociocultural barriers as defined by the researcher. This paper will investigate individuals' perceptions of what sociocultural barriers are present and how they believe these can be overcome. It is hoped that such a study can provide insight into which activities provide positive attitudes towards contraceptive use and those areas which can be improved in order to augment the use of contraception and reduce levels of unmet need.

In 1988 the Senegalese government was the first Francophone government to implement a population policy in order to improve the well-being and quality of life for the Senegalese population (Ministry of Planning and Cooperation, 1988). In 2005 they implemented a new Reproductive Health Law which aimed to remove obstacles and constraints to reproductive health which were identified as being related to accessibility and quality of services as well as the existence of sociocultural barriers (Wade, 2005). Senegal therefore provides a good case study to explore issues with

cultural barriers to contraceptive use. ASBEF is an affiliate of the International Planned Parenthood Federation (IPPF), and was established in 1975. It was the first NGO in Senegal to focus on family planning and reproductive health. It opened its centre in 1980 in Dakar and in 1991 a regional branch was established in the suburb of Corniche in the city of Saint-Louis. In 2005 this branch was moved to the district of Pikine (Niang, 2012a). The region of Saint-Louis was chosen for this study in conjunction with consultation from ASBEF. Since 1992 contraceptive use has been increasing across Senegal, however the rate of uptake is not the same for every region (Figure 4.1) and the levels in Saint-Louis remain below the country average according to SDHS data. The easy access and relative safety of the city and surrounding communes also made it an ideal location in which to base this research.

Figure 4.1. Prevalence of modern contraceptive use in Senegal by region, 1992-2012
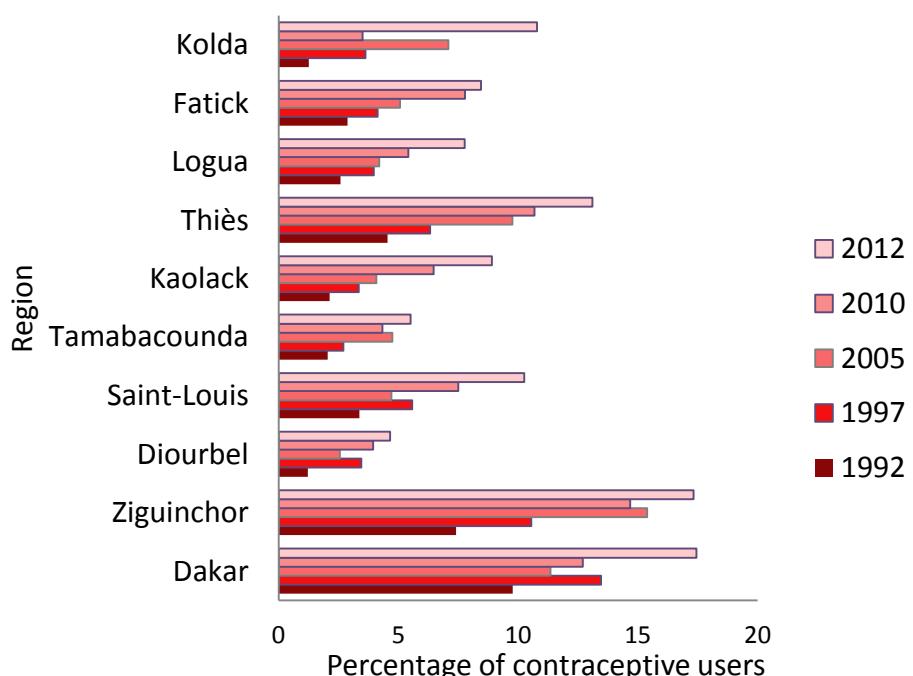
Source: SDHS

4.3   Insights from previous research

Tsui (1985, p.131) suggested that motivation for contraceptive use was "a stronger determinant of use than the inconvenience and cost of distance". This research will investigate the motivations which are conducive to the use of contraception in Saint-Louis, Senegal. It will explore the role of barriers which stop women who could benefit from contraceptive use from doing so. Previous qualitative studies have been carried out to investigate motivations for contraceptive use and this section will discuss the findings of such research.

Through structured interviews Onwuzurike and Uzochukwu (2001, p.83) investigated knowledge, attitude and practice of family planning in urban Nigeria and found that "the socio-cultural influence of men on their wives is a major stumbling block to the use of modern family planning in this part of Nigeria". This finding was similar to that of Mugisha and Reynolds (2008), through carrying out focus groups with service providers in Uganda, where community and social factors such as male participation, financial constraints, misconceptions and leadership support were identified as barriers to quality services. This research also highlighted that men can sometimes force women to use contraception as well as women using contraceptives in secret from their husbands, if they oppose (Mugisha and Reynolds, 2008).

Sanogo et al. (2003) researched quality of care and reproductive use in Senegal. Through interviews with contraceptive users it was found that provider client exchanges were critical to the evaluation of the type of care and hopefully would address the rumours and misconceptions that would dissuade contraceptive use. Quality of care is not explored specifically in this thesis but it may be touched upon during the discourse as participants in IDIs and FGDs are asked to discuss their experiences of family planning facilities.

In 1985 Nichols carried out interviews in Dakar with contraceptive users and discovered that most women became interested in family planning after their first birth. Barriers to contraceptive use were seen as lack of knowledge, the opposition of

husbands and religious beliefs and the best means of accessing contraceptive information was noted as broadcast media (Nichols et al., 1985).

More recently Foley (2007) conducted focus groups and interviews with contraceptive users in northern Senegal, more specifically in the suburb of Pikine, Saint-Louis. Family planning was no longer seen as a taboo subject, with many related terms being used in day to day conversations, however the desire for large families dominates and women remain anxious about using contraceptives (Foley, 2007). Over 20 years after the study by Nichols et al. (1985) "it is still unimaginable for a newly married woman to use contraception before the birth of her first child" (Foley, 2007, p.335).

4.4   Overview of Senegal

There have been many archaeological finds in Senegal suggesting that it was quite populated even 500-1,000 years ago (Pison et al., 1995). In 2010 the population of Senegal totalled 12,509,434 inhabitants (Agence National de la Statistique et de la Demographie, 2011). It is a country rich with international influences, starting with the Arab traders arriving from the north and then the Portuguese (the first Europeans to explore Senegal), followed by the French, the Dutch and the British. The French domination of West Africa started around 1840 when they had control of Senegal: they used this country as a base from which they went on to colonise many other countries in West Africa. Senegal gained independence from France in 1960 but it has since retained close ties with France (Pison et al., 1995).

Senegal is the most western country in the continent of Africa. Covering an area of 196,722 km^2 (Central Intelligence Agency, 2013), it is bordered by Mauritania in the north, Mali to the east and Guinea and Guinea Bissau in the south. The Gambia is nestled in Senegal on the west and the Atlantic Ocean surrounds the rest of western Senegal. It is characterised by three main climatic zones; forest in the south, savannah in the centre and semi-desert in the north. The country experiences two main seasons: the dry season is from November to May and the rainy season from June to October.

Figure 4.2. Regional divisions of Senegal

There are 14 regions in Senegal; the largest is Tambacounda which covers 42,364 km2 (Figure 4.2). The regions of Kaffrine, Kédougou and Sédhiou were only created in 2008. Therefore as the data in Figure 4.1 spans this date the levels of contraceptive use were not given for these three new regional divisions. The regional capitals share the same title as their corresponding regions. The country is then divided into 45 districts and 103 municipalities; rural communities and villages, with villages being the lowest administrative level. An authority is assigned to manage at every administrative level. Each region has a governor and a president of the regional council, who function at the regional level. There is then a prefect and sub-prefect for each district, a town mayor, a president of the rural community and at the most peripheral levels are the village or neighbourhood chiefs. Saint-Louis is the fourth most populated region, with a population density of between 20-75 persons per km^2 (ANSD, 2011).

The GDP per capita for Senegal was $2,269 in 2013 (World Bank, 2014). Compared to other African countries, Senegal has very low levels of natural resources; fishing and tourism are the main sources of income. The main cash crop is groundnuts and the groundnut crisis (the depleting value of the groundnut) has greatly reduced agricultural contribution to the economy. Overfishing and increasing energy costs are affecting the fishing industry, yet it remains a key economic sector. Due to its political stability and geographical location Senegal is one of Africa's most industrialised nations. Since 2005 the government has been focused on modernising agriculture and developing the food industry. About 9% of the GDP is made up of remittances from Senegalese living abroad (ANSD, 2011).

4.4.1   Demographic overview

According to the Agence National de la Statistique et de la Démographie (ANSD) 40.7% of Senegalese live in urban areas and 59.3% in rural communities (ANSD, 2011). However the national average hides the unequal distribution of urbanisation by region. Saint-Louis has an urbanization rate which is slightly higher than the national average. The average age of the Senegalese population is 22 years, it has a very youthful population with 64% aged less than 25 years and about 15% of the population aged between 0 and 4 years (ANSD, 2011).

The dominant religion in Senegal is Islam (94%). Christians make up the second largest religion (4%) and the remaining 2% of the population follow animism and other religions (ANSD, 2012). There are over 20 different ethnic groups in Senegal, however 90% belong to five dominant ethnic groups: Wolof (43%), Peulh(24%), Serer (15%), Diola (5%) and Mandingue (4%) (ANSD, 2012). Each ethnicity has a different language but interethnic communications are facilitated by the similarities of languages from related linguistic groups. Gellar (2005, p.125) found that "individuals from ethnic groups migrating to areas dominated by another ethnic group often adopted the patronymics prevalent among the host community…becom[ing] integrated into the majority culture".

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4.4.2 Reproductive health and family planning overview

Senegal is divided into 75 health districts, across these there are 24 hospitals, 78 health centres and 1195 health posts (Daff, 2011). The crude birth rate for Senegal was 38.3 births per 1000 women in 2010 and this had not decreased much since 2002 (40 per 1000) a situation which is reflected in the low decrease in the total fertility rate, which was 5 children per woman in 2010 (ANSD, 2011). Infant mortality dramatically decreased from 61 per thousand in 2005 to 47 per thousand in 2010. Infant mortality has decreased nationally but more significantly in urban areas (ANSD, 2011).

Contraceptive use has been increasing although it remains low with only 12.3% of married women using modern methods of contraception in 2010 (ANSD, 2011). Amongst married women, 21% (of which fewer than 1% are sterilised) wish to have no more children and 38% of the women who wish to have more children would like to wait at least two years. The Agence National de la Statistique et de la Demographie (2011) recognise that unmet need in Senegal is high due in part to social barriers and pro-natalist social values which prevent women from seeking family planning services.

Since 2007 family planning became decentralised, this process was aided by the UNFPA, Lux Dev and other local organisations. Despite national initiatives the regions of Saint-Louis and Matam had lower contraceptive use levels than the national average (Ndoye, 2011). Further interventions were implemented in these regions, which included educating health workers, ensuring the provision and accessibility to modern contraceptive methods and sociocultural elements such as creating women's groups, the inclusion of religious leaders and community members and the provision of a radio programme in the local languages. Contraceptive use subsequently increased in both regions; however this increase was more pronounced in Saint-Louis and has resulted in the current contraceptive use in this region being greater than the national average. (This is not shown in Figure 4.1 as figures from Matam and Saint-Louis for 2012 were combined to make them comparable to the previous years, as these two regions were one and the same until 2002).

4.4.3 General cultural overview

The Senegalese have a strong history of storytelling, which is done by *girots* (Tang, 2006) through words and music. Wrestling is the national sport of Senegal, it dates back many centuries and it is not uncommon to find posters of famous wrestlers on bedroom walls. In business, punctuality is regarded as important, whereas social engagements are less prompt and can often start hours after the appointed time. This was particularly evident during the data collection period of this research as despite organising focus groups for specific times women would take their time when gathering.

The importance of religion can be seen in the incorporation of religious practices such as prayer amongst everyday activities. It was not uncommon for women to delay the commencement of focus groups in order to pray. Despite their acceptance of the Islamic faith many Senegalese practice traditional religions, marked by superstition, alongside Islamic beliefs. Muslim traditions and beliefs play a major role in Senegalese society, yet even devout Muslims may "incorporate elements of traditional indigenous beliefs into their daily lives" (World Trade Press, 2010). A common practice in Senegal is the wearing of gris-gris amulets which contain passages from the Quran, surrounded by leather pockets, this practice comes from traditional beliefs which have been incorporated into Islam, as they are now prescribed by marabous (mediators between people and the spirit word) to ward off evil and invite good fortune (World Trade Press, 2010). The gris-gris can also be worn as a form of traditional contraception and will be discussed a few times in the results, as it was mentioned by some of the participants.

The model presented in Figure 4.3 provides a conceptualisation of how sociocultural barriers may impact individual decisions to use contraception. This paper will explore the three avenues of Values, Identity and Communication at the local level in Saint-Louis Senegal. In order to try and avoid sociocultural assumptions women will be asked about their Values in relation to children and family size. Women will be asked for their ethnicity and the influence of religion and other members of the community will explore the Identity element of sociocultural factors. Avenues of communication will

also be explored through questions about the sources of initial introductions to family planning, about discussion among community members, etc. These in turn will help to answer the research aims, providing understanding about where knowledge is gained and the meanings and attitudes of women in Saint-Louis towards contraceptive use. It will bring to light the motivations of women to use contraception and the influences of different avenues of communication on their decision to use. Through this the barriers to contraceptive use will be evident and the opinions of individuals as to how these barriers can be overcome will be sought.

Figure 4.3. Conceptual model of influences on individual contraceptive behaviour
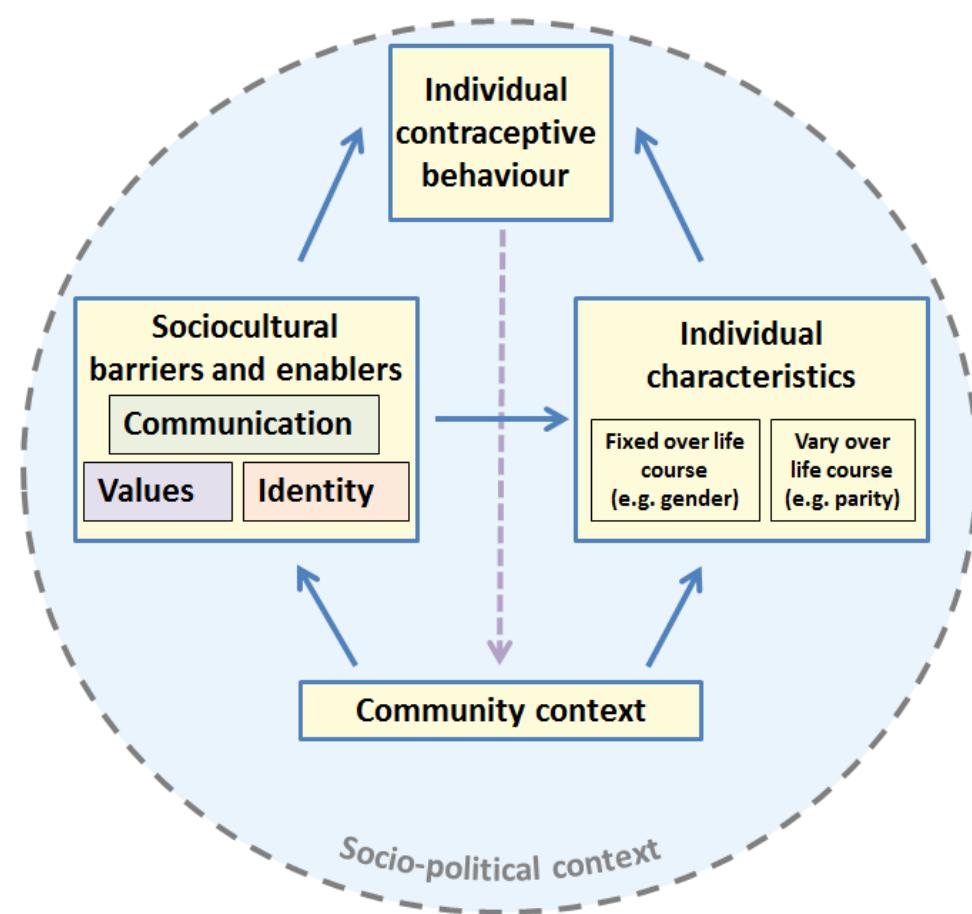
4.5 Contextualising the study setting

As was said in the introduction, this study could have been conducted in any setting in West Africa as the aim is to understand what is going at the local level with regards to contraceptive use and sociocultural factors. However the region of Saint-Louis provided an interesting area for this investigation due to various factors. It is characterised by poverty and the lack of an efficient healthcare system (Lux Développement, 2009). There are five districts in the region of Saint-Louis; Richard Toll, Dagana, Pété, Podor and Saint-Louis. In 2009 the region of Saint-Louis had a total population of 861,392 (Lux Développement, 2009) and the total population of the commune of Saint-Louis was 201,315 in 2010 (Doumbouya, 2012).

Before exploring the region of Saint-Louis it is necessary to understand how it compares to the country of Senegal. Therefore the SDHS 2012 was used to explore different sociodemographic, family planning and sociocultural indicators to see how the region of Saint-Louis compares to the country as a whole. They are presented as the percentage of the population in each category.

Table 4.1. Sociodemographic landscape of Senegal and Saint-Louis

Socio-demographic factors		Senegal	Saint-Louis	Socio-demographic factors		Senegal	Saint-Louis
Age	15-19	23.3	25.7	Educational attainment	No education	54.8	46.1
	20-24	20.6	20.0		Primary	22.5	28.0
	25-29	17.8	18.1		Secondary	20.8	24.7
	30-34	13.3	11.3		Higher	1.9	1.2
	35-39	10.5	9.8	Husband's/ partner's educational attainment	No education	45.5	47.3
	40-44	7.6	7.8		Primary	6.6	9.0
	45-49	6.7	7.3		Secondary	6.3	4.2
Marital status	Never married	30.8	33.3		Higher	2.0	2.2
	Married	63.9	61.5		Don't know/missing	39.5	37.2
	Other	5.3	5.1	Religion	Muslim	96.5	99.6
Ethnicity	Wolof	38.5	37.0		Christian	3.4	0.4
	Peulh	27.5	51.2		Other	0.1	-
	Serer	16.1	1.4	Number of living children	No children	38.0	38.6
	Mandingo	4.0	1.0		1	12.8	12.5
	Diola	3.6	-		2	11.9	11.7
	Soninke	2.5	-		3	10.6	10.4
	Not Senegalese	2.0	0.4		4	8.2	7.9
	Other	5.9	8.9		5	6.6	6.2
Residence	Urban	45.8	42.1		6	5.0	3.7
	Rural	54.1	57.9		7	3.3	4.2
					8 or more	3.8	4.5

The initial analysis (Table 4.1) shows that although Saint-Louis has a slightly larger proportion of people aged over 30 years relative to Senegal the age structures for both the country and region are similar. Since 2010 urbanisation has increased and, although Saint-Louis does not have the same levels of urbanisation as the country as a whole, rural populations still make up over 50% for both country and region. Despite these similarities Saint-Louis has a higher percentage of Muslims and the Peulh ethnicity is also greater than at the national level. Saint-Louis had more respondents with secondary education or higher whereas partners in Saint-Louis had lower educational attainment compared to the national level. It must be noted however, that for partner's educational attainment there was a high proportion of missing or answers related to not knowing and therefore it may not reflect true educational attainment for males. The number of living children reported by women was similar for both the country and region; however in Saint-Louis a slightly higher proportion of women had seven or more children.

Table 4.2. Family planning landscape of Senegal and Saint-Louis

Family planning indicators		Senegal	Saint-Louis
Contraceptive use	Using modern method	11.4	12.9
	Using traditional method	1.2	0.7
	Non-user intends to use later	24.9	26.7
	Does not intend to use	62.5	59.8
Heard family planning on the radio	No	74.8	75.9
	Yes	25.7	24.1
Heard family planning on TV	No	70.2	74.3
	Yes	29.8	25.7
Knowledge of any method	No method	9.5	3.3
	Only folkloric or traditional	0.5	0.5
	Knows modern method	90.0	96.2
Visited by family planning worker in last 12 months	No	91.9	93.9
	Yes	8.1	6.1

Family planning indicators related to the use of contraception and exposure to family planning were also explored (Table 4.2). Saint-Louis has a slightly higher proportion of modern contraceptive users and women who intend to use in the future relative to

Table 4.3. Sociocultural landscape of Senegal and Saint-Louis

Sociocultural factors		Senegal	Saint-Louis
Discussed Family planning	Not at all	79.7	82.2
	With one source	12.4	11.7
	With more than one source	7.9	6.0
Desire for more children	Wants more	82.3	82.7
	Undecided	1.1	3.2
	Want's no more	14.7	11.5
	Declared infecund	1.9	2.5
Radio and TV access	No access	12.5	12.3
	Access to one	40.7	46.7
	Access to both	46.8	41.0
Number of trips in last 12 months	None	36.9	49.7
	One	33.9	32.7
	2 or more	29.2	17.7
Has a co-wife	Yes	32.4	31.1
	No	67.7	68.9
Husband's desire for children	Both want the same	10.0	12.4
	Husband wants more	27.2	43.6
	Husband wants fewer	1.5	1.5
	Don't know	61.2	42.5
Ideal number of children	2 or less	3.3	5.7
	3	8.5	10.8
	4	22.0	23.4
	5	18.9	15.3
	6	16.6	14.9
	7 or more	18.1	11.5
	Non-numerical	12.6	18.2
Ideal number of boys	0	5.9	0.6
	1	4.4	6.6
	2	26.4	30.2
	3	27.1	28.0
	4	14.8	10.1
	5 or more	7.9	4.1
	Non-numerical	12.7	18.3
Ideal number of girls	0	6.4	1.2
	1	14.7	21.2
	2	39.6	36.6
	3	17.2	13.8
	4	6.2	5.4
	5 or more	3.2	3.5
	Non-numerical	12.7	18.3

Senegal as a whole. The media exposure to family planning is very similar for radio exposure but slightly fewer respondents in Saint-Louis have been exposed to family planning messages on the television and in the region marginally fewer women have been visited by a family planning worker. Knowledge of modern contraceptives is higher in Saint-Louis as 96% of women knew of a modern method of contraception.

The sociocultural variables were chosen to understand their fertility ideals, exposure to new ideas through various communication avenues and their marital situation with regards to polygamy (Table 4.3). Few women think the ideal number of children is fewer than four, showing that a large family is still desired in Senegal. However women in Saint-Louis did express slightly higher desires for two and three children than were expressed at the national level. About one fifth of women believe you cannot attribute a numerical value to the ideal number of children; this is slightly higher for women in Saint-Louis than for the entire country. Women in Saint-Louis were more likely to feel their husbands wanted more children than they did, yet they were just as likely to desire more children as were women in the country as a whole.

Women in Saint-Louis undertook fewer trips outside the home and although this lack of exposure to new or different behaviours has not affected their knowledge of contraceptive use it may contribute to the higher levels of non-numerical ideal family size, whereby women believe it is not their choice but the will of God which determines the number of children they will have. These more traditional views related to family size are also reflected in the much lower desire for zero boys or zero girls in the region of Saint-Louis, where 2-3 boys and 1-2 girls were generally desired. Levels of polygamy, family planning discussion and access to TV and/or radio were very similar at both the national and regional level.

A logistic regression was run in order to explore which demographic, family planning and sociocultural factors are significant predictors of contraceptive use (Table 4.4) in the region and the country as a whole, to see what similarities and differences there are. It was found that so few people are not Muslim in the region of Saint-Louis that religion would not be able to be explored further. Additionally it was decided to

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exclude partners educational attainment from the logistic regression as so many people said they did not know the answer to this.

Table 4.4. Logistic regression for contraceptive use in Senegal and Saint-Louis

	Senegal				Saint-Louis			
	Odds Ratio	P value	(95% Confidence Interval)		Odds Ratio	P value	(95% Confidence Interval)	
Age	1.29	0.00	1.11	1.49	1.56	0.04	1.02	2.37
Age^2	1.00	0.00	0.99	1.00	0.99	0.04	0.99	1.00
Marital Status	Reference: Married							
Other	0.06	0.00	0.01	0.24	0.02	0.00	0.00	0.24
Ethnicity	Reference: Peulh							
Other	0.90	0.55	0.64	1.27	0.85	0.83	0.19	3.76
Wolof	1.04	0.81	0.76	1.43	2.68	0.06	0.96	7.52
Residence	Reference: Rural							
Urban	2.37	0.00	1.78	3.15	0.97	0.95	0.39	2.44
Educational attainment	Reference: None							
Primary	1.48	0.01	1.08	2.02	1.38	0.47	0.58	3.27
Secondary or higher	1.14	0.56	0.73	1.78	0.49	0.37	0.10	2.39
Number of living children	Reference: Two or less							
3-4 children	1.29	0.17	0.89	1.87	1.43	0.49	0.52	3.93
5 or more children	2.31	0.00	1.48	3.60	1.59	0.46	0.47	5.33
Family planning media exposure	Reference: None							
Low	1.08	0.62	0.81	1.44	0.49	0.12	0.20	1.19
High	0.84	0.35	0.59	1.21	0.89	0.84	0.27	2.93
Family planning discussion	Reference: No dicussions							
Has discussed	44.16	0.00	30.91	63.09	70.28	0.00	25.83	191.24
Radio and TV access	Reference: None							
Access to one	0.81	0.32	0.54	1.23	1.11	0.87	0.30	4.09
Access to both	1.29	0.23	0.85	1.97	2.04	0.28	0.55	7.54
Desire for more children	Reference: Wants more children							
Other	0.99	0.98	0.46	2.12	1.81	0.38	0.49	6.68
Wants no more children	0.83	0.41	0.54	1.29	0.88	0.85	0.25	3.12
Husbands desire for more children	Reference: Husband wants more							
Both want the same	1.70	0.00	1.20	2.41	1.65	0.36	0.56	4.85
Other	1.18	0.29	0.87	1.58	1.17	0.77	0.40	3.43
Number of trips outside the home	Reference: None							
One	0.86	0.33	0.64	1.17	1.58	0.29	0.67	3.72
Two or more	0.99	0.94	0.72	1.36	1.56	0.44	0.51	4.78
Has a cowife	Reference: Yes							
No	1.66	0.00	1.23	2.25	1.70	0.27	0.66	4.37
Ideal number of children	Reference: Non-numerical							
2 or less	1.36	0.20	0.85	2.19	0.64	0.52	0.17	2.45
3-4 children	1.19	0.44	0.76	1.88	0.56	0.37	0.16	1.99
5 or more children	0.58	0.04	0.35	0.97	0.39	0.23	0.08	1.81

As would be expected the use of contraception significantly increased with age and women who were not married were highly unlikely to be contraceptive users. Although ethnicity was not related to contraceptive use for Senegal as a whole, identifying with the Wolof ethnicity led to significantly increased odds of contraceptive use, compared to those in the Peulh ethnicity, in the region of Saint-Louis. Although

many of the sociocultural factors were significantly related to contraceptive use for Senegal, only family planning discussion lead to significantly increased odds of contraceptive use in Saint-Louis. This highlights that, although Saint-Louis has a similar demographic structure to Senegal, the barriers and enablers to contraceptive use in this region are not the same as when the country is explored as a whole.

4.5.1   District of Saint-Louis

As with the rest of Senegal the region of Saint-Louis is divided into districts, municipalities, rural districts and rural communities. The district of Saint-Louis is relatively urbanised and fishing and tourism are the main economies in the city. In the rural municipalities salt production and agriculture are the predominant sources of income (Kone, 2012). The dominant ethnicity across all the study sites is Wolof and the main religion is Islam. This research will be undertaken at the lowest possible administrative level, within the commune of Saint-Louis and the rural community of Gandon. The project will be based from the ASBEF centre in the neighbourhood of Pikine, situated on the periphery of the commune of Saint-Louis. The other study sites are the villages Bekhar, Gandon and Ngaye Ngaye. They are situated in the rural community of Gandon, which comprises 53 villages and had a total population of 35,108 in 2010 (Doumbouya, 2012). Family planning is organised at the regional level in Senegal (Naham, 2012).

In order to understand the hierarchical healthcare system in Saint-Louis, a report from Lux Développement (2009) was consulted. At the very local level there are 'cases de santé' which may be translated as first aid posts. In 2008 the region of Saint-Louis had 131 functioning first aid posts. Of these 26 were in the district of Saint-Louis. At the district level there were also eight non-functioning first aid posts in Saint-Louis. This meant that they were unstaffed and were no longer operating as first aid posts.

Health posts are the next level up from first aid posts. Saint-Louis had only 16 health posts in 2008, the lowest number per district in the region. Of these, only ten had

maternity facilities. Across the district there were 16 nurses and eight midwives working at various health posts. There were two health centres in Saint-Louis district, neither of which had a centre for recuperation and nutritional education (CREN). There was also one hospital in the region which is located in the district of Saint-Louis. Six midwives and four nurses worked across these two health centres in 2008 and the district of Saint-Louis had the highest number of midwives working at the various health facilities compared to the rest of the region, where across the four other

Figure 4.4. Map of the rural community (zone) of Gandon painted on the wall of the health post

districts there were only nine other qualified midwives. There were 65 traditional birth attendants working in the district of Saint-Louis throughout the various health facilities at this time.

In Senegal if a person falls ill and they live in a rural community they may go to the health point or the health post. If they are unable to get the medical care they need there they will be taken or referred to either the health centre or the hospital. The rural commune of Gandon has a health post and there is a health post in Pikine. The study site of Ngaye Ngaye has a health point, which is identified in Figure 4.4 by the red arrow. The fourth study site of Bekhar does not have any health facilities, however it is the village adjacent to Ngaye Ngaye.

4.5.2   Gandon Health Post

The health post in Gandon is one of the 16 health posts. It employs one head nurse/midwife, two assistants, a matron, 2 agent de santé communautaire (ASC is the French acronym for community based distributor)) and a medical dispenser. The matrons undergo a six month long training to be able to work alongside the midwives, they also undertake some basic medical activities. Midwives are regarded as the head

nurses, in charge of the health post in this district. The aim was to train 15 new midwives by 2011, of this target seven new midwives were trained at the district level (Seck, 2011). The training was provided by CEFOREP, a west African organisation based in Dakar, who provide training activities in all aspects of reproductive health (Lux Développement, 2009).

Figure 4.5. Health post at Gandon, Saint-Louis

4.6   Family Planning in Saint-Louis

Many family planning communication activities have been implemented in the region of Saint-Louis by the Région Médicale, a branch of the government who are responsible for medical activities at the regional level in Senegal. These include causerie which are group discussions and can be held on any topic and are common dissemination methods in Senegal. Individual counselling is provided by ASBEF centres, health staff at various health facilities and bajenoux gox, women who promote family planning remotely in villages. Mme Naham, the regional reproductive health coordinator for the Région Médicale of Saint-Louis, also mentioned that there is a regular program on the regional radio station promoting family planning and reproductive health (Naham, 2012). They also rely on social monitoring whereby they hold music and discussion events, gathering young and old and providing a forum where they can discuss with professionals. Through these activities they raise awareness in a semi-formal setting, providing food, drink and promotional gifts (such as t-shirts). These events are not undertaken often due to the financial contribution needed to run them.

Religion was identified by Mme Naham as the primary obstacle to contraceptive use in the region. At the regional level they hold meetings, conferences and seminars with Imams to educate them about maternal mortality and the links with family planning. They try to raise awareness of the health benefits for women and encourage Imams to promote use among their congregations. When asked about ethnic differences in contraceptive use Mme Naham felt that women from the Peulh ethnicity were very religious and associated family planning with female genital mutilation and that these barriers which would need to be addressed to encourage them to use contraception in the future (Naham, 2012).

In light of the presence of multiple activities in the particular sites which were chosen, rather than focussing on the successes of one intervention it was decided to find out how family planning was viewed and received by individuals and the community in general.

4.6.1   Association Sénégalaise pour le Bien-Etre Familial (ASBEF)

There has been a regional branch of ASBEF in Pikine since 2005. The tag-line for the organisation is "ASBEF, un partenaire pour la vie", which means "ASBEF, a partner for life". ASBEF do not want to be seen as providing services for any one type of person. Its vision is to enable access to sexual and reproductive health services for individuals, families and communities. Its mission is to encourage youth to take charge of their sexual and reproductive health, to offer high quality services and to promote equal and balanced relationships between men and women (ASBEF, 2011).

As a result ASBEF centres provide healthcare for men and women seeking family planning advice, women who are pregnant and couples who are having trouble conceiving. In terms of contraception, originally ASBEF provided the pill, the injection, IUD, condoms as well as contraceptive gel and vaginal tablets. Currently it no longer offers the contraceptive gel or vaginal tablets but it has also started providing the implant. It does not offer sterilization to women seeking to stop having births completely; instead it counsels women to think about the alternatives. According to Mr Niang (2012a) one of the reasons for discouraging sterilisation is that nowadays

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divorce is more common, due to the changing environment of marriage, which has shifted from being family and community orientated to having a more couple centred perspective. This instability means that although a woman may wish to no longer have a child in her current relationship, if she were to marry again her desires may change, and thus sterilisation would not be a good solution for her. He stated that "For us [ASBEF] a method is only efficient if reversible. Family planning is a choice dictated by context and situation. To use a method that stops the provision of children is no longer a form of planning it is a stopping" (Niang, 2012a).

Using the ASBEF clinic records from 2011 we know that there were a total of 5796 visits made to the ASBEF clinic, of these 374 were new family planning clients and 354 clients used the services as they were having problems conceiving. Over the year ASBEF carried out 1497 ultrasound scans and saw 454 women who had high-risk pregnancies (Niang, 2011). This highlights the diversity of the clientele of the clinic and helps us to understand the multiple areas in which they are involved with regards to improving reproductive health.

In 2011, 442 clients adopted new methods of contraception, of whom 68 clients changed their method of contraception during the year. Method switching is key to individual satisfaction and this is not uncommon, as users become more informed or their needs change (Bruce, 1990). During this period the pill was taken up by 153 clients, the injection by 134 and the implant by 117 clients. Only 26 clients decided to use the IUD and only 12 chose to use the condom during this time. More women complained of side effects when using the injection or the pill (94 and 71 women respectively) compared to those using the implant (11 women).

4.6.2 Bajenu Gox

The Bajenu Gox (BG) initiative was launched in 2009, it provides a community response to reducing maternal and infant mortality through female leadership. The BGs take on a voluntary role among the community. They are dynamic, influential women

recognised by the community as female leaders. They are interested in community development and have the time and motivation to promote family health among their community. The recent increases in contraceptive use and the general levels of contraceptive knowledge have been attributed to the Banjenu Gox scheme, alongside the other activities employed by the Région Médicale (Ndoye, 2011).

According to the Regional Reproductive Health Report for Saint-Louis 140 women were enrolled onto the BG program and subsequently trained, the original target was 279 women and the UNFPA have pledged to train an additional 50 BGs (Seck, 2011). The training is over a two day period, in which women are introduced to various aspects of maternal, new-born and infant health (Naham, 2010). The Ministry of Health for Senegal identified the major problem with the BG program as finance for the training of the remaining 89 BGs, to reach the projected target. Additionally they found that the lack of a participation booklet for training the BGs and the absence of management tools to execute their activities were stumbling blocks for effective implementation of this programme (Seck, 2011).

4.7   Methods

The qualitative methods of FGDs and IDIs will be used to gather information on motivations for the use and non-use of family planning services in Saint-Louis, Senegal. The use of contraception has been identified as being both related to individual motivation and a response to the social context, and it was felt that these two methods would help to understand motivations on both levels. The quantitative analysis of Saint-Louis has provided a basic understanding of the determinants of contraceptive use in the region (section 4.5). The qualitative analysis will help us to understand the subjective reality in which these women live (Mason, 1996), through the in-depth exploration of the sociocultural barriers to contraceptive use from the perspective of the women themselves.

Qualitative IDIs were chosen for data collection in order to understand the underlying processes related to family planning acceptance and contraceptive use. The motivation

was to gain an understanding of how women approach and view contraceptive use and decisions related to family planning. Qualitative interviewing enables participant's views, understandings and experiences to be explored in a less structured way than quantitative surveys. As "individuals employ their own logic in deciding whether or not to adopt new ideas or behaviours"(Keele et al., 2005) it was felt necessary to explore this logic through one-to-one explorative discussions.

Semi-structured interviews were used to ensure that certain topics were discussed whilst enabling the questioning to provide a discussion-like interaction (Mason, 1996) providing respondents with a platform to express their understandings in their own words (Patton, 1980). The semi-structured format would enable respondents to answer questions in their own way through the use of probes, digression and the generation of new questions or re-formed questions depending on the responses given. "In some cases, where the conversation is flowing, a subject may provide rich, detailed, and lengthy answers to the question…In another situation, the subject may respond to the same question with a rather matter-of-fact, short, cryptic answer" (Berg, 2004, p.91). The semi-structured interview was also chosen as this form of interviewing helped to reduce the interviewer effect on response quality (Fontana and Frey, 2000).

This research is interested in both the individual and group perspectives of contraceptive use and family planning and focus groups were chosen to explore the group or community stance. Berg (2004, p.124) stated that "a far larger number of ideas, issues, topics and even solutions to a problem can be generated through group discussion than through individual conversations", yet they do not "actually offer the same depth of information as…a long semi-structured interview". By using a combination of IDI and FGD a variety of responses would be generated, some of which would be in depth.

4.7.1   The research team

The research was undertaken between July and September 2012, with the consent of ASBEF (Appendix 1 Letter of welcome from ASBEF) who provided support and advice throughout the data collection process.

ASBEF staff helped recruit the research assistant and the local expert as well as allowing some of the data collection to be performed from their Saint-Louis clinic.

Figure 4.6. The research team

The research team for the qualitative data collection comprised of: Megan Ledger (left); Mame Abybatou (centre); Mame Diara Faye (right) in Figure 4.6.

The local expert, Mame Abybatou, was employed to help facilitate recruitment of focus group participants. This was advised by the main ASBEF contact, in order to gain acceptance and trust in the villages. The local expert worked at the health post in Gandon in the dispensary and was a respected member of the community. She was recruited by ASBEF for her communication skills and was trained to coordinate discussions in the community about contraception. ASBEF-trained community volunteers are able to provide barrier methods and contraceptive pills to villagers in their communities. The local expert was also part of the BG program. Her involvement in these roles made her key to our access and acceptance among the research communities. She only participated in recruitment and organising the gathering of participants and was not present during the discussions themselves.

The research assistant, Mame Diarra Faye, had previously worked as an intern for ASBEF at their centre in Richard Toll, over 100km from the commune of Saint-Louis and was highly recommended (Appendix 3, 4 and 5). She had received interview training from ASBEF but in order to become familiar with the project an overview and additional training were provided. Training was undertaken in the first week, before

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data collection commenced, and was guided using materials and knowledge gained by the primary researcher in training courses attended in the United Kingdom. It involved in depth discussions of the research objectives, reviewing the question guides, interviewer and focus group moderator training. There was particular attention paid to the importance of listening to respondents' answers and letting the responses guide the discussion and avoiding leading questions (Mason, 1996). It was necessary to employ a research assistant to act as an interviewer/interpreter and facilitator as the primary language in Saint-Louis is Wolof and the primary researcher only spoke French.

4.7.2   Sampling

The sample population consisted entirely of married women aged 18 or over from the commune of Saint-Louis and who used the services of ASBEF and who lived in the village of Ngaye Ngaye, Gandon or Bkhar. Although in 2005 by the age of 18 over 50% of the target female population were already married (Ndiaye and Mohamed, 2006), it is known that the contraceptive experience for adolescents is different from that of adults (Pedlow and Carey, 2004). Convenience-purposive sampling was used for both the interviews and focus groups. Participants were not selected to be representative of the population but rather in order to understand a relevant range of experiences and viewpoints. Both users and non-users were persons of interest as the research aims were to investigate differences between users and non-users.

4.7.2.1   Interviews

In order to better understand the sociocultural context of contraceptive use in Saint-Louis it was necessary to interview both contraceptive users and non-users. Initially participants were selected from the client base at the ASBEF centre in Pikine. ASBEF provides both maternal and reproductive health services. Only the clients visiting the ASBEF centre for reproductive health services were asked if they would participate in the interviews. Not all the interviews could be conducted at the ASBEF centre as most

reproductive health clients were also contraceptive users and the research questions meant that it was important to talk to non-users as well. It was also decided to restrict the number of interviews at the centre as women who used these services would most likely have already overcome some sociocultural barriers to contraceptive use. Women were asked upon arrival at the centre, if they presented for reproductive health services, would they participate in the interviews. The interviews would then be carried out whilst the women were waiting to be seen, in a private room, so as not to encroach upon the participants' time. All the women asked accepted to be participants but some could not be interviewed as their appointments commenced before they had been interviewed.

In order to recruit women who had perhaps not overcome sociocultural barriers to contraceptive use, such as those exposed to the ASBEF services and also to access more non-users recruitment was also carried out in the villages of Ngaye Ngaye, Bekhar and Gandon. These villages were chosen through consultation with the supervisor at ASBEF and the RA, as the Bajenu Gox was local to these villages it meant that we could use her contacts and knowledge to our advantage.

At the health post in Gandon the same sampling strategy was used as at the ASBEF centre; when women joined the queue to see the doctor they were asked if they were contraceptive users or non-users and if they would participate in the interviews. Then we would interview them in the order they joined the queue/arrived at the health facility until we had completed data collection for that day. As women using the health post were not there specifically for reproductive health services there was an increased likelihood that these women would not be contraceptive users.

4.7.2.2 Focus groups

The local Bajenu Gox undertook the recruitment of participants for the focus group discussions. The only requisite was that the women agreed to participate in the focus group and that they were married and aged over 18. There was no distinction between contraceptive users and non-users. If women wished to disclose this in the discussion then they could but they were not specifically asked to do so. It was hoped that this enabled women to feel more comfortable with the discussion and so that they would

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not feel judged or uncomfortable discussing among the other members of the group. The women who participated in the first three focus groups already regularly met as part of female discussion/support groups, and we hoped this would mean that the atmosphere created by the FGD would enable the participants to speak freely about opinions, behaviours and attitudes (Berg, 2004). IDIs were conducted with quiet focus group participants after each FGD in order to find out if they were quiet because their ideas differed from the group or if they did not feel comfortable speaking in the group situation. Before undertaking the IDI these quiet participants were reminded that they did not have to participate in an additional interview and after the FGDs two women did decline to undertake the IDI. In these instances two other women were asked to take their place.

The final focus group was conducted at the Gandon health post and women were recruited as they arrived to wait for an appointment with the doctor. This technique was similarly used for the recruitment of the pilot focus group, which also took place at the Gandon health post.

4.7.2.3   **Methodological limitations**

There are several limitations with this sampling method, for example the women recruited at ASBEF would have already had to overcome some sociocultural barriers to contraceptive use to become users. However this is likely to be the case with any contraceptive user. Likewise those recruited at the health post, although most were non-users, will be more likely to know about health services than non-users who do not use health facilities. Women who use such health facilities may have special characteristics over those who do not use health facilities such as elevated levels of social mobility, personal autonomy or exposure to people with different ideals and behaviours. Similarly women who are used to regular discussion groups may too have characteristics different from women who choose not to participate in such groups or are not asked to participate. It was hoped that the various different methods of recruitment and the different methods of collection would ensure that a wide variety of individuals were interviewed.

4.7.3   Participant characteristics

Some basic demographic characteristics of the participants of the IDIs were collected at the beginning of each interview. This helped to commence the flow of conversation and aided the research assistant in building a rapport with each respondent. The 40 participants for whom this information was collected had an average age of 30 years and an average of just under three children. A quarter of the participants had co-wives and slightly fewer than 50% were educated (this was established by asking the participants if they were educated or not, as participants responded to this differently actual levels of education could not be obtained). All the women were Muslim and they were mainly from the Wolof ethnic group. There were also women from the Serer and Peulh ethnicities. About two thirds of the IDI participants had experienced moving place of residence due to marriage. Although the populations examined through the SDHS and in this paper are similar they are not directly comparable, as is normally the case with qualitative research. Therefore the conclusions drawn in this chapter will not reflect on Senegal as a whole.

4.7.4   Data collection

Both the IDIs and FGDs were facilitated by the use of question guides. The questions in these guides were adapted from suggestions and guidance provided by Family Health International (2004) and Mason (2002). The question guides were created in the UK and the wording was amended slightly after consultation with the research assistant, to make them more culturally appropriate. For example initially the FGDs were going to ask direct questions about family size, but as it was seen as culturally inappropriate for the younger research assistant to ask this in a public setting, women were asked to reflect instead upon how times are changing between generations and family size.

4.7.4.1   Interviews

The interviews were semi-structured. Firstly the major themes were identified and then questions were formulated as laid out in Appendix 6. The intention was to provide the research assistant with a loose script, from which questions were asked using a similar wording (Bryman, 2008). Whilst following the interview guide the

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research assistant was encouraged to follow the flow of conversation when asking questions, rather than sticking to a fixed order of questioning, using her "intuition to formulate the next question or probe almost instinctively" (Berg, 2004, p.101).

Pilot interviews were conducted to test the advantage of conducting interviews using the research assistant as an interpreter or having her act directly as the interviewer. It was decided that on-the-spot interpretation did not help to explore the themes to any greater extent than when the entire interview was in Wolof and it was decided that for the remainder of the research the interviews would be conducted in Wolof, recorded, and translated at a later date. Following these interviews it was felt that slight wording changes were needed in order to clarify some of the questions for participants.

In total 42 interviews were conducted; 25 with contraceptive users and 17 with non-users. Eleven of the interview participants had participated in a FGD before undertaking an IDI. These were women that had not contributed much to the initial FGD. Of the 42 interviews 17 were undertaken at the ASBEF centre, 14 at the health post in Gandon, six in the village of Bekhar and five in the village of Ngaye Ngaye. More IDIs were undertaken at Gandon than in the villages as the recruitment strategy here proved much more effective and efficient than disturbing women undertaking their daily tasks at home.

IDIs were conducted with women who had been involved initially in FGDs in order to explore whether or not the themes discussed during the FGD then became their individual thoughts or if new, different or more in depth information would be brought to light.

Although quiet locations were sought for the interviews in the villages this was quite difficult due to the open plan communal living which was prominent in the region. The best seating arrangement was where the research assistant would be sitting directly in front of the participant, with the primary investigator slightly off to the side, making observational notes. Some interviews were conducted in a private room at the ASBEF centre or the Gandon health post, others in courtyards and in homes. The research

assistant always reiterated the purpose of the research before commencing interviews and made sure that the participants felt at ease, before asking them to sign consent forms. The interviews lasted on average between 15 and 20 minutes, but varied greatly depending on the respondent. The shortest interview lasted 7 minutes and the longest 49 minutes, however as Berg (2004, p.92) states "length is a relative concept when conducting interviews" and it is the quality and content of the responses which are important.

4.7.4.2 Focus groups

The FGD questions were semi-structured but were divided into three clear sections (Appendix 7), these were also conducted in Wolof. The first section concerned ideals about children, why women have the number of children they do and how this has changed over time. Originally this section was more specific but due to cultural issues related to asking direct questions about how many children women have, it was decided a broader discussion would help to encourage the initial discussion. After this the topic of family planning was approached and led into questions which were more specifically related to contraceptive use and barriers to use in the community.

Initially a pilot focus group was carried out at the health post in Gandon, whereby the research assistant was an observer and the local expert was the facilitator. This was to help the research assistant to see a focus group in action before having to run one herself. Unfortunately the focus group was more like a *causerie* session, however it enabled the research assistant to gain the confidence she needed to facilitate the next five focus groups.

The first focus group was held under a tree, in a courtyard in Bekhar and comprised of ten participants and this proved to be rather a large group, where not everyone spoke and many IDIs were undertaken with these participants to encourage them to speak about these topics. The second focus group took place inside a home in Ngaye Ngaye (Figure 4.7) and there were ten participants as some women decided they wanted to participate at the last minute. Although inside the home there were fewer distractions from passers-by, there were some noisy animals outside the window. The final focus group took place in a room at the Gandon health post (Figure 4.7). Once again, noise

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outside the window was an issue but luckily there was a fan in the room which helped with the heat and only six people were present in these focus groups. The focus groups generally lasted about 30 minutes. The local expert finished each FGD with an informal debrief, in this forum any technical questions the participants had about contraceptive use and access were also addressed (Berg, 2004).

Figure 4.7. Locations of Focus Group 2 in Ngaye Ngaye (left) and Focus Group 3 at the Gandon health post (right)

4.7.5   Research ethics

In order to undertake the fieldwork it was necessary to gain ethical clearance from the University of Southampton (Appendix 8). It was also necessary to gain individual consent from each of the research participants. The remainder of this section explains how various ethical issues were overcome in order to carry out the fieldwork.

4.7.5.1   Informed consent

Before proceeding with the IDIs and the FGs the participants were informed about various aspects of the research. They were told that the primary researcher was a student from England and that the secondary researcher was a student in Senegal. It was explained that the study was being carried out in order to understand motivations and barriers for contraceptive use in their communities. They knew that they had been

selected because they were married and over the age of 18 and participants were also made aware that the data collected would be used in order to form part of a thesis that the primary researcher was undertaking in England.

It was decided not to use the information sheets, which had been prepared in French before arriving in Senegal, as they would need to be translated into Wolof and establishing the literacy level of participants may have created friction at the beginning of each session. Therefore the information was provided orally prior to the administration of questions and would result in the signing of the consent forms. For the focus group discussions, it was more efficient to retain a participant sheet which was then signed and oral consent was sought, as added confirmation, before the tape recorder would be switched on.

For participants who partook in both the FGs and subsequently an IDI only one signature was obtained but the applicability of withdrawal at any time and the right to refuse to answer a question was re-emphasised. It was decided that it would be necessary to offer some form of gratitude for participation, as these women would be giving up their time to participate. It was decided to provide soap as a token of appreciation.

4.7.5.2 Harm

The participants would be subject to minimal harm. The greatest harm could come from having to relive sensitive topics. This was addressed in the consent form and prior to data collection by ensuring that the participants were aware that they could decide not to answer questions, for example if they felt the question was too sensitive. The quiet women who were asked to undertake the IDI afterwards were reminded that they did not have an obligation to undertake the IDI or answer all the questions. Actually these women were rather articulate in the IDIs indicating that it was the FGD environment which put them at unease rather than the questions. There was also potential that due to the nature of the FGD methodology internal confidentiality and anonymity (Tolich, 2004) might be breached. In order to try and overcome this we did ask the participants to be respectful of each other's views and ideas and we emphasised the external confidentiality of the project and that none of their names

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would be used for any purpose other than on the consent forms. No unexpected situations arose during the data collection which could have imposed harm to the participants.

4.7.5.3 **Confidentiality**

In order to maintain confidentiality of the data collected, the nature of the research project was emphasised and it was made clear that information would not be directly revealed to others. The research team was kept small and the results of the IDI and FG discussions were only discussed by the primary and secondary researchers. To maintain initial confidentiality the IDIs and FGDs were carried out, where possible, in private areas or rooms. However the local expert was present in FGDs to provide supplementary information to the women who wished to learn more about family planning. After the data collection stage, in order to maintain data protection, the signed consent forms and the signed participant sheets were kept in the hotel safe and the voice recordings were immediately transferred into electronic form and saved on password protected computers. Interview transcription was done in an area whereby people outside the room would not be able to hear what was being said, to maintain complete confidentiality.

4.7.5.4 **Anonymity**

Once the data were collected and recorded the participants would become anonymous, through the application of a robust system (Corti et al., 2000). They were given a participant number and there was no way to connect the consent forms which contained names to the field notes and tape recordings. The interview transcriptions were written using participant numbers and contextual information was written against participant numbers in the field notes. When photographs were shot great care was taken in order not to capture women's faces clearly and to provide only a pictorial context for the focus group settings. If women were unsure about signing the consent forms, as some said their husbands had warned them never to sign anything, they

were encouraged to just place a mark or and X under their name to show that they agreed and understood that the conversation was voluntary and going to be recorded.

4.7.5.5   **Dissemination of the data**

The participants were made aware that the data being collected would be used for a PhD thesis paper. They were told to contact ASBEF if they had a desire to find out more about the final project summary report. A copy of the summary report will be given to ASBEF as they supported the project in Senegal. The Conseil National de Recherché en Santé (CNRS) will also receive a final report as part of the ethics criteria. Family Health International helped with the formation of the IDI questions and will be provided with a summary report. The Parkes Foundation, who helped with financing, will also receive an end of project report.

4.7.6   **Data analysis**

Content analysis was carried out using the English IDI and FGD transcripts and the computer package NVivo. Codes were inductively developed from recurring themes which resulted from the discussions prompted by the question guides and applied to word documents of the transcripts. Additionally themes which were found to be recurring throughout the given responses were also coded into nodes. Meaningful data was isolated, within the themes, in the form of common phrases (Berg, 2004). Open coding was used in order to ensure that any unanticipated results may be included in the analysis. This resulted in the creation of 29 individual nodes. The results section presents the findings in response to the research aims and questions. The discussion will contextualise the results with respect to the conceptual framework presented in Figure 4.3.

4.8   Results

Here the identified themes and concepts will be discussed in relation to the research aims and questions which have been grouped into four broader categories looking at:

1. Meanings and attitudes

2. Influences and sources of influence

3. Barriers and enablers

4. Overcoming barriers

It was decided to combine the findings of the focus groups with the individual interviews as they did not differ greatly and served to support each other, in that the discussions in both highlighted similar aspects, suggesting that women felt able to discuss freely within both frameworks.

4.8.1   Meanings and attitudes

Most women associated family planning with *positive experiences*. Respondents often felt that family planning and contraceptive use was a good thing. One participant stated:

> *"We must respect your advice because if family planning was not a good thing, you would not recommend it."*

(Participant 8, age 30, 5 children, Peulh, user)

When asked what family planning meant to them women often responded that family planning was synonymous with *health* or the *improvement of health*, not only their own health but that of their *family* as well. They stated that the birth spacing enabled by contraceptive use allowed them to *rest* between births and *take care* of themselves, their children and their husbands. This view was also clear in the focus group discussions where it was acknowledged that family planning promoted *good health for mothers and children*.

However, family planning was recognised by some women as not always being a good thing, for example when complications are encountered. This was highlighted by both users and non-users, suggesting that family planning is universally recognised across groups in both a positive and negative light. Similar thoughts were brought forward in the focus group:

> *"There are some women who have problems with family planning and people say that this is happens when a woman uses a method which is not adapted to her body she can have health problems."*

<div align="center">(FG2, Ngaye Ngaye)</div>

Women who observed the negative effects of specific contraceptives remained firm in the belief that contraceptive use was inherently a good thing.

Women felt that contraceptive use provided them with *freedom* which presents a liberating and autonomous association with contraceptive use. However, husbands were often mentioned by women when discussing their attitudes towards contraceptive use, suggesting that they may not be completely free to make their own decisions. The freedom they refer to may be in relation to that provided by fertility control, facilitated by contraceptive use. This was supported by the links made by some women concerning what family planning means to them:

> *"Family planning allows for birth spacing, for health, the health of your children too. Your husband will also be peaceful."*

<div align="right">(Participant 18, age 52, 1 child, Wolof, non-user FG1)</div>

and *"I think of the relief of women because they are the ones who are tired with closely spaced births. But it also reduces the costs for her husband"*

<div align="right">(Participant 31, age 45, 3 children, Wolof, user)</div>

This is interesting as it presents an acknowledgement that family planning is beneficial for the whole family, as the women quoted above mentioned their own welfare

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alongside that of the family as a whole together with that of their husbands. In response to the question "When you hear the term family planning what do you think of" one non-user said:

> *"If I hear the word family planning, I think of doing it if my husband agrees"*

(Participant 34, age 20, 2 children, Peulh, non-user)

She later goes on to say that women space their births for *rest* and *recuperation*, which shows that she is of the same opinion as the other respondents with regards to contraceptive use but when thinking of the term more generally she links this with her husband's desires and choices. This again indicates that women may not be entirely autonomous when it comes to their decisions about contraceptive use. When asked about decision making related to contraceptive use, women would always refer to their husbands. Women often felt that they made the decision to use contraception but would only follow through with the decision if their husbands were in agreement. A few women would use contraception in secret, if their husbands were in opposition:

> *"If my husband did not want me to use family planning, I would do so in hiding because I want my health and health for my children."*

(Participant 10, age 25, 3 children, Wolof, user)

The general concession is that at the community level there is no *problem* with contraceptive use and women are able to use contraception if they wish to, emphasised by:

> *"Members of our community do not recognise those who use contraception and those who do not"*

(Participant 20, age 44, 5 children, Wolof, user, FG2)

However, this may not always be the case as women who put on weight or lost weight were often questioned as to whether or not they were contraceptive users.

Additionally when women had no children for a number of years or were barren but had been married a while they would be asked if they were contraceptive users. Although this may not be indicative of lack of acceptance it does highlight that the visual side effects of some contraceptives mean that contraceptive use is not as unseen as the previous quote may portray. Nonetheless some women expressed successful clandestine contraceptive use, despite the belief of others that (when asked "Do you have problems with people in your neighbourhood because of family planning?"):

> "Not at all, everyone knows everything"

> (Participant 23, age 29, 2 children, Wolof, user)

One very clear message from both the FGDs and IDIs is that continuous contraceptive use is not condoned and one participant even felt that:

> "Some say it is good, others say it is not good. There are people who want to use it forever in peace, there are others who want to interrupt [use] in order to get pregnant. But the community says it should be established that this is not good, it is not good to keep it that way [using contraception] forever"

> (Participant 10, age 25, 3 children, Wolof, user)

This contention between contraceptive use being accepted for birth spacing but not accepted for limiting births was raised throughout the research, often associated with community or religious views.

When considering levels of contraceptive use within the community non-users were less inclined to have an idea as to the extent of contraceptive use in the community. Both users and non-users were divided between the belief that *some* or *many* women were users. However non-users tended to opt for the more conservative view of *some* women as users. Interestingly the extreme view that *all* women were users was held by a contraceptive user and one user said (in response to "Do women in your community use?"):

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"Yes. In every house there is a woman who uses"

(Participant 28, age 24, 2 children, Wolof, user)

Although it is not sure whether this statement is factually true, the general sense after these conversations is that women are likely to know users and have discussions on contraception, even if they are not users themselves.

Contraceptive use and family planning were only once referred to as taboo subjects. One woman described family planning as *popularised*, it is definitely recognised for its *reliability* and the *peace of mind* it provides women with regards to birth spacing. When comparing traditional methods and modern contraception women highlight that times have changed and that today it is modern contraceptives which work. The only traditional method which was mentioned was the *gris-gris,* a beaded amulet which when worn is supposed to stop a woman getting pregnant. It is believed that when women wear it in the bath they will become infertile. Although most women said the *gris-gris* was unreliable as the few women who had used did so unsuccessfully, so the practice is not completely in the past and some women only turn to modern contraception after experiencing the failure of the traditional method. They felt that the *discreet* nature of modern contraceptives and that they could be used without the husbands help meant they were favourable over natural methods and condom use. This may explain the low use of condoms disposed through the ASBEF service.

4.8.2   Influences and sources

Many women heard about family planning for the first time through health programs and advertisements on the radio and television. It was also common to be exposed to family planning via health professionals at health facilities. Additionally women learned about family planning from close friends, relatives and through general discussions with people in the community.

Often family members and friends would pass on information about family planning to people they deemed in need or who may have future need for family planning, such as newly married women or women who were experiencing closely spaced births. These first time exposures to family planning often emphasised the advantages of family planning and birth spacing as well as informing women about the methods available.

It is clear that women feel:

"Before you can understand something you need to be exposed to it."

(Participant 11, age 41, 4 children, Wolof/Serer, user)

Women were encouraged by each other to seek further information, after their first exposure to the concept, from health professionals.

All women, some after further questioning, were able to identify at least one facility which provides family planning services in the community. Generally these were the ASBEF centre and the health post at Gandon. Even women interviewed in Ngaye Ngaye who were not involved with the focus groups were able to name such facilities. There was evidence of these health facilities working in conjunction with each other, as participants said that they were advised by the hospital to go to ASBEF, following complicated births or for reasons related to infertility.

Women felt that at ASBEF, despite the fact they were a family planning service, their general health and wellbeing was also addressed through this service. This sense of an all-encompassing and fulfilling service was portrayed by many respondents, who felt the staff were *friendly, professional, open and available*. Staff at the health post were similarly described as *friendly*, *hardworking* and providing *quality services*. Some participants commented on the economic burden of contraceptive use. Opinion was divided as a few women said that the cost of contraceptives at ASBEF was high, others that they were cheap.

With regards to contraceptive supply occasionally women used certain facilities based upon the methods they provided. If women wished to use the IUD or the implant then

they would have to go to ASBEF, whereas if they wanted the pill or injection they could go to the health post at Gandon. However both facilities were noted for having issues with supply, and this was reinforced during interviews with health workers. The promotion and acceptance of birth spacing methods by all health professionals explains the low uptake of IUD.

Discussions about family planning help to reinforce that women may have good or bad experiences with different methods, they provide women with advice and information. Discussions are rarely with men, and more likely amongst family and friends. Further emphasising that the topic is no longer viewed as taboo by most women:

> *"There is no problem. We talk about it a lot and daily"*
>
> (Participant 26, age 35, 3 children, Wolof, user FG3)

There was a mixed response as to whether or not family planning was discussed in groups at the community level and some women felt they were not able to talk about it in the community. Despite some women feeling:

> *"Each gives her opinion. We have nothing to hide."*
>
> (Participant 34, age 20, 2 children, Peulh, non-user)

Others felt:

> *"I have discussed [my use] with no one. You know everything you do, should not be discussed…The essential is that it concerns the husband and his wife. So there is no reason to talk about it further…I do not say that I am using…We are ashamed to talk about it because there are some women who cannot keep a secret. They talk too much. They may discuss it in places that displease you."*
>
> (Participant 5, age 30, 4 children, Wolof, user)

Within the community local women have developed a jargon used amongst themselves, whereby they refer to family planning as *'the blue door'* referring to the blue doors of the ASBEF clinic. Emphasising how much family planning has become part of day-to-day discussions, if it is even referred to with a nickname. Generally women feel family planning discussions are necessary as:

> *"Everyone can learn something new from each other, kou la mak eupe le aya sagar [a Wolof saying meaning "the elder has more experience than his little brother"]."*

> (Participant 33, age 29, 3 children, Wolof, user)

4.8.3 Barriers and enablers

Many women felt that there were no barriers to contraceptive use. However these statements were found to be contradictory as throughout discussions husbands and in-laws, religion, access to and misconceptions of family planning were highlighted as inhibitors or facilitators of contraceptive use. This shows how sometimes women are not even aware of the factors which are obstacles either for themselves or others, despite acknowledging that these factors may affect whether or not women are users:

> *"So far I see no obstacles to family planning... [but] I think we need to increase awareness because many women refuse to use contraception because they are afraid or they do not have good information."*

> (Participant 9, age 25, 3 children, Serer, user)

Although basic contraceptive knowledge was relatively universal the quality of this knowledge was not necessarily high. Unfortunately women had often experienced side effects, most often linked with *weight* changes and *irregular periods* and this tended to be as a result of using the *injection*. One misconception which was often stated was that if you used contraceptives for too long you may become infertile, which was linked with the observed occasional delay in return of menstruation and fertility after contraceptive use cessation. One woman responded (when asked "What do you talk about when you discuss with other women?"):

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"Some people say that if they use the injection, the implant they bleed heavily. Others say that norplant can sometimes disappear into the skin and it must be retrieved by professionals"

(Participant 10, age 25, 3 children, Wolof, user)

Another was attending the clinic at ASBEF in order to have her IUD removed. When asked why she wanted to remove it she responded that:

"I lived with a woman who used the IDU and she was bleeding because it seems that the device got lost in her vagina. Subsequently she died…I do not know if this is true or not but I am afraid…when I asked, I was told this was not possible because the base is solid."

(Participant 8, age 30, 5 children, Peulh, user)

Suggesting that misconceptions about contraceptives and the way they work are not always dispelled through these increased communications.

One cultural insight the exploration of side effects brought to light was the side effect on weight, however there was discrepancy as to what was desirable, whereas most women stated weight gain as an undesirable effect of use one woman stated (when asked for additional reasons as to "Why women may want to use contraception"):

"There are some people who use family planning and they gain weight, maybe this is a reason? You know that Senegalese women want to be fat, but I do not want to be."

(Participant 12, age 42, 6 children, Peulh, user)

Whereas actually for some women these fears are barriers to use, in general women will choose a method they are comfortable with or advised to use in order to ensure their pregnancies are spaced and that they are able to rest between births.

Another barrier to contraceptive use which is also hidden in its effect is the value of children in society and the desire for large families. Women were generally divided as to how large they wanted their families. Interestingly all but a few women who stated that family size was up to God were contraceptive users, further emphasising how women do not view that contraceptive use is against the norm, more an activity in conjunction with health and God's plan. Additionally after responding it is *up to God* these women, when prompted for a number, tended to say they desired *four* to *five* children. Many women wanted this number of children. They said that the reason for this was that they did not want too many children and because this number:

> *"Is enough for me".*

> (Participant 3, age 20, 0 children, Wolof, non-user)

Women were adamant they wanted more boys than girls, although they did often desire at least one of each sex. The reasons for this mainly related to the fact that women married out of the family so girls would leave when they are of age, but men would bring wives into the family. Additionally it was felt that boys were *easier to raise* and were less *costly* than girls. Despite the strong desire for both male and female children when probed one respondent said:

> *"[I want] two boys and two girls."*

> Interviewer: "If they are all boys will you continue to look for girls?"

> *"No, I want four in total. I'll just be happy with that. I do not want more."*

> (Participant 23, age 29, 2 children, Wolof, user)

This suggests that, despite strong desires for specific sex combinations, some women are more driven by the actual number of children they will have.

Women noted two differences between the past and current childrearing. They believed that their parents were healthier than they are now and this is why they were able to have more children and it was also said that having many children:

> *"It has a lot of benefits for in the days of our grandparents. Women had a lot of children and it was seen as a sign of wealth and power. But today this is no longer the case as closely spaced births can cause several diseases, for this reason family planning is recommended".*

<div align="right">(Participant 27, age 27, 3 children, Serer, non-user, FG3)</div>

However nowadays one of the main reasons for few children was that *life is expensive* and the related issues of *housing* and *educating* a large family. Additionally women often said they wanted fewer children as *pregnancy was difficult* and for *health* reasons.

Women often felt that they had decided to use contraception themselves but when probed it became clear that the line for decision making was not as clear cut. It may be the women broaching the subject of family planning with their husbands, but it seems that husbands tended to have the final say: if they were *willing* women would use if they *did not accept* or even *forbade* contraceptive use the outcomes were divided. Some women were adamant that they would not use contraception if their husbands were not in agreement. Others felt that:

> *"If a husband refuses the woman should find someone to convince him, to talk to him until he changes his mind and supports her."*

<div align="right">(Participant 14, age 25, 1 child, Peulh, user)</div>

or they may even be driven to use it without their husbands' knowledge. Husbands, however, were not always against contraceptive use - some women said it was their husbands who *encouraged* or *pushed* them to use contraception. Others felt that their husbands were not interested:

> *"Here the village leaders and seniors do not even know that family planning exists. If the women do not tell them about it they are not aware. Maybe sometimes a women who wants to have the consent of her husband, talks to*

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him and this is why the husband is aware of family planning. Planning for

them is a woman's business."

(Participant 33, age 29, 3 children, Wolof, user)

Although men were subconsciously mentioned in relation to decision making, they were also presented as outright barriers to contraceptive use:

"For example, here in our community I saw a couple that almost split

because a dispute over the issue…Finally the woman dropped the idea of

family planning in order to save the marriage".

(Participant 2, age 31, 5 children, Wolof, user)

Husbands generally seem to have the final say on family planning and, if they are not in agreement, women will usually comply with this. In-laws were also put forward as obstacles to contraceptive use as well as enablers:

"I discussed this with my husband's family and they agreed".

(Participant 22, age 21, 1 child, Wolof, user)

Sisters-in-law were often presented as confidents and in general these relationships were conducive to contraceptive use. Only two women spoke of co-wives and the role they play in family planning use. Both presented very different viewpoints. The first felt that having a co-wife meant there was pressure to have lots of children to gain the largest share of the inheritance, whereas the other felt that the family size burden was shared with multiple wives and she only needed one more child than the other wife to be happy. The benefit of co-wives is that this extends the family planning network to which women are exposed and together they are able to share experiences.

Men were not always viewed negatively as some women felt their husbands let them use contraception because he wanted to save his wife's life. One woman stated:

"I thank God, as after every birth my husband accompanies me to the family

planning clinic, to be in good health".

(Participant 26, age 35, 3 children, Wolof, user, FG3)

Therefore it may not be a case of the husband not caring, but more linked to their understand and interpretations of family planning and contraceptive use.

With regards to religion there is also inconsistency among women as to whether or not religion accepts family planning and contraceptive use. Some women were adamant that:

> *"For me it is not sinful…Because it [contraceptive use] is to educate children and space births. I do not think Islam is against this"*
>
> (Participant 6, age 25, 1 child, Serer, user)

> *"I think that religion accepts everything that helps women"*
>
> (Participant 30, age 25, 1 child, Wolof, non-user)

Others felt that religion did not condone family planning but that women used it regardless. Or use for health reasons was accepted but for any other reason was not accepted by religion. Then some women were resolute in their belief that *religion does not accept* contraceptive use. Reasons for this were:

> *"Religion does not accept it because it says that it decreases the followers of the religion of Mohammad."*
>
> (Participant 31, age 45, 3 children, Wolof, user)

> *"I studied in the daara and our teacher told us that religion allows family planning for women when have problems during pregnancy but not for those who do it for fun or for their own pleasure."*
>
> (Participant 42, age 24, 1 child, Peulh, non-user)

There is however a general consensus amongst all women that religion is against the *limitation* of births.

When asked the reasoning behind the views women had about religion and family planning it would seem that those who provided justification were in agreement. Women who believe that Islam accepts the practice of family planning due to the health benefits of birth spacing provided by this practice learnt this from their Imams, Marabouts and at the *Daara* (term used to refer to a Senegalese Koranic school). This is interesting as it suggests that women who have had discussions in religious meetings or with their religious guides are aware that contraceptive use in itself is not necessarily *sinful.* Women who feel religion forbids contraceptive use did not provide justification from specific people and tended to just say that religion in general did not accept. One non-user said:

> *"Some people say that religion does not accept it because we should not prevent the birth of a human being."*

(Participant 43, age 52, 6 children, Wolof, non-user)

This is interesting as no-one else held this view in discussions relating to religion and family planning. They talked about decreasing the number of Muslims, as previously mentioned, but not about contraception with regards to the ending of human life. As this respondent is also a non-user it may be that she is projecting her own belief linked to misconceptions into the views of religion.

4.8.4   Overcoming barriers

Women were asked how they felt that the barriers they mentioned could be overcome. These fell into three main categories. The first was discussions, the second was greater involvement of husbands, and the third was the improvement of access. Interestingly when asked how to overcome barriers to contraceptive use none of the participants recognised the role of religion as a barrier which needed addressing.

Women felt that communication was key to increasing contraceptive use. They felt that by raising awareness and disseminating correct information about contraception

women would become motivated to use and their fears would be dispelled. There was mixed consensus as to whether these talks should be in groups or individually as one woman felt:

> *"Do as you have done today; discuss with women, especially individually because some [women] never talk in groups"*

(Participant 42, age 24, 1 child, Peulh, non-user)

With regards to husbands, again here, the suggestion was to increase discussions with husbands. Empowering women to discuss family planning with their husbands was also presented as an option. Through discussions women felt they would or should be able to convince husbands to support them in their contraceptive use desires. They felt that awareness and education would help them to use contraception without the opposition of their husbands. One woman took to raising awareness among husbands herself. Her friend wanted to use contraception but the friend's husband was not in agreement so:

> *"She told the husband [of her friend] that she [her friend] wanted to rest because if she continues to get pregnant she will lose her life, maybe, and she will not be able to raise her children nor educate them."*

(Participant 12, age 42, 6 children, Peulh, user)

This was successful in changing the husband's views and he accompanied his wife to ASBEF as a result. It was presented that men feel family planning is women's business. However, if they are not allowing women to make their own decisions about family planning then raising awareness of family planning amongst the male population is vital. It is highly likely that if a husband understands the reasons behind using contraception and the implications on his wife's health of many closely spaced births he would be more accepting of contraceptive use.

Access was brought forward here in terms of location and cost. One woman felt that:

> *"Family planning services need to be made available and accessible in all communities. Occasionally you see women who are too lazy to go to Gandon [health post]. Even I, sometimes with household chores, I cannot leave and I will send another to do it for me"*

<div align="center">(Participant 16, age 25, 1 child, Serer, user)</div>

Women also said how life was expensive and eliminating consultation fees and reducing the cost of contraceptives would also help increase contraceptive use.

Interestingly only one participant was adamant she would not use contraception. The others were undecided but would consider using contraception in the future. Reasons for non-use, by these clients who would use in the future were that they had no use for contraception as they were menopausal or had not yet had a child. It was also common for a woman to have been a user previously but then to have stopped in order to try for another child. Women were often keen to see how a pregnancy would evolve and after closely spaced pregnancies they would become keen to use contraception. This stems from the belief that you should only use contraception if your health requires it. If you have naturally spaced births then it is unnecessary to use contraception. Sometimes it may only be clear that a woman is unable to have naturally spaced births after the first and second child are born in quick succession.

4.8.5   The group perspective

The focus groups served more to solidify the discussions and findings from the IDIs than to bring forward any new or enlightening issues. The women retained their own opinions but were also generally in agreement. All three focus groups served to emphasise the decision making power held by men. However it also brought to light an interesting point whereby one woman who was questioned about her husband's non-acceptance of family planning was actually reporting a manifestation in her mind, as

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she had not discussed the issue with him and she was actually the one who did not want to use contraception. The fact that non-users have naturally spaced births or have not yet had any children was again emphasised in the FGDs.

During the focus groups the overarching theme of contraception being related to health was re-emphasised. The sense of this being a new phenomenon was also discussed:

> *"It is because people are no longer healthy and for us women one child is a risk and therefore not spacing births is a transgression"*
>
> (FG1, Bekhar)

> *"[Women used to have more children] Because they were stronger than us and they had good health…[another woman added] Our bodies can no longer cope with pregnancies."*
>
> (FG2, Ngaye Ngaye)

Not only was it felt that the degradation in women's health was new, but also that family planning:

> *"At this time, what we have today did not exist. That is to say family planning at this time, our parents did not know about it."*
>
> (FG3, Gandon)

> *"Mother-in-laws, for example, do not want us to use because they did not use [family planning] in the past."*
>
> (FG1, Bekhar)

This may inadvertently be alluding to the new ideals and behaviours which come with modern contraceptive use and family planning today. The concept of contraception is

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not new as traditional methods have been used for millennia. However the notions of choice and control associated with modern contraceptives and family planning may be regarded as new in comparison to past generations. One reason for the non-use of traditional methods was presented as:

> *"Me, when I had my first child I was given the gris gris [contraceptive amulet] but it was difficult [to use] because of the directions to follow."*
>
> (FG2, Ngaye Ngaye)

The belief of the difficulties and unreliability of traditional methods was generally universal.

It was clear that women felt that by not spacing their births they were jeopardising their health. Despite recognising barriers to contraceptive use one woman felt that they should be ignored when a woman's wellbeing was being considered.

> *"It is parents who say family planning is a bad thing and religion forbids it but I think we should not listen to them because religion allows everything that relates to the wellbeing of the woman."*
>
> (FG3, Gandon)

Alongside the barriers of religion, mother-in-laws and husbands:

> *"Maybe it is because women don't trust these contraceptive methods…[and another added] I think it is a lack of culture."*
>
> (FG2, Ngaye Ngaye)

were presented as barriers to contraceptive use, whereas the expense and difficulties associated with child rearing were also highlighted through these group discussions, Baptisms were mentioned for the only time as being costly, as reasons for using family planning to achieve small families. Suggestions for overcoming these barriers were also

similar to those presented in the IDIs, mainly centred on increased discussions to raise awareness, especially among husbands.

The FGDs also enabled us to gain understanding of the role of the Bajenu Gox, through her summaries at the end of the focus group discussions. She reminded women that family planning is about wellbeing and at ASBEF they can provide support for infertility, infecundity, early pregnancy, closely spaced births and STIs. Her aim to promote female and child health is dynamic and her interactions with the women were informative and clear. An interesting point raised in the second focus group was an observation which helps to explain the phenomenon observed by many women in the IDIs, whereby family planning users are in good health. The Bajenu Gox attributes this observation to the fact that women who use family planning are subjected to regular health monitoring, which she believes means they are viewed as healthier than non-users.

By doing some IDIs after undertaking the FGDs it is possible to explore to what extent women adopt the group view as their own. This did not seem apparent. The IDIs provided the individual insights which were not apparent in the FGDs; these were mainly in the form of anecdotes which were not exposed in the FGDs. Interestingly despite the identification of problems with contraceptive use in the second FGD women who went on to do the IDIs were unaware of any issues or problems related to family planning. Again in the fourth FGD there was only one user, yet in the IDI one participant describes people as using contraception *en masse*. These recognitions show that individual views were not necessarily swayed by the FGDs and the similar themes identified suggest that the general topics and issues with regards to family planning and contraceptive use were adequately explored during this research.

It is felt that this quote (in response to "Are women who use contraception viewed in a good light") best summarises both the findings from the IDIs and FGDs:

"Health has no price. You should not worry about others."

(Participant 1, age 33, 4 children, Wolof, user)

4.9   Discussion

As was suggested by Fontana and Frey (2000) care was taken not to decontextualize statements from participants, but to use them in support of the statements made as a result of the IDIs. Therefore basic information such as the age, number of children, ethnicity and whether or not the participant was a user was provided alongside direct quotations. Due to the nature of qualitative research the findings cannot directly represent the views of Senegalese women, however the sample size was large enough to ensure that a relevant range of views and opinions was captured in relation to the wider context of family planning in the region of Saint-Louis. This is evident in the similarity and overlap of the responses from contraceptive users and non-users alike. As the FGDs did highlight some interesting issues they served as a support for the findings of the IDIs due to the same issues being mentioned through both research methods. Additionally as the post-FGD interviews only provided more personal anecdotes but no new topics or behaviours they were also beneficial in suggesting that the research was successful in extrapolating the main barriers and enablers of contraceptive use in the district of Saint-Louis.

Similarly to the research findings of Foley (2007), who also conducted research in Senegal, most women interviewed believed that family planning was a good thing as it enabled women to space their births, which in turn gave them time to "rest" between pregnancies and to take care of their child(ren) and husband. This was not unlike the findings of Schuler et al. (1994) where Bolivian women saw contraceptive use as taking care of themselves. This research showed that both users and non-users have heard about contraception and are generally accepting of its use for birth spacing. However, despite the increased activities at the local level with regards to family planning

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awareness and access uptake remains low. This has not changed since 2007, here the discussion will look at the outcomes of the IDIs and FGDs through the Values, Identity and Communication factors which were identified in the conceptual framework (Figure 4.3).

When examining the Values of women in the district of Saint-Louis we must first attempt to understand which Values we are discussing. The questions themselves did not ask directly about the Values women have towards childbearing and contraceptive use however two clear distinctions in relation to this aspect of culture may be extracted. Firstly women desire large families, however the term large is in comparison to family sizes in Europe, where replacement fertility is 2.1 (Engelman and Leahy, 2006). Many newlywed women were not using contraception due to their desire to have a child but would consider using in the future. These two findings suggest that what Foley (2007) found in relation to the social implications of fertility still hold true, despite the fact that they were not explicitly discussed. That is to say, women who are new to marriage or within marriage feel the need to provide their husbands with children. Although the women present these ideals as their desires, when exploring the role of Identity this perceived independence will be questioned.

Secondly the desire for male children is strong among this population. Foley (2007) explained that for women in this area it is important to have sons as they receive the largest share of the inheritance. This may explain the desire for some women to have more sons than girls however when questioned about their choice some women actually gave alternative explanations. Girls were least favoured as they were seen as difficult to raise, costly and due to the patriarchal lineage they would leave their family and join that of their husband. If women had more sons they would gain girls via their wives. The fact that girls could become pregnant was another issue which worried one woman.

Contrary to what Foley (2007) found, women who participated in the IDIs and FGDs stated differences between family planning and contraceptive use in the current climate and in the time of their parents. Whereas Foley (2007) felt that women had

strong incentives to have large families linked with social and material security there were signs that these incentives may be diminishing and changing. For example women generally felt that today they needed to use contraception as times had changed. Their mothers were healthy and satisfied with traditional methods such as the *gris gris* however they needed contraception to ensure their health and birth spacing. Not only are opinions changing with regard to the use of contraception but also large families. This was also found in a regional study looking at fertility in the sub-Saharan Africa (Makinwa-Adebusoye, 2001). When asked why women may have large families the response was split between derogatory associations (ignorance, it is not normal, etc) and because God wishes this, for respect. This division in opinions shows a progression towards changing ideals.

When exploring the aspects of culture associated with Identity we are exposed to the fact that women may lack individual choice, which was highlighted by Foley (2007). The need to address issues related to empowerment was also one of the main conclusions for Makinwa-Adebusoye (2001) in their investigation of the sociocultural determinants in sub-Saharan Africa. This issue remains and although not stipulated by the women it is clear upon analysis of the dialogue. When asked who made the decision about family planning use although women may start by saying it was their own decision, after prompting they would often clarify that they decided or wanted to use and then would approach their husbands for their consent. This shows that, as Foley (2007) found, women respect their husbands, seen through seeking their consent and the fact that women felt their husbands permission was necessary and non-use was often attributed to husbands disapproval. There are women who use contraception covertly, however they are in the minority and according to women in this study this would be done for the health of the woman. The reliance on women does not always constitute a negative situation, as was seen when women felt their husbands accepted the use of family planning because they understood it would improve their health.

The feeling that family planning is a woman's business came across from the IDIs and FGDs. This suggests there is a detachment between the need for acceptance from

husbands and the need to maintain their health from women. Husbands were blamed for wanting more children and for non-use but their separation from such behaviour, with it being a matter for women, their lack of interest in being enlightened and their minimal knowledge about contraceptive use meant they are distanced from the contextual reality of contraceptive use. Yet despite this, women cited that there were benefits of contraceptive use for husbands as it mean their wives would have more time to look after them, their children and births spaced further apart would allow them the opportunity to save money before the next birth. Further emphasising the influence husbands have over women, rarely did a woman state selfish benefits of contraceptive use, rather expressing them as benefits for the family unit or the husband.

Additionally there is a divide between the perceptions of religious acceptance of contraceptive use. Interestingly the effect of religious beliefs in conjunction with contraceptive use were not mentioned by Foley (2007), although they are clearly important and recognised in Senegal, as this was also highlighted by Mme Naham (Naham, 2012). It also suggests that the current interventions may not be effective in their dissemination from information from the advocacy sessions with Imams to the general public. Some women believed contraceptive use was completely forbidden by religion, others thought that it was acceptable for health reasons and birth spacing but if you were healthy or wanted to limit your births then it was banned by religion. Others felt that religion was not a barrier to contraceptive use. Certainly for some, religion was not a barrier, with a number of women recounting that they had been advised by their Imams and religious guides to seek family planning services. Contraceptive use was discussed with religious affiliates in relation to the health benefits. These health benefits, though often referred to were not fully understood by all, which became apparent in one interview with a non-user who dismissed family planning due to her strong religious beliefs. When she was told that some women use contraception to help ensure their births are spaced, which has many health benefits, she stated she had not been aware of this.

Most women feel that contraceptive use is accepted by the community and many of the non-users said that they would use in the future. Generally women said that it was not for the community to judge a woman's use of contraceptives but for the individual to choose for herself. A common reason for non-use was that they had not yet had a child, which was also found by Foley (2007). However, the informal communication through community interactions could lead to the spread of misconceptions and negativity surrounding side effects.

Women in this study did not explicitly express problems with finding suitable methods of contraception. On the contrary they felt that at ASBEF the health care professionals tried to help them find the method best suited to their constitution. However, some women expressed the desire to stop using and method switching was high when looking at the clinic data. Many women knew of side effects or had experienced some themselves such as gaining weight, losing weight, issues with blood pressure, irregular bleeding, amenorrhea, stomach aches and allergic reactions. Foley (2007) found that the perceived physical risk and the discussion of side effects showed that women struggled to find satisfactory methods, which may be what is being reflected here. Saying this it was noted by a few women that contraceptive users often looked healthier than non-users and this would be seen as a beneficial side effect of contraceptive use. For example weight gain, sometimes a side effect of taking the contraceptive pill, was highlighted as a desirable side effect by some respondents and respondents stated that occasionally women will choose this method purely for this reason. Interestingly when asked why women may not use family planning, side effects did not come up, instead users were not always able to comprehend or identify with why a woman may choose not to use beyond the fact that these women must obviously not have any problems with closely spaced or physically challenging births.

These findings are similar to those found by Foley (2007) whereby despite general acceptance some women remain anxious about using modern methods and the desire for large families remains evident from the responses given. The exposure to family planning at the community level through the Bajenu Gox and activities at ASBEF has contributed to the understanding that contraceptive use is good and beneficial to

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health. However, although some beliefs and social norms surrounding family sizes and fertility regulation are changing there remain sociocultural barriers in place which mean that the increased knowledge and approval of modern contraception is not being translated into use. The focus now needs to be on tackling the barriers to uptake and translating acceptance and knowledge into use.

4.10   Limitations

During the research progression the realisation of the difficulties in defining contraceptive users or non-users became more apparent. In the end participants were asked to define whether or not they considered themselves to be users or non-users. Issues with identification generally occurred at the ASBEF centre where family planning services were not restricted to contraceptive users. This is because ASBEF provide the full family planning package and women who are having trouble conceiving also use the services. These women may not be contraceptive users but may have been in the past or may intend to use in the future, but were labelled as non-users in the interviews.

The recruitment strategy may have also provided a population selection bias. The populations were recruited through the health facility at Gandon and ASBEF centre and research has found that there is inequity in health seeking behaviour. No information was collected on wealth or occupation from the IDI respondents, although the increased levels of education in the IDI sample (compared to both the region of Saint-Louis and Senegal as a country) may be reflective of their greater wealth than the average inhabitant.

It is understood that the researcher is never a "neutral collector of information" (Mason, 1996, p.36), and as both the primary investigator and the research assistant were present during the IDIs and FGDs this will have affected the results. However personal views of contraceptive use were not introduced by the interviewer in order to try and preserve neutrality. Additionally as "the first source of error is respondent

behaviour" (Fontana and Frey, 2000, p.702) whereby the responses given might reflect what the interviewee thinks is expected as a response, participants were encouraged to discuss their experiences in order to try and minimise this bias.

Fontana and Frey (2000) noted that structured interview settings helped to minimise interviewer impact but went on to say that "student interviewers produce a larger response effect than do non-student interviewers" (p.702). The research assistant and primary investigator were both students and it is hard to tell how this affected results. However as they were both young the cultural constraint of contradicting, interrupting or to be seen as disrespectful of elders was definitely a constraint. This materialised itself whereby some questions were omitted from the first FGD by the research assistant on the basis that participants would not discuss the topic of the number of children. Berg (2004) recognised that novice interviewers often make this assumption about certain topics. This was overcome through extensive discussion between the research assistant and the primary investigator. It was concluded that by talking about the number of children grandmothers had, compared to the number of children women have today we would inadvertently gain an understanding of family sizes and additionally gain an insight into the changes in family size as viewed by participants.

Additionally the interviewer's characteristics and questioning techniques may affect the flow of the discussion and the responses given to questions (Fontana and Frey, 2000). The research assistant was young and educated and some participants may have felt intimidated by this. Following the advice of Berg (2004, p.101) to "never begin an interview cold" in order to try and stimulate discussion, demographic information was collected before the interviews commenced.

Similarly the interviewees' characteristics may also affect the outcomes of interviews. Mason (2002) emphasises the importance of an interviewee's ability to conceptualize, interact and verbalise when responding in the interview context. It is possible that both views and interpretations are constructed during the interview process (Walker, 1985). This may especially the case where interviews were conducted after focus groups.

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Although the interviewers' characteristics may have been limitations in this study the interview process was undertaken in a professional matter with attention taken to produce data of as high quality as possible. Staff at ASBEF were so impressed with the interviewing process that when the data collection period was over the primary research assistant and the research assistant preceded to train the interns at ASBEF in basic interviewing skills.

In focus groups it is difficult to ensure that no one person dominates the conversation and the research assistant was encouraged to ask reluctant participants questions and to minimise dominance of the conversation by one or more of the participants (Fontana and Frey, 2000). In some cases full group coverage of all the topics was not obtained. In order to try and overcome this, quiet participants from the focus groups were taken aside and did IDIs after the FGD, if they agreed.

Mason (1996) highlighted the importance of recognising the limitations of transcription. This is because audio recordings are unable to register non-verbal communication and also because the act of transcription is subject to personal judgement. Field notes were taken and although they will not completely eradicate transcription bias it is hoped that they will provide some context of the non-verbal aspects of the IDIs and FGDs.

To minimise the effect of transcription judgement calls, the research assistant transcribed the discussions from Wolof into French and then the primary investigator translated the transcripts from French to English. It was felt that as they had been involved with the discussions they would be best situated to translate the discussions into data. Although the primary researcher did not understand Wolof, she was given an understanding of what each interview contained through the taking of brief response summaries after each IDI which could be compared to the French to English translation to ensure the essence of both match. Additionally some independent translators were employed to establish the accuracy and reliability of the Wolof transcriptions. The conclusion of this exercise was that the research assistant provided clear, detailed and insightful transcriptions.

Additional limitations present themselves when considering the coding method, as only one researcher was involved in this process. Whether or not a different researcher would use the same categories may be questioned. However as inductive coding methods were used and the methodology is discussed in depth, it is felt that bias of this nature was limited in this analysis and replication of the analysis would produce the same conclusions.

4.11   Conclusion

This paper attempts to explore what women feel enable and hinder their use of contraception. Ultimately it is an exploration of sociocultural factors but to avoid imposing themes questions were kept broad and probes were used to gain greater perspective. When examining the research aims for this paper we know that women in Saint-Louis are aware of modern contraceptives, although their specific knowledge may not be very profound. This was highlighted through the misconceptions presented in some of the IDIs, with respect to how contraceptives are received by the body. Additionally the amount of women that report suffering from side effects suggests that women may face issues finding contraceptives which satisfy their needs. However women who attend ASBEF are consulted and have the option to switch method with the advice of trained staff, as a few participants discussed switching methods with this advice.

Generally respondents feel able to discuss family planning amongst themselves, but this tends to be with people in their immediate circle of acquaintances. Women learn about family planning through many different avenues, including personal interactions with the Bajenu Gox and each other as well as through mass media. It is promising that some women had also had discussions with their religious leaders about contraceptive use.

Respondents were motivated to use modern contraception by the prospect of successful birth spacing. Women also recognised that they desired smaller families than their mothers. Although family planning was not outwardly used to limit family

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size, it is likely that it does contribute to women achieving smaller family sizes than their mothers and grandmothers. In fact family planning to limit births was highlighted as inacceptable and frowned upon by all respondents who mentioned this.

Women in the district of Saint-Louis identified husbands as barriers to contraceptive use. They often stated that if their husbands did not agree they would not feel comfortable using contraception. This suggests that although men are incorporated in the social monitoring provided by the health district of Saint-Louis, it could be beneficial to include men in the services provided by the Bajenu Gox to not only increase their awareness but also their knowledge and understanding of the drivers for women to use. This may lead them to be more accepting and perhaps even encouraging of their wives to pursue family planning, as was suggested by the anecdotes recounted by some of the IDI participants; that it was actually their husbands who encouraged them to use modern contraception. Although whether or not it was the women who actually instigated a conversation about family planning, as probing often showed it was, the fact that a discussion took place and led to a positive outcome with regards to family planning is important. The more husbands and wives discuss issues in relation to family planning the more they will be able to understand each other's motivations and fulfil their desires together.

Religion is seen as both an enabler and a barrier to contraceptive use, dependent on the women who are involved in the discussions. Although there have been initiatives at the regional and district level to involve religious leaders in the promotion of family planning, the message still seems to be very disjointed. Some women seem adamant that contraception is accepted by religion and others insist that is it forbidden. This would need to be reinforced at a local level in order to provide a consistent message to all those living in these communities. Unfortunately what is clear from this is that the messages presented by religion with regards to family planning are not clear and this barrier still needs to be addressed.

The main activity which promotes contraceptive use and acceptability are the discussion groups held by ASBEF volunteers. They act as safe environments in which

women can discuss contraceptive use and are a good platform for dispelling contraceptive misconceptions and introducing non-users to contraceptive methods. Women suggested that a continuation of raising awareness about family planning on a local level, with men and women would be the best way to encourage future use and to help women overcome the barriers which currently stop them from using contraception.

When exploring the findings within a sociocultural context we are aware that social norms are changing but it is clear that increased contraceptive knowledge is not necessarily being changed into contraceptive use (Foley, 2007). One of the reasons may be that although family size ideals are lower than they were previously they remain high. As contraceptive use is only viewed as accepted for birth spacing and women felt that spacing should be for two to three years, they may find themselves changing status from contraceptive user to non-user multiple times during their married lives. This could go some way to explaining why many non-users felt they would use in the future.

This paper raises questions as to the ability of women to make decisions about their reproductive health independently of husbands. This was also highlighted by Foley (2007), who felt that Senegalese women were unable to make individual choices with regards to contraceptive use. The inability of women to pursue the use of contraception without the acceptance of their husbands has a few consequences. Firstly this means that couple discourse needs to be encouraged and secondly women need to be empowered to either have these discussions or if they feel it is necessary to use contraception without having to resort to covert use.

Although Foley (2007) conducted fieldwork in the same area of Saint-Louis, Senegal she was actually investigating family health challenges, as a result some of her discussions were about family planning. The focus of this paper is purely to gather information on family planning and contraceptive use in this area. However the findings from both papers are similar.

There are two clear and enlightening conclusions which this paper makes clear. In a religiously homogenous area like Saint-Louis, the messages which are disseminated

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through religious avenues need to be improved and standardised. As without this women will remain confused and conflicting in the understandings of the way religion views contraceptive use. Secondly family size ideals and social norms related to fertility and families are clearly changing in this area. As smaller families become the norm, women will spend more time as contraceptive users, rather than in a state of pregnancy, post-partum amenorrhea or trying to get pregnant. The question which remains is what is the aim of family planning programmes? If it is to provide couples with the choice to plan their families then men need to be involved more and women need to be aware of the multiple choices of family planning available to them. If the aim is to further reduce family sizes then this is an entirely different story.

5. Paper 3: Evaluating locality-specific interventions to increase modern contraceptive use in low and middle income countries

5.1   Introduction

In 1987, social and cultural factors were highlighted as the most important elements affecting fertility by the United Nations (World Commission on Environment and Development, 1987). Subsequently in 2010 the UN highlighted again the significance of addressing cultural influences which hinder the fulfilment of an individual's right to reproductive health care and the importance of expanding family planning within local communities (United Nations General Assembly, 2010). Cultural barriers persist to this day and this review will investigate how interventions have tried to overcome sociocultural barriers to contraceptive use and identify successful strategies for increasing contraceptive use at the local level.

Although national strategies may prove successful at increasing contraceptive use there is evidence that their reach is not all encompassing, with considerable regional and district level variation (The ACQUIRE Project, 2005). This is partially because national programs often focus on densely populated areas to gain the greatest impact. Warwick (1988) identified the importance of tailoring programs to the unique circumstances of the societies in which they are being implemented. If these strategies can encourage participation at a local level in a non-discriminatory or unbiased way, then perhaps they could in turn be more effective at encouraging further widespread uptake of contraceptive choices.

The purpose of any systematic review "is to guide practice and provide the data on which to base plans for future research" (Holly et al., 2012, p.28). The aim of this specific review is to understand how targeted family planning interventions overcome cultural barriers and initiate contraceptive use, in order to enhance future interventions. This will be achieved by first examining what specific interventions have

been applied to overcome sociocultural barriers to contraceptive use at a local level, and second by identifying which aspects of these interventions (if any) were successful in overcoming these barriers.

Systematic reviews investigating contraceptive use and family planning are not new. However, there are two gaps in the systematic review literature which are being specifically addressed by this paper. First, systematic reviews of family planning interventions have acknowledged that in this area there are both national or system-wide interventions and targeted interventions (RamaRao and Mohanam, 2003), yet they are often analysed alongside one another. This review focuses solely on targeted interventions in order to bring to light and address cultural barriers which may not be highlighted in, or be the primary focus of, national programs. Secondly this review will not include interventions focused on adolescents. This is because adolescents have different fertility needs and desires from adults (Davtyan, 2000) and interventions specifically targeted at this population ignore the needs of couples which do not fall into this demographic. For this review the concern is to see how a specifically targeted population reacts to the implementation of interventions, identifying which aspects of these interventions are successful and which elements are less so.

5.2   Justification for systematic review

This review is interested in specifically tailored or locality-specific interventions, implemented in order to help populations which have so-far been less or outright unresponsive to system-wide programmes to overcome sociocultural barriers and increase contraceptive use within these groups. It is accepted that family planning interventions need to be adapted to the social setting in which they are being implemented yet the extraction of general lessons is lacking in this area (Phillips et al., 1999). When exploring culture and the management of family planning programs Warwick (1988, p.16) found that "much could be gained from systematic attempts… to learn more about how programs operate in different regions. If culture is not relevant, the review can be short". Subsequently research of this nature has not yet been

conducted and this paper will systematically attempt a narrative exploration of the outcomes of identified studies.

This is not a traditional literature review as it uses the rigorous and replicable methodology of the systematic review process to provide a robust evaluation of the research evidence (Petticrew and Roberts, 2006). The structure of a systematic review provides the ideal research tools to aid with the conceptualisation and collation of past research which can then be used to inform and provide best practice strategies for future investigations, policies and improvement strategies. The PRISMA (Preferred Reporting items for Systematic Reviews and Meta-Analysis) guidelines were consulted throughout the process of the review but not all of the 27 points highlighted in the guidelines were undertaken as it was felt that some were more suited to the meta-analysis methodology (Moher et al., 2009).

Systematic reviewing is a tool which enables researchers to "keep up with the evidence that is accumulating in the field" (Egger et al., 2001). In response to the increasing demand for improved communication between researchers in the same field and in the light of budget cuts, systematic reviews are being used more frequently in the social sciences to create a platform of understanding from which further and future research directives can be formulated (Petticrew and Roberts, 2006).

It is already known that family planning programs play an important role in reducing unmet need by addressing certain barriers to contraceptive use (Cleland et al., 2006, Ashford, 2003). The community perspective is necessary to understand why unmet need exists in certain areas at higher levels than in others. It is hoped that by identifying interventions directed towards specific local contexts, an understanding of what is occurring at the community level will emerge as well as patterns of practice which may help to direct future intervention strategies.

5.3   Background

Family planning has been on the reproductive health agenda since the 1960s.
Subsequently there has been extensive development of contraceptive methods and
the availability and access to these methods and family planning facilities has also
improved (United Nations, 2002). Nevertheless, despite worldwide promotion and the
increased use and acceptance of family planning programs and facilities, high fertility
and unmet need for contraception remain in many lower and middle income countries
(LMICs)(Cleland et al., 2006). In 1985 Tsui (p.125) stated that such anomalies "give rise
to deeper consideration of the cultural determinants that both help and hinder the
rapid dissemination of modern contraception". Despite this being said in 1985 the
hindrance of cultural barriers to contraceptive uptake is still present today (Cleland et
al., 2011).

At the 1994 International Conference on Population and Development (ICPD)
reproductive health was high on the agenda. As a result, reproductive health policies
shifted away from demographic goals towards client-centred services which focused
on the needs of individuals and the program of action was endorsed by the 185
participating countries (Jepsen et al., 2000). The international community was urged to
identify all the continued barriers to the supply and delivery of reproductive health
services, and to facilitate access to the commodities essential to these programs
(United Nations, 1995a). When demographic goals were the focus of family planning
strategies an element of the individual was lost, this was now being reintroduced.

In terms of contraceptive use there are three primary categories of individuals; those
who use contraception, those who do not, and those who wish to but are not using.
Current users are the success stories of family planning programmes as their need for
contraception has been met. By understanding barriers to use and responding to these
with client-orientated services those with unmet need will also be able to become
users. As of the ICPD 1994 focus shifted from population stabilisation at the
international level to the reproductive safety and satisfaction of each individual. The
recognition of the importance of government programs as agents of change is not a
new phenomenon (Tsui, 1985). However what made the ICPD stand out was that as
agents of change, this was the first time that governments were being asked to
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specifically address the multitude of barriers to contraceptive use. The necessity of understanding what was needed to facilitate "change" and the importance of removing these obstacles (Bhushan, 1997) was brought to the forefront of the agenda.

The ICPD 1994 was revolutionary because it was the first time that the focus on human rights and a "world where all people enjoy their human rights, and … take action to help make it happen" (Fathalla, 2003) was combined with reproductive health to recognise the importance of reproductive rights. In 1999 key actions were presented for the further implementation of the programme of action from ICPD 1994. The importance of meeting health needs over the life cycle, developing comprehensive and accessible health services for indigenous communities and promoting men's understanding of their roles and responsibilities with regard to respecting the human rights of women were once again emphasised (United Nations, 1999). Notably although there is an observed trend in the improvement of women's status as a result of sociocultural norms and practices "women still do not enjoy equal rights" (Economic Commission for Africa, 2009, p.68) and much remains to be done in order to fulfil the programme of action presented in 1994.

Multiple reasons have been presented in previous chapters for poor response to family planning interventions. Program failure observed by Wickstrom et al. (2006, p.21) was due to "not focus[ing] enough attention on reducing biases and barriers on both the supply side and the demand side of programming". Sunmola (2001, p.927) also noted that "most interventions do not incorporate mechanisms to control the barriers" to contraceptive use.

Many studies have emphasised the importance of culturally targeted interventions (Keele et al., 2005), and not just in the context of reproductive health, as cultural barriers exist to accessing all types of healthcare. For example, improved access to health services for Andean women in Latin America was attributed to the recognition of cultural perspectives and the needs of users when implementing new health strategies (Camacho et al., 2006). Cleland et al. (2006) stated that some of the best interventions have materialised through context specific implementation, by reaching

underserved groups using creative promotion and cultural knowledge, but examples of these studies were not identified in that paper. Additionally Kincaid et al. (1993, p.34) highlighted that "programs can be instrumental in creating a supportive social environment for contraceptive use".

It is recognized that the implementation of culturally sensitive programmes continues to be a complex process (UNFPA, 2005, Goodburn and Campbell, 2001) and by collating family planning intervention studies, a richer understanding of successes and failures will be provided by this review. Systematic reviews have been described as "intellectual gold" (Jensen and Rodgers, 2001, p.235), this systematic review will aim to achieve this by applying formal methods of review to provide a reference document which may guide the future direction of intervention implementation in this field.

"Culture refers to beliefs, attitudes, values, behaviours and traditions that are learned and shared by virtue of membership and socialization in groups" (UNFPA, 2005). Cultural barriers to family planning are those which constrain the use of family planning services. The dynamic nature of cultural norms means that exposure to new ideas and information can change attitudes at both the individual and group level. Culture is highly linked to social norms as societies are formed of different groups with similar or differing cultural exposures and experiences. Culture is a complex term and often can be overlooked in the literature, where certain aspects maybe highlighted but not discussed as being specifically "cultural". For example an article may discuss taboos, values, tradition, ethnicity or practices without stating that these are cultural values or cultural practices, or what the specific taboos or traditions are. However traditions are a cultural element which will differ from society to society and therefore it is important to identify sociocultural barriers as an element which may cause one group of people to act differently from another.

5.4   Related systematic reviews

Traditionally, systematic reviews are used in clinical medicine to collate the findings of medical trials and reach robust conclusions (Victor, 2008). More recently the social sciences have started to use these robust methods to produce systematic reviews

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where medical outcomes may not be present. Both medical and social science systematic reviews have been carried out to synthesize research evidence on a wide variety of reproductive health issues from factors associated with specific contraceptive use to family planning programmes in general.

A medical review carried out by DiCenso et al. (2002) looked at interventions aimed at reducing unintended pregnancies among American adolescents and found that these interventions were not successful in delaying time of first sexual intercourse or improving the use of birth control and decreasing pregnancies among this population. One of the reasons for the inefficacy of the identified interventions was that the control groups were often influenced by conventional interventions rather than no intervention at all. This, alongside an overrepresentation of lower socioeconomic groups among participants may have diminished any affect the interventions had on initiation of sexual intercourse and the use of birth control in the study group.

Pedlow and Carey (2004, p.172) were interested in sexual risk reduction interventions for adolescents and found that "developmental transitions during adolescence influence sexual behaviour and should be considered when developing such interventions". Pedlow and Carey (2004) also noted that "adolescents' patterns of behaviour differ from adults'" (p.173), these findings support the exclusion of interventions targeted primarily at youths as interventions which target this population will be different and should be excluded from a review encompassing all women of reproductive age. Similarly to this review Pedlow and Carey (2004) used content analysis when reviewing randomised controlled trials and evaluating interventions, a methodology which commonly adopted in social science reviews.

Some other reviews in the social sciences related to family planning focused on very different issues within this field. Williamson et al. (2009) investigated the "Limits to modern contraceptive use among young women in developing countries". They found that the use of modern contraceptives by young women is restricted by "lack of knowledge, obstacles to access and lack of control" (Williamson et al., 2009, p.9). Few studies were included in the review but they showed recurrent themes, suggesting

that similar factors restrict young women's use of contraceptives. In spite of the focus on adolescents similar themes were identified in this review with regards to social status and reputations as well as partner relationships. Highlighting that although the needs of adolescents are different to those of married women similar barriers may be found restricting access for both populations.

The quality of family planning programs was investigated in a review by RamaRao and Mohanam (2003). The main conclusions from this review were that "improve[d] client-provider interactions show the greatest promise" (RamaRao and Mohanam, 2003, p.227) and that better care resulted in elevated levels of client satisfaction, adoption and continuation. The studies identified by RamaRao and Mohanam were not relevant to this review or picked up in the literature search as they did not discuss specifically targeted interventions. However it is interesting to note that client-provider interactions were also found to be important in this review.

The social science review most closely related to this one was that of Mwaikambo et al. (2011) which "focused on studies of family planning interventions that took place in developing countries and assessed changes in outcomes directly attributable to a program" (p.69). They identified 63 evaluation studies; among these were mass-media, school based and youth specific interventions. The review revealed that programs which took into account varied approaches and addressed cultural norms had generally successful outcomes. They found that most of the studies lacked information on impact across target audiences and that "more specific information on the actual beneficiaries of interventions is still needed by policymakers wishing to target scarce resources to those most in need" (Mwaikambo et al., 2011, p.79).

Although many papers were reviewed by Mwaikambo et al., it was felt that the inclusion of interventions which target only adolescents alongside more general interventions may affect comparability as these interventions may have very different aims, objectives and outcomes. Some of the studies discussed by Mwaikambo et al. were identified by the search in this review, but many others were dismissed as they discussed interventions targeted towards youths (Eggleston et al., 2000) or because they were national interventions (Douthwaite and Ward, 2005). The papers by

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Debpuur et al. (2002), Hennink and Clements (2005) and Phillips et al. (1996) fulfilled the inclusion criteria of both reviews and were subsequently included in this review and that of Mwaikambo et al.

Prata et al. (2005) reviewed community based distribution (CBD) programmes and concluded that success could be achieved by keeping training brief and providing workers with some form of incentive such as profits from sales. None of the studies reviewed by Prata et al. (2005) were identified by this systematic review, because they were either published before 1994, referred to national interventions or did not have information about contraceptive use (full selection criteria for inclusion can be found in section 5.6.3). Although a similar study by Routh was identified in the Prata review the study sites were different and this excluded it from the current review.

A relevant literature review which investigated "Do family planning programs affect fertility preferences?" was carried out by Freedman (1997, p.1) and "despite casting a wide net, this review found few studies of merit to cite and discuss, partly because the great majority of family planning evaluation studies deal only with what happens after the number of children wanted has decreased and the numbers of couples wanting no more children has increased". However they did conclude that although demand for contraception was not initiated through the interventions themselves, the ideas which create demand were quickly formed once cultural barriers were overcome. Specific cultural barriers were not discussed but were likened to social costs, discussed in one of the intervention articles. Many of the articles discussed by Freedman were published before 1994, but two from more recent years were identified by the search of this systematic review. The first was by Phillips et al. (1996) and was included in the final analysis. The second by Rogers et al. (1999) was not included as it was an HIV prevention intervention.

This systematic review will fill the existing gap in the research evidence of targeted family planning interventions, which can be used to enrich the findings of other systematic reviews of general family planning intervention research whilst increasing our "understanding of the challenges of applying [a] cultural lens" to reproductive

health issues (UNFPA, 2005). This review will differ from the others which have just been discussed through its specification of the interventions to be included.

Only interventions targeted towards an identified population will be included, thereby excluding national programs and mass media campaigns. Both RamaRao and Mohanam (2003) and Mwaikambo et al. (2011) did not discriminate between targeted and system wide interventions. However it is felt that this distinction between types of intervention is necessary in order to identify those which attempt to overcome sociocultural barriers and to complete a more robust and succinct review. Youth and adolescent specific interventions will not be included as this population have been identified as having specific and changing sexual and reproductive health needs. Whereas this review is concerned with family planning as a reproductive choice in conjunction with fulfilling fertility desires, it is felt that youth specific interventions may be more about sexual and reproductive security rather than providing couples with the ability to choose to space or limit births.

This will be a review of published journal articles, that discuss family planning interventions which fulfil the aforementioned criteria. It is hoped that by identifying interventions with a specific target population we can better understand the cultural barriers faced by these targeted populations and how various aspects of the interventions help to overcome these barriers.

5.5   Objectives

The primary objective of this review is to identify and analyse articles which describe and discuss targeted family planning interventions aiming to overcome sociocultural barriers to contraceptive use in lower and middle income countries.

The sub-objectives are to:

- Identify which sociocultural barriers interventions try to overcome

- Discover what interventions do to overcome sociocultural barriers

- Establish what makes a sociocultural targeted intervention successful

- Highlight what elements of sociocultural interventions are less successful

The first two sub-objectives will be examined in the results section of this chapter and the final two will be addressed in the discussion section. In order for studies to be included in this review they must:

1. Identify a population with a subpopulation that is not responding or which does not have access to family planning programs and as a result may have low contraceptive use,

2. Implement a family planning intervention targeted at the subpopulation identified in part 1 or part thereof,

3. Provide information about the intervention,

4. Discuss contraceptive use as an outcome of the study.

5.6   Methodology

In this section the entire methodology of systematic reviewing will be explored and the specific methodology used in this study will be highlighted. When undertaking a systematic review the first thing is to define the search terminology. Once this is complete the search strategy can be devised and implemented using inclusion and exclusion criteria. After the studies have been identified and sorted, the quality of the papers may be assessed to ensure the included studies are of a satisfactory quality. Data are then extracted from the studies, brought together and examined. Before undertaking a systematic review it is common practice to produce a pre-defined plan or protocol. The complete protocol for this study is included in Appendix 9 but many of the details can be found in the following section. Methodological training for this systematic review was provided by Thomas Allen and undertaken at the World Health Organisation in May 2011.

5.6.1   Search terminology

Difficulty in identifying "interventions that are primarily focused on the alleviation of cultural or household demand barriers" (Ensor and Cooper, 2004, p.76) was experienced when initially defining the research question. It was first intended that this review would identify studies which explicitly highlighted family planning interventions related to cultural barriers. After a preliminary scouting search of PubMed it was established that the term "cultural barrier" was not commonly used, retrieving only 18 articles across the whole database; spanning topics from homophobia to breast-feeding. This resulted in the two terms being split and synonym lists of both culture and barrier terms were created.

Figure 5.1. Venn diagram of the search strategy using Boolean operator "AND"

Authors do not always explicitly refer to "culture", hence the importance of the text word synonyms. For example Bongaarts (2006, p.11) stated that "appropriately designed services can reduce unmet need for contraception even in traditional settings". In this case "traditional" has been used in the sense of culture as traditions vary between groups of people. As there is "no single touchstone which could be used to explain any given culture" (Hall, 1965, p.44), it was decided that in order to be included in the review an intervention must be targeted towards a particular group of people. The assumption is that a group of people will be exposed to similar sociocultural barriers. Therefore even if the publication did not explicitly use the term culture, but had been identified by other search terms, it would be included and could be further investigated for relevance.

In order to identify intervention studies which might be relevant, this review will combine the "old view" of culture explored by Wright which emphasises culture as shared elements present in a particular way of life and the "new view" that culture is the "active process of meaning making" (Street, 1993, p.25). It is important to accept

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the active and dynamic nature of culture as cultural understanding changes throughout the life course with exposure to external factors such as the media. Both the old and new view of culture will be used as it is felt that each definition has its own merit and together they better define the current situation of cultural barriers.

To facilitate the search, the term "cultural barriers" was divided and a search for "culture" and its synonyms combined with a second search for "barrier" terms, later referred to as Set A and Set B (Figure 5.1). A third search term; "contraception" (Set C), was created to capture the family planning element of this review. Extensive lists of synonyms were created under each set of search terms to create a wide search strategy, capturing as many relevant studies as possible (Downe et al., 2007). A list of the search terms used and the search strategies used can be found in Appendix 10 and Appendix 11.

5.6.2 Search strategy

The step method (World Health Organisation, 2011) was used to combine the searches for different terms. The synonyms of each search term were combined by the use of OR, and the groups were further combined using AND, building up a search string step-by-step. Although OR could lead to capturing many articles, the AND meant that only articles containing words from each of the three search term categories would be included in the final export from each database. This is illustrated in Figure 5.1; only articles containing words from Set A AND Set B AND Set C went on to the next stage of the process. This meant that if an article contained a cultural term such as "beliefs" and a barrier term such as "obstacle" but used none of the "contraception" terms it would not be processed for review.

Studies were identified through electronic searches of online databases, with the aim of covering a range of databases from different disciplines such as social sciences, health care and education (Table 5.1). The online databases are accessed through different search platforms such as Ovid, CSA and EBSCO Host. The databases chosen for the search were initially flagged by those used in other systematic reviews

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(Williamson et al., 2009, Marston and King, 2006, RamaRao and Mohanam, 2003) and then restricted by institutional constraints or removed due to no relevant hits found from a preliminary scoping search.

Each of the relevant Medline databases were searched using the Medical Subject Heading (MeSH) terms. MeSH terms are a controlled vocabulary, used by Medline, where standardized phrases are used to describe topics. However, not all articles in Medline have been referenced using the MeSH system. Therefore the titles and abstracts of articles in Medline were also searched to capture any articles which had not yet been referenced through the MeSH system.

When searching the remaining databases only abstract tags were used to restrict the areas searched by the strategy. This meant that only articles containing the search terms in their abstract would be retrieved. The exception was the Conference Papers Index and Anthropology Index searches which used the 'all fields' tag as there were no specific tags in these databases. Where possible a date restriction was applied before the articles were imported into EndNote, but this was not possible with all the databases and a manual exclusion of articles published before 1994 (discussed in section 5.6.3) was carried out after importation.

Table 5.1. Databases searched

Source search engines	
Via Ovid	**Via CSA**
AMED Allied and Complementary Medicine Database	Conference Papers Index
EMBASE	IBSS International Bibliography of the Social Sciences
ERIC Education Resources Information Centre	**Via EBSCOHost**
Medline In-Process, MeSH and without revision	CINAHL Cumulative Index to Nursing and Allied Health Literature
Via direct database search	
Anthropology Index	Psych Info

5.6.3 Inclusion and exclusion criteria

Studies identified by the search strategy were imported into EndNote. In the initial screening of article titles three main criteria were used to identify relevant studies. In order to be retained, the article had to discuss:

1. The identification of a specific population in need of family planning services

2. The implementation of an intervention and what the intervention consisted of

3. Information on the effect of the intervention on contraceptive use or non-use

Studies which clearly did not meet the above criteria were immediately excluded. Those which were of uncertain relevance went on to the subsequent stage of screening where the next layer of inclusion/exclusion criteria (Table 5.2) was applied.

Table 5.2. Inclusion/exclusion criteria

Criteria	Inclusion	Exclusion
Date	1994-2011	Pre-1994
Location	Lower and middle income countries	High income countries
Types of participant	Males and females of reproductive age	Same-sex couples
Study design	There will be no discrimination between study types	If there is no evaluation of the intervention
Scope of study	Studies targeted at a defined sub-section of the population	National or adolescent targeted interventions
Contraceptive methods	Hormonal and barrier methods	Natural family planning, traditional birth control, sterilization, abortion, emergency contraception
Contraceptive Use	Contraceptive use, uptake, non-use and discontinuation	Studies which are focused on STI/HIV interventions, abstinence, age at first sex, number of sexual partners or the interaction between contraceptives and other drugs or illnesses

Although numerous studies appeared to have relevant titles it was found upon closer inspection that many articles described situations, levels of use or suggested interventions for implementation, they lacked one or more components listed above and so could not be included. For example: an intervention needed to have been implemented for it to be included in the study, suggestions for interventions were not relevant.

Only studies published during or after 1994 were included. This date restriction was chosen to reflect changing attitudes towards reproductive health following the ICPD 1994 (United Nations, 1995b). Despite this restriction of publication date, the interventions described were implemented over a broader time range (from 1982 to 2005). Only four papers mentioned the 1994 ICPD and highlighted another key outcome of the ICPD which was the necessity of evidence-based evaluation of family planning programs.

Contraceptive use remains low in low and middle-income countries (LMIC) (Cleland et al., 2006) and only studies carried out in LMIC (using a list of LMIC complied using information from the World Bank) were included in the review (Appendix 12)., Studies included for review were those written in English or French due to the language restrictions of the research team.

Studies which investigated contraceptive use amongst same sex couples were excluded as the family planning experience for such couples would be very different and are not likely to involve contraceptive use. This is not to say that the family planning needs of this sub-group are insignificant but just that they will not explored within this review.

It was found that many papers described interventions but did not provide an evaluation of their outcomes. These articles were excluded from the analysis as there was no way to know if the interventions were successful or not. For example the paper by Nazzar et al. (1995) was not included for this reason. It described the technical functions of the Navrongo experiment rather than the outcomes from its implementation.

As has been a recurring theme throughout this paper, any studies focused on non-specific national interventions were excluded from the final analysis. For example the paper by Sultan et al. (2002) seemed promising for inclusion until it became clear that there was not a specific locality being targeted and it was rejected on this basis. The paper by Douthwaite and Ward (2005) was also excluded on this basis. On the other hand it was also necessary to include the motivation for the intervention to be implemented in the chosen areas. For example the paper by Katende et al. (2003) does not provide any justification for the implementation of the improved delivery service in the 12 chosen districts and therefore was not included. This stringent exclusion due to lack of rational for implementation was necessary as although the outcomes may have led to reduced cultural barriers without awareness of these barriers, the results may not effectively be measured.

Only articles which described interventions involving modern reversible methods of contraception were included. Articles looking at interventions focused solely on natural family planning and traditional birth control were excluded because these methods are less reliable than modern contraceptive methods (Moreland et al., 2010, Collumbien et al., 2004) and family planning needs could be better addressed by programmes legitimizing and encouraging the use of modern contraceptive methods. Additionally it is likely that different cultural factors act as barrier to using natural and traditional methods as opposed to hormonal and barrier contraceptives. Sterilization specific interventions were also excluded as this review was concerned with interventions that focused on reversible rather than permanent methods. This is because reversible family planning interventions cater for couples who wish to either space or limit births, whereas non-reversible interventions such as sterilization, can only be used by those who wish to stop childbearing completely, ignoring those with a need to space births. Interventions which concentrated on abortion and emergency contraception were also excluded as the idea of this review is to see how interventions enable the "conscious decision to avoid conception" (Tsui, 1985) and not how the repercussions of unwanted or mistimed births are addressed by such interventions.

Articles for inclusion were restricted to those which described the use of contraceptives for family planning, as the interest for this review is contraceptive use in the context of family planning; to space or limit births. Other interventions which address contraceptive use related to sexually transmitted infections (STIs) and HIV were excluded. The result of STI or HIV interventions may be increased contraceptive use but the motivation for this use is generally not fertility control. Therefore it was felt that these interventions may be affected by different barriers than those targeted at family formation and the related choices with regards to contraceptive use.

5.6.4   Quality assessment

There is an "increasing focus on formal methods of systematically reviewing studies" (Egger et al., 2001, p.4), yet there is still great debate as to the best tools to use for these processes (Downe, 2008, McDermott et al., 2004, Jensen and Rodgers, 2001). Despite 67% of systematic reviews analysed by Deeks et al. (2003) not including some form of quality assessment it was felt important to contain a quality assessment in this review to establish a benchmark by which the articles may be measured. First the related reviews (section 5.4) were examined to see if the quality assessment criteria they used could be applicable to this review. Many used no quality assessment methods and the others used a variety of approaches; from high-medium-low quality ranking (Mwaikambo et al., 2011) to more detailed assessment with eight criteria and exclusion for insufficiency (Williamson et al., 2009).

As this is a review of both qualitative and quantitative papers describing intervention studies it was felt necessary to collate a specially tailored set of quality assessment criteria. In light of this a quality assessment tool specific to the studies identified for this review was created by adapting those presented in McDermott and Graham (2005) and Williamson et al. (2009) as outlined in Box 1. The criteria within this tool were chosen to assess various aspects of the content of each study. Some quality assessment tools had in excess of 20 criteria and some as few as four (Deeks et al., 2003) and it was decided that for this review five clearly defined criteria would enable a coherent analysis of the content of the identified articles.

It must be noted that quality assessment was not used to judge the quality of the interventions discussed in the articles but to provide an indication of the depth of the information provided by the articles. Studies which included larger amounts of detailed information about the context of the intervention implementation, of the interventions themselves and detailed analysis, received higher quality scores than those which gave limited information. The idea of assessing the depth of evidence present in the published papers was driven by the evaluations presented by Waterman et al. (2001) whereby they reported the percentage of studies which included certain aspects of interest. Here the percentage of the individual articles which covered specific elements necessary for the exploration of the interventions was examined. As the interventions were of mixed methodology it was felt that sampling and methodology should be excluded from the quality criteria as they would not be comparable for the different studies. If a study scored fewer than five points it was rejected on the basis that it lacked key information and would hinder further comparison and evaluation. None of the articles which reached this stage scored less than five, probably due to the rigorous inclusion/exclusion criteria.

Box 1 Quality assessment criteria

1. Aim – are there clearly stated aims and objectives?
2. Context – is the setting adequately described?
3. Motivations – are the motivations for the intervention clear?
4. Intervention description – is the intervention adequately described?
5. Data interpretation – is there a clear conclusion?

Adapted from: McDermott and Graham (2005) and Williamson et al. (2009)

5.6.4.1   Quality assessment methodology

This section will describe how the quality assessment criteria identified in Box 1 were applied to every paper and how the scores were allocated. If the aim was clearly stated then an article received 2 points, if it was not as clearly identifiable but an aim could be extracted from the information provided 1 point would be awarded and 0.5 was given when barely a few words were used to hint at the aim. For example, in the article by Huber et al. (2010) the aim of the intervention was to "initiate innovative measures to strengthen family planning" whereas the articles which scored 2 points used the words aim, objective, goals and similar synonyms and variations. It was felt necessary to give a score of 0.5 for a poorly defined aim as the use of 0 would only apply if a targeted aim for the intervention was not present, and the paper would subsequently be discarded from the review.

The contextualization of the intervention areas was based primarily upon the percentage of the article taken up with describing relevant contextual material. If less than 5% of the article covered context then it was given 0.5 points and if over 10% of the article provided contextual information it was given 1.5 points. As this was such an arbitrary method of evaluation it was felt that awarding any more than 1.5 points for this criterion would skew the quality assessment too much.

Motivation was seen as necessary to separate from the context as it explains why the target population was chosen to receive the intervention. If the article only provided one sentence to justify the reason for targeting then it was awarded 1 point, if the article elaborated upon the reasons why a particular region or people were targeted then it received 2 points. None of the articles received 0 for this criterion as it was necessary to have a motivation in order for the article to be included in the review.

In order to understand the extent to which the interventions were adequately described or not, two processes were undertaken. First, the information concerning the intervention was considered. If an intervention mentioned 5 or 6 relevant parameters (specific types of contraception, pay, training, types of worker, gender or commodities offered by the intervention) the article would receive 2 points overall; any less and it received 1 point. Second, the percentage of the articles which were

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related to describing the intervention was calculated: publications in which over 10% of the article described the intervention were awarded 2 points and those with less than 10% coverage were given only 1 point. The points awarded for an article in both stages were then added together and divided by two to provide the total points given for this criterion.

The final quality assessment points were awarded for data interpretation. It was decided that if the conclusion was clearly stated and identified separately from the rest of the article and was supported by the results 2 points would be granted. If the conclusion was not clearly indicated but the general discussion was supported by the findings then 1 point was awarded. The outcome of the quality assessment can be found in the results section (Table 5.3).

5.6.5   Data extraction

The data extraction stage of the systematic review involves sourcing and recoding relevant information. It was decided not to use a data extraction tool such as the CASP (Critical Appraisal Skills Program) tool or the McMaster University critical review form (Law et al., 1998) as previous authors have stated that such tools are not relevant to intervention studies (Deeks et al., 2003). Instead, an approach similar to that undertaken by Harden et al. (2006) was used, where study findings were imported into NVivo (Version 9.2) and the quality assessment criteria (1) were modified to guide data extraction.

NVivo is a software program which enables users to analyse and organise non-numeric data. The features aid users to sort, classify and arrange data and to subsequently identify trends and relationships within. In this case data were extracted relating to each of the study design components identified in the quality assessment criteria. This was done using the node classification component of NVivo, whereby extracted data were placed under the relevant thematic node. This enables the different aspects of the papers to be classified and examined efficiently in the context of the article as well as across articles.

First, criteria from the quality assessment were used to extract sections from the studies into a node entitled "Paper characteristics". A node in NVivo is the name given to a categorisation point, under which a collection of related references are gathered. A brief summary of the interventions as described by the identified articles can be seen in Table 5.4. The "Locality" and "Motivation" nodes were very important as these helped to ensure the articles were indeed targeted (locality) and that justification (motivation) for this targeting was provided.

Second, the key topics discussed in the papers relating to the interventions are identified in Table 5.6, using four headings. The main intervention characteristic was whether the intervention focused on increased supplies or demand crystallisation and if a community meeting was included in the intervention or not. As the interventions were reported differently it was interesting to highlight where the providers were explicitly named as family planning workers and if the gender of the providers was mentioned, under the provider characteristic heading. In terms of "intervention facilitation" it was noted whether studies mentioned training, pay or the provision of commodities for the intervention providers. The involvement of respected members of the community was also considered an avenue of facilitating intervention activities. Additionally the types of contraceptives made available by the interventions were recorded.

Finally, the coding was used to identify specific cultural themes addressed by each of the interventions. The themes were related to Values, Identity and Communication and their influence is represented in Figure 22. This framework is being used as cultural factors which affect the use of family planning can be grouped into these three categories as was see in Chapter 2. Due to the structure of this analysis having three categories in which to classify material relating to these three sections helped to group related observations within the papers. Subsequently ten cultural subheadings were identified. The papers which discussed Values did so within the context of fertility preferences, the value of children and general norms related to contraceptive use. Identity was explored through societal roles, ethnicity, polygamy and religion and Communication was presented in terms of the traditional networks, mobility and exposure to general communication avenues from residents.

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Figure 5.2. Conceptual model relating sociocultural barriers and enablers on individual contraceptive behaviour
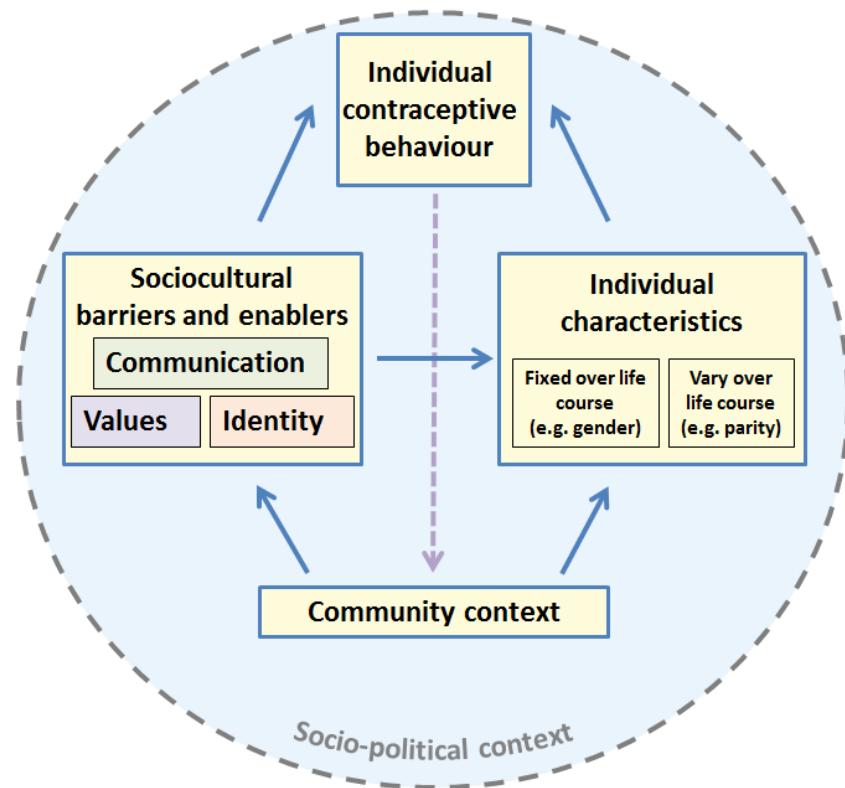
5.6.6   Data synthesis

Data synthesis is where the findings of studies included in the systematic review are brought together. In the current review, the meta-ethnographic approach to synthesis, introduced by Noblit and Hare (1988), has been used.

This approach was used as it is the most well-developed method of synthesizing research findings and has been used by many researchers. Meta-ethnography aims to enable a researcher to achieve a greater understanding and interpretation beyond an empirical study. It assumes that key concepts can be interpreted on the same level and therefore whether it is suitable for synthesizing studies with wide ranges of

perspectives and methods is greatly debated (Dixon-Woods et al., 2004, Campbell et al., 2003). It is important to clarify that this synthesis was "based not on the original data but on the published findings" (McDermott et al., 2004) and it is the appropriateness of this re-interpretation of findings which also fuels the debate as to best practice. This will be discussed further in the limitations of this review.

First, the studies were read thoroughly to identify the main themes and concepts. In the context of this review the main theme was sociocultural barriers and the concepts were the various aspects of interventions and how these related to the sociocultural barriers. A compare and contrast approach (Holly et al., 2012) was used to determine whether specific intervention characteristics were successful at overcoming the sociocultural barriers or not.

5.7   Results

The main themes and concepts will be discussed in this section and the overall synthesis is presented in the discussion section. First the general outcome of the search strategy and quality assessment will be outlined. Then the sociocultural themes identified will be discussed in relation to the identified study contexts. Following this the key characteristics of the interventions will be explored. Finally the intervention outcomes will be summarised.

5.7.1   Search strategy and quality assessment

Using the search strategy in the nine databases (Table 5.1) 10,438 articles were identified. Of these, 3,524 were duplicates; i.e. an article was listed on multiple databases. The titles of the remaining 6,914 articles were examined, those which were obviously irrelevant such as "Maternal obesity and risk of postpartum haemorrhage" (Blomberg, 2011) or "Laparoscopy during pregnancy: a study of five foetal outcome parameters" (Reedy et al., 1997), were immediately discarded. If it was unclear from the title whether or not the article was relevant, such as "Evaluating rural Bangladeshi women's perspectives of quality in family planning services" (Whittaker et al., 1996) or

"Evaluating the impact of community-based health interventions: evidence from Brazil's Family Health Program" (Rocha and Soares, 2010), the abstract was read. (These examples were both excluded due to them addressing national programs and not locality specific ones.)

Figure 5.3. Diagrammatic representation of the search process
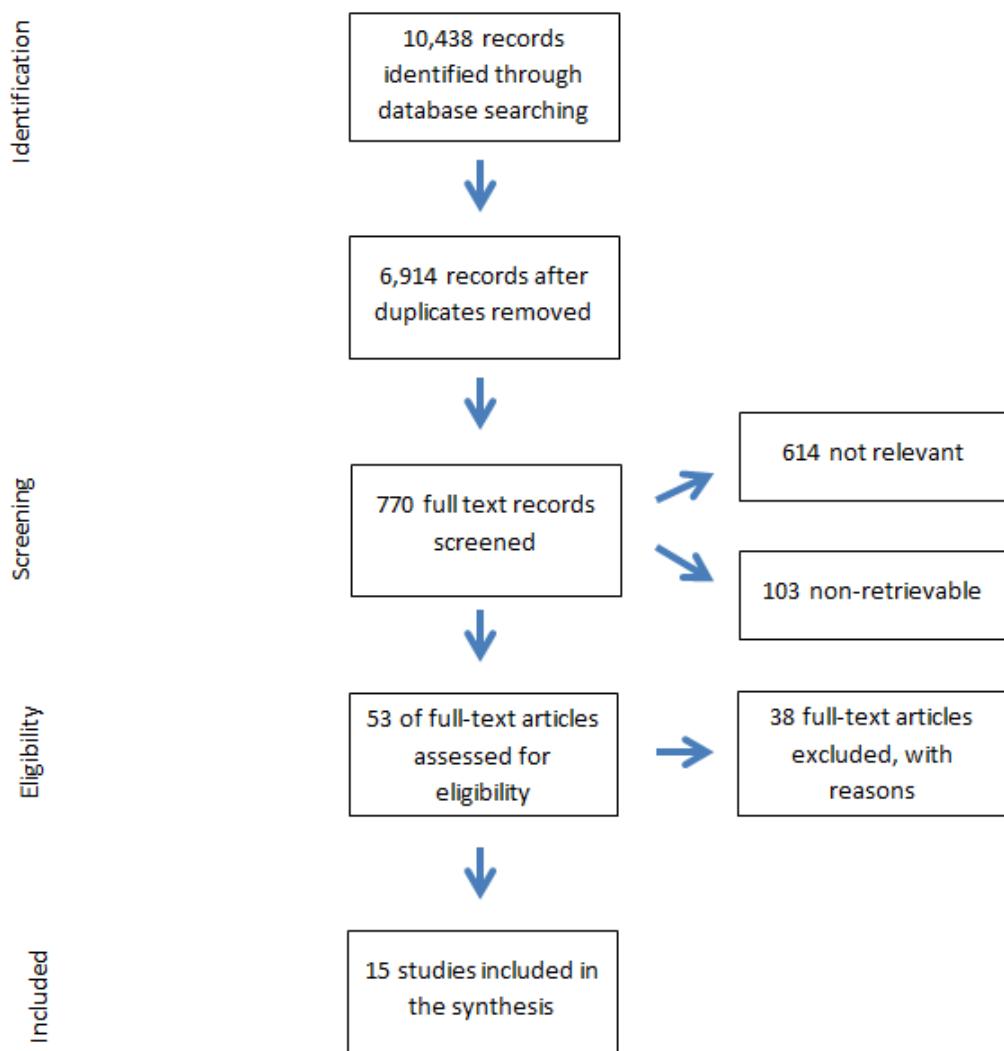
Adapted from: Moher et al. (2009)

Articles could be rejected outright based on the abstract (if it was informative enough), but if not rejected, the full article would be required in order to further establish applicability of the inclusion criteria. Although care was taken when selecting the search terms, the use of words with double meaning such as "culture" (meaning both sociocultural identifiers and cell growth) was unavoidable. This keyword ambiguity explained a large majority of the reasons for rejecting articles at the title only stage.

771 articles reached the "require full text" stage, either because the studies had no abstract and could not be excluded on title alone, or they were potentially relevant from the information provided by the abstract. Similar to Hailemariam and Haddis (2011) it was found that studies tended to be descriptive of determinants or survey findings and this explains why so many studies were subsequently excluded. Finally, 41 articles were identified as potentially relevant, of which 15 articles fulfilled all the inclusion criteria. The process is presented pictorially in Figure 5.3.

Table 5.3. Quality assessment criteria scores

	Aim	Context	Motivation	Intervention	Conclusion	Total
Abbott and Luke 2011	2	1.5	2	1.5	1	8
Awoonor-Williams et al. 2004	2	1	2	1	2	8
Bossyns et al. 2002	2	1	1	1	2	7
Chapman and Gordon 1999	2	1.5	2	1	1	7.5
Debpuur et al. 2002	2	1	2	1.5	2	8.5
Gazi et al. 2005	2	0.5	1	1.5	2	7
Hennink and Clements 2005	2	0.5	2	1	2	7.5
Huber et al. 2010	0.5	0.5	1	1	2	5
Kambo et al. 1994	1	1	2	2	2	8
Luck et al. 2000	2	1	2	2	1	8
Mavanza and Grossman 2007	1	1	1	1.5	1	5.5
Mercer et al. 2005	1	0.5	1	1.5	2	6
Miller 1998	0.5	1.5	1	1.5	1	5.5
Phillips et al. 1996	2	1.5	1	1	2	7.5
Routh et al. 2001	2	1.5	1	1	1	6.5

Table 5.3 shows the points allocated to each article for the various criteria identified in Box 1. The article by Debpuur et al. (2002) scored the most with 8.5 points and the article by Huber et al. (2010) scored the least with 5 points, most of the interventions scored seven or above, indicating that they were all of substantial quality. The highest possible score could have been 9.5. Often studies which were strong in some areas were weak in others, such as the study by Hennink and Clements (2005) which had strong aims and clear motivations but was lacking in the description of the context and intervention details.

Characteristics of the articles are presented in Table 5.4 Six of the identified articles were from *Studies in Family Planning*, two were from the *Bulletin of the World Health Organization* and the others individually came from; *Tropical Medicine and International Health*; *Health Care for Women International*; *Sexual Health Exchange*; *Gender and Development*; *Journal of Health, Population and Nutrition*; *Population and the Environment*; and *International Family Planning Perspectives*.

The identified interventions were implemented in Asia (Afghanistan, Bangladesh (4), India (2) and Pakistan) and Africa (Ghana (2), Kenya, Niger, Tanzania, the Gambia and Zambia). Although the date restriction resulted in articles ranging in publication date from 1994-2011, the interventions described may have been implemented before 1994. Two of the interventions used qualitative data, from observations and focus groups, whereas the remaining 13 interventions used surveys or questionnaires, project/client records and interviews or a combination of methods.

Table 5.4. Characteristics of the studies included in the data synthesis

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Mercer, Ashraf, Huq, Haseen, Uddin & Reza (2005)	Bangladesh	11,000 households Surveys	To assess changes in service utilization in the transition from satellite clinics to a static clinic system.	Mirsarai sub district (7 unions) and Abhoynagar sub district (5 unions)	In Mirsarai there were six clinic wards and 15 non-clinic wards. In Abhoynagar there were eight clinic wards and seven non-clinic wards. Community clinics were built in clinic wards. Fieldworkers were trained for three weeks and assigned to clinics. Satellite clinics near operational community clinics were discontinued.	The number of married women of reproductive age was increasing; program costs and poor coverage meant that an alternative solution needed to be explored for rural populations.	Trends in clinic wards were similar to non-clinic wards. Only in Mirsarai did the proportion of women using any method increase from 40%-47%. Contraceptive use did not decrease.
Huber, Saeedi, Samadi (2010)	Afghanistan	3,708 families End-of-project survey and interviews	To strengthen contraceptive services through the Accelerating Contraceptive Use (ACU) project.	3 areas in the provinces of Ghazni, Herat and Kabul	One male and one female community health worker served 100-150 households. They updated contraceptive information, used quotations from the Qu'ran and educated men and women about the correct use and common, non-harmful side-effects. Included short written guidance on oral and injectable contraceptives. Community health workers were trained to administer the injection and about rare adverse effects and medical screening.	Afghan women have high lifetime risks of maternal death and one of the world's highest total fertility rates and contraceptive use is low; 3 rural populations with differing ethnic populations were identified for the intervention sites.	In ACU project areas the contraceptive prevalence rate increase by 24-27% in 8 months. Use of injectable contraceptives increased most and male involvement was vital.

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Abbott and Luke (2011)	India	Not given. Observations	To increase the CPR by 10 percentage points and to create demand for family planning services.	*Rural Uttar Pradesh*	111 CBDs were trained to motivate, educate and distribute contraceptives in up to 5 hamlets (including their own).	In 2005 the total fertility rate was 3.8, the second highest of all Indian states.	The CPR in the district rose by exactly 10%.
Chapman and Gordon (1999)	Zambia	Not given. Evaluation documents of the intervention.	To increase accessibility and acceptability of reproductive health services.	*Six districts in the Eastern province.*	CBD agents attended a one month training course to provide services and use Information, Education and Communication (IEC) methods to promote knowledge of reproductive health.	The CPR in Eastern province was 4.7%, 40% of teenage girls had started childbearing and the incidence of STDs and HIV was high.	The contraceptive prevalence rate has more than doubled in areas where the project has been operating since 1996.
Kambo, Gupta, Kundu, Dhillon, Saxena and Saxena (1994)	India	1,850 women (baseline) 1,650 (endline) Surveys	To demonstrate the potential for using traditional health practitioners in the delivery of family planning services.	Baghra and Mornain Muzaffarnagar district in Uttar Pradesh	Twenty-two traditional practitioners received eleven days training, which emphasized motivational and counselling skills in order to motivate and recruit family planning users during family health care visits.	Selected due to being a "backward" north Indian state, matched on key variables.	Contraceptive use increased from 34% to 64% compared with an increase in non-intervention villages of 37% to 49%.

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Gazi, Mercer, Khatun, Islam (2005)	Bangladesh	2100 women Surveys, in-depth interviews, focus group discussions and structured questionnaires	To improve access to the essential services package (ESP) in urban areas, especially among the poor.	3 types of urban area: Rayer Bazar (city corporation), Brahmanbaria (district town) and Sherpur (sub-district)	Twenty women from each community were trained for six days and allocated a group of households around a satellite clinic (about 350-450 couples eligible for family planning). They had a stock of contraceptives and oral rehydration salts. They spent about three to four hours a day visiting 20-30 households.	The urban poor were identified as being particularly deprived in terms of healthcare.	Service statistics showed an increase in the quantity of commodities supplied by the NGOs in the year of the intervention compared to pre-intervention years.
Phillips, Hossain and Arends-Kuenning (1996)	Bangladesh	4,236 respondents Surveys, client-worker exchange records and sample registration system	To evaluate the long term impact of household based CBD.	The sub districts of Sirajganj and Abhoynagar.	The Maternal and Child Health-Family Planning Extension project failed to have an impact and by increasing the density of family welfare assistants it was hoped that the intense and successful regimen experienced in Matlab could be replicated. Male and female workers were recruited, hired and trained, both to crystallise demand through outreach and to mobilise demand through the provision of information to foster new ideas.	Women were constrained by the traditional practice of seclusion especially in rural Bangladesh.	During 1986-87, contraceptive prevalence rates increased. Client-worker exchange effects were pronounced, more so for female workers. Contact had a small but significant impact on change in reproductive preferences. Outreach helps women implement their preferences, but plays a minor role in shaping them.

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Debpuur, Phillips, Jackson, Nazzar, Ngom and Binka (2002)	Ghana	8,998 women Demographic surveillance system	To assess the demographic impact of community health and family planning services on fertility and mortality rates.	Kassena-Nankana District 1.Zurugelu only 2 Nurse outreach only 3.Combined strategy 4.Control site standard services	Nurse outreach used community health officers who visited each household in their defined area on a 90 day rotation carrying contraceptives with them. The Zurugelu outreach used traditional networks to provide environments of discussion for men and women through the use of community health volunteers (who have contraceptive supplies). Training was provided in both areas. In the comparison area clinical service delivery was upgraded, supplies and equipment were available and clinical personnel were trained but fixed service point delivery remained.	Knowledge of methods, awareness of services, and motives for adopting contraception are less favourable in this area than in the southern regions of Ghana.	Modern contraceptive use increased in all four areas over time. Use of contraceptives increased significantly more among women exposed to the combined treatment than among women in the comparison area and in the nurse outreach only area.
Miller (1998)	Kenya	Not given. Surveys, distribution records and focus group discussions.	To gain insights into the relative effectiveness of reaching men with family planning services.	Three locations in Kilifi District, Coast Province.	CBD had ten days training and were encouraged to focus on involving men in family planning discussions, during community gatherings and home visits. One team was all male, another all female and the final one was mixed half and half.	The areas selected had a low contraceptive rate in 1986; 9.7% compared to 27% nationally.	The most communication happened within the male and female program. Spousal communication increased in all sites. The all male team distributed the most condoms. Mixed gender teams were preferred.

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Routh, Arifeen, Jahan, Begum, Thwin and Baqui (2001)	Bangladesh	400 women Surveys	To develop less costly systems based on the provision of services from static clinics.	Study sites Gandaria and Hazaribag Control sites Siddiquebazar and Wari	Two alternative strategies to CBD were introduced, both with selected home visits to non-users. 1. Contraceptive commodities were distributed at locations in the community 2. A satellite clinic was transformed into a regular family planning clinic functioning on all working days.	Could utilization of family planning services in urban areas be sustained in these communities when fixed site delivery was introduced?	CPR increased over the test period in both alternate strategies. The increase in CPR under the static clinic-based strategy was most impressive.
Luck, Jarju, Nell and George (2000)	The Gambia	420 women Surveys	To see whether a community-based intervention designed to mobilize latent demand for contraception would increase the use of modern contraceptives.	North Bank Division: 1.Demand-mobilization and improved access (6 villages) 2.Demand-mobilization only (5 villages) 3.Control (4 villages)	Demand mobilization was provided by the kabilo approach and Imam meetings. As part of the kabilo/clan approach a local woman was picked by each clan/kabilo to provide village women with basic health information, on a weekly basis after undertaking two days' training. Imam meetings were multi-stage involving first meetings with village religious leaders and then with general villagers to engage in free-flowing discussions about religion and family planning. Improved availability consisted of management and logistical assistance to community health nurses. Each nurse received a monthly stipend and an office, nurses were also provided with a stock of supplies in case disruption occurred in the usual (Ministry of Health) supply source.	The North Bank division of the Gambia is a rural area cut off from the more developed southern bank. Educational attainment is low, the total fertility rate is about 7.5 and transport links are poor.	No significant change in any circuit was found in the proportion of respondents who believe Islam allowed family planning. Having been visited by a subcommittee member doubled the likelihood of contraceptive use (relative risk ratio (RRR) 1.95), discussing family planning tripled the likelihood of current use (RRR 3.1). Non-users living in both intervention sites had significantly higher odds of contraceptive use (odds ratio>3).

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Hennink and Clements (2005)	Pakistan	5,338 women (baseline) 5,502 women (endline) Surveys and exit interviews	To evaluate the impact of providing family planning clinics in poor urban areas.	*Study sites* Gujranwala, Hyderabad, Sargodha, Shikarpur *Control sites* Gujrat and Larkana	Four new family planning clinics were opened daily (apart from Sundays and Friday afternoons), with core clinic staff and provided identical services. A fee was charged but this was less than the fees at private clinics.	These areas experienced high levels of unmet need for family planning and lack of adequate service provision and were chosen as clinics were opening here. The cultural milieu was highlighted as perhaps inhibiting contraceptive use.	There was little change in overall CPR between the study and control sites however an increased reliance on female sterilization offset a decrease in condom use.
Awoonor-Williams, Feinglass, Tobey, Vaughan-Smith, Nyonator and Jones (2004)	Ghana	891 heads of household, 1,064 women, 180 community leaders, health officials and school personnel. Questionnaires	To test the hypothesis that Navrongo effects are transferable to impoverished rural settings elsewhere using community-based health planning services (CHPS).	Nkwanta District, areas were either exposed to CHPS or not.	Community entry using community leaders was used to foster ownership of the program. Then the construction or renovation of facilities to be used as service points was undertaken. Community health officers had improved communication systems to facilitate their work and minimize isolation. Volunteers had six weeks of training and they provided support for the community health officers, organizing durbars (traditional public discussion group) and disseminating health information by acting as a link between locals and clinical health services.	Nkwanta District, is the poorest and most remote district in the Volta region. The use of family planning was rare, with contraceptive prevalence just above 3%.	The intervention led to increased knowledge of family planning and encouraged the use of family planning once a method was known (RRR 3.33).

Study Author (date)	Country	Sample size and data collection method	Aim	Locality	Intervention	Motivation	Outcome
Mavanza and Grossman (2007)	Tanzania	210 households in 22 villages Surveys	To review the experience and findings from the Jane Goodall Institute's (JGI)TACARE program and integration of family planning into the program.	Kigoma Rural District	TACARE expanded their health services to include family planning. The program included family planning education and CBD, bringing counselling and commodities (non-clinical contraceptives) to doorsteps. 157 local people were trained. For clinical methods the CBD would refer the client to a health centre. A village-wide "sensitization" meeting was held and two week training was provided.	TACARE staff observed a high demand for family planning methods.	Among the clients of CBD services the user rate was 93% for any modern method.
Bossyns, Miye and Lerberghe (2002)	Niger	3,952 women Clinic records.	To show that low-cost attitudinal, structural and procedural changes have the potential to increase uptake of family planning.	Ouallam district.	New operational instructions were formulated to make family planning consultations more client-friendly and responsive to patients. This made procedures more flexible. The staff were instructed to make contraceptives available during any working session and health staff were asked to propose family planning to all eligible women. Health centre staff attended a four day training session.	Family planning utilization rates were about 1%; access and within-service barriers were identified. Health personnel considered this population to be reluctant to use contraception.	The yearly number of new acceptors went from an average of 552 per year to 1509.

Table 5.5. Cultural barriers present in the intervention populations

Intervention country	Authors	Values			Identity				Communication		
		General values, norms	Value of children	Fertility preferences	Religion	Ethnicity	Polygamy	Societal role	Traditional networks	Mobility	General communication
Afghanistan	Huber et al. 2010				●	●		●	●	●	●
Bangladesh	Gazi et al. 2005							●			●
Bangladesh	Mercer et al. 2005									●	
Bangladesh	Phillips et al. 1996		●	●				●		●	●
Bangladesh	Routh et al. 2001	●								●	
India	Abbott and Luke 2011		●	●		●		●		●	●
India	Kambo et al. 1994	●			●					●	
Pakistan	Hennink and Clements 2005	●						●			
Ghana	Awoonor-Williams et al. 2004	●			●	●			●		●
Ghana	Debpuur et al. 2002	●	●		●	●	●	●	●	●	
Kenya	Miller 1998							●			
Niger	Bossyns et al. 2002				●			●		●	
Tanzania	Mavanza and Grossman 2007	●	●		●			●	●		
The Gambia	Luck et al. 2000				●	●	●		●		
Zambia	Champan and Gordon 1999						●	●			●

5.7.2 Cultural barriers present in intervention populations

The purpose of this section is to extract information from the papers which may not be clear to the reader upon first glance and to highlight that family planning use is affected by a variety of sociocultural factors in a multitude of countries and settings. Table 5.5 shows the sociocultural themes identified and highlighted by each paper. Bullet points indicate which of the themes were acknowledged or addressed in each article. The specific way in which these were addressed are pinpointed in this section. The ten themes were grouped into three categories which follow similar lines of argument and have been colour coded in the table for easy identification. The following sections will discuss the cultural barriers identified by each of the papers in the review under the headings of Values, Identity and Communication.

5.7.2.1 Values

Sociocultural barriers relating to values include community norms, beliefs, the value of children and fertility preferences. Seven of the papers did not identify any sociocultural factors relating to values in the study populations. Hennink and Clements (2005), Kambo et al. (1994) and Routh et al. (2001) all highlighted that their interventions were targeted at conservative populations. The intervention discussed by Routh et al. (2001) was focused in Dhaka, Bangladesh, an urban setting where the prescribed conservative norms of society were particularly prominent.

The social norms identified in the paper by Awoonor-Williams et al. (2004) relate to the importance of communal values in Ghanaian society, linked to collective decision-making. Debpuur et al. (2002) who also investigated an intervention in Ghana went beyond this to describe the communal values of pronatalism present in the target population, whereby social norms, values and beliefs reflect the desire for bearing many children.

Similarly in Tanzania Mavanza and Grossman (2007) found that community beliefs were not congruent with family planning, despite the use of traditional spacing methods in the Kigoma District. Traditionally a "hirizi" is worn around the waist to avoid conception until a child is weaned. The motivation for this is the belief that

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conception whilst breast-feeding will lead to the death of the breast-feeding child. Yet the traditional desire for large families, linked with prestige and support in old age, remains a cultural barrier to contraceptive use in this community.

Abbott and Luke (2011), exploring one of the interventions in India, mentioned the presence of patriarchal values and that childbearing is linked with women being accepted and respected within the society, with the birth of sons being particularly valued. Son preference was also identified as being present in the target population in Bangladesh by Phillips et al. (1996).

5.7.2.2 **Identity**

Identity sociocultural barriers pertain to the aspects of one's own identity, such as ethnicity and religious affiliation as well as the prevalence of polygamy and societal roles. Polygamy was only identified by three of the studies. Luck et al. (2000) merely included this variable in their analysis, whereas Chapman and Gordon (1999) noted specifically that their population had more women than men which led to increased polygamous marriages or temporary unions. Debpuur et al. (2002) noted that in the study population 42% of women were in polygamous unions.

In Niger, the intervention assessed by Bossyns et al. (2002) identified religious conservatism as a barrier, although not as the most limiting factor. These authors suggested that traditional religion could be used as a method for the diffusion of positive attitudes towards family planning, which was also identified in the paper written by Huber et al. (2010).

Interestingly the religious community in the intervention sites in the article by Huber et al. (2010) was less concerned with the religious acceptance of contraceptive use than with the related safety. The belief of associated infertility and misconceptions about health issues were deeply ingrained beliefs in the traditional societies among the target populations, including program providers and community leaders. Misinterpretation of religious beliefs in relation to contraceptive use was identified by

Luck et al. (2000) as it was stated outright that in this community the widespread belief was that Islam forbids family planning.

Although religion was not overtly addressed by some studies, it was noted that animist religious practices dominated in the Ghanaian population examined by Debpuur et al. (2002). Similarly, Kambo et al. (1994) said that Muslims were generally less likely than Hindus to accept family planning methods in the study population. Whereas Mavanza and Grossman (2007) simply stated that religious beliefs presented obstacles to use of family planning services, without indication of what these were. Awoonor-Williams et al. (2004) only acknowledged the influence of ethnicity and religion as sociocultural barriers by accounting for them in the analysis.

Luck et al. (2000) also included ethnicity in their analysis but similarly to other papers did not highlight it as a sociocultural barrier (Debpuur et al., 2002). The intervention sites in Afghanistan consisted of different ethnic groupings, and, the principal ethnicities in each area were identified (Huber et al., 2010). Language may be used as a proxy for ethnicity and it was highlighted that the intervention population examined by Awoonor-Williams et al. (2004) consisted of multiple ethnolinguistic groups, with up to five languages being spoken in one village alone.

Ten of the papers identified societal or gender roles as present in the study sites. Stratification of social interactions links to the prescribed social roles present in India (Abbott and Luke, 2011) and the statement by Gazi et al. (2005) that the socioeconomic composition of the population could affect the performance of interventions identifies these barriers in Bangladesh. Hennink and Clements (2005) who were looking at an intervention in Pakistan noted the significant influence of husbands and mothers-in-law, which was also a characteristic of the Bangladeshi society studied by Phillips et al. (1996). Likewise Miller (1998) emphasised, that males were the dominant decision makers in Kenyan society. Similarly Mavanza and Grossman (2007) stated that in Tanzanian society the general consensus was that reproductive health was a women's issue and men would prefer not to be involved. The low status of women was identified as a barrier to accessing family planning in six

papers (Abbott and Luke, 2011, Huber et al., 2010, Bossyns et al., 2002, Debpuur et al., 2002, Chapman and Gordon, 1999, Phillips et al., 1996).

5.7.2.3 **Communication**

Communication and interactions between people play a great role in shaping beliefs and sharing ideals. Misinterpretations, misconceptions and the fears which form local understandings are another indicator of communication barriers present in the study societies; these were identified specifically by Huber et al. (2010) and Chapman and Gordon (1999).

Social distance, discussed by Phillips et al. (1996) and Abbott and Luke (2011), created communication barriers in both populations (Bangladesh and India) as interactions between men and women were restricted and regulated and women were isolated from extra-familial encounters. This is similar to the social distance discussed in the paper by Gazi et al. (2005) whereby the structure of society prohibits close contact or communication between those with different educational or economic backgrounds, or different castes as identified by Abbott and Luke (2011).

Two interventions in Bangladesh (Routh et al., 2001, Phillips et al., 1996) made reference to the immobility of women, who were not free to travel and were confined to their homes. This is linked to purdah which was also identified as a barrier in India (Abbott and Luke, 2011) where the deep-rooted traditions of female seclusion lead to limited mobility among the female population.

Kambo et al. (1994) accepted that there were groups of people who were traditionally hard to access through interventions. Living close to services was found to increase the likelihood of the use of modern contraceptives in Pakistan (Hennink and Clements, 2005). With regard to migration mobility Bossyns et al. (2002) noted that in their Nigerien target population there was high husband migration, similarly Mercer et al. (2005) also identified work migration as a barrier to contraceptive use. Here the effect of migration on contraceptive use is twofold. First women may perceive themselves as not being at risk of pregnancy as their interactions with their husband are restricted by

their absence. Second in these instances contraceptive use is sometimes regarded as socially unacceptability, as use in absence of the husband may lead people to suspect extramarital liaisons.

Traditional networks were identified as important mechanisms to consider in five of the papers. Likewise religion, community leaders and kinship networks were also seen as cultural resources. The three categories are not mutually exclusive. Where previously ethnicity was identified as relating to identity differences, the knowledge that certain ethnicities are more prone to work migration may mean that some ethnicities are more exposed to innovative behaviours and practices through their increased mobility and interactions with people outside their home community (Huber et al., 2010, Debpuur et al., 2002). Similarly, although the ethnolinguistic barriers present in the Nkwanta intervention in Ghana relate to identity issues they may also pose a barrier in terms of communication between those with different languages (Awoonor-Williams et al., 2004).

5.7.3 Key intervention characteristics

The key characteristics of these studies are outlined in Table 5.6. All fifteen of the interventions identified were implemented in order to increase the supply of contraceptives. Thirteen also tried to increase demand. Three of the interventions from Bangladesh are interesting because they provide an overview of intervention progression and development. Initially CBD was used to help increase both demand and supply of contraceptives but as the cost of this became too high alternative interventions were sought and the one described by Mercer et al. (2005) focused on the replacement of satellite clinics with a static clinic system. The interventions by Gazi et al. (2005) and Mercer et al. (2005), both in Bangladesh, were the only two interventions which did not have an element of demand crystallisation. The intervention discussed by Gazi et al. (2005) involved CBD amongst the urban poor. Non-users were not aware of the intervention and therefore it was not seen as an intervention which fostered demand for modern contraceptives.

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Table 5.6. Key characteristics of the interventions

	Abbott and Luke 2011	Awoonor-Williams et al. 2004	Bossyns et al. 2002	Chapman and Gordon 1999	Debpuur et al. 2002	Gazi et al. 2005	Hennink and Clements 2005	Huber et al. 2010	Kambo et al. 1994	Luck et al. 2000	Mavanza and Grossman 2007	Mercer et al. 2005	Miller 1998	Phillips et al. 1996	Routh et al. 2001
Main Intervention Characteristics															
Supply	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Demand	●	●	●	●	●		●	●	●	●	●		●	●	●
Community meetings		●		●	●			●		●	●		●		
Provider Characteristics															
Family planning worker							●								
Additional healthcare		●	●		●	●		●		●	●	●		●	●
Gender	●			●		●		●	●	●	●	●	●	●	●
Intervention Facilitation															
Training	●	●	●	●	●	●		●	●	●	●	●	●	●	
Financial compensation	●					●			●	●					
Respected involvement	●	●			●	●		●	●	●	●				
Commodities		●			●	●				●	●	●			
Type of Contraception															
Oral contraceptives	●	●	●	●	●	●	●	●	●	●	●	●	●		●
Injectable contraceptives			●	●	●		●	●	●	●	●	●			●
Implant												●			
IUD							●		●			●			●
Condoms	●	●		●	●	●	●	●	●	●	●		●		●
Spermicides				●					●	●			●		

Seven of the interventions included an additional dimension to create demand and acceptance by using pre-existing community meetings. Community discussions were utilised to introduce the project, disseminate information and foster an environment of acceptance and in one case peer group meetings and discussions were employed as the main platform for the intervention (Chapman and Gordon, 1999).

5.7.3.1 Provider characteristics

Four of the interventions did not identify the gender of the intervention providers, this is important as it means we do not know the gender mix or how this may have affected activities. Both male and female agents were used to implement the African interventions. The intervention described by Kambo et al. (1994) used only male workers and two interventions used solely female providers. A gender hierarchy was evident in four of the eight interventions which mentioned mixed gender providers, whereby the male providers had superior roles as supervisors or the women were described as volunteers and village women rather than health assistants or community nurses, as the men were.

Of the fifteen interventions none used the term family planning to identify the intervention providers. The paper by Hennink and Clements (2005) did have family planning counsellors as part of the core clinic team but in a core team of over ten people working in a family planning clinic you may expect more people to be identified as "family planning" specific workers. Generally intervention providers were called community based distributors, fieldworkers, health assistants, depot-holders, community health workers/officers/nurses. In ten of the interventions family planning was provided alongside other health care, such as nutrition and malaria care or STI prevention, which might explain some of the more general provider names used. However when the intervention was specifically targeted at increasing contraceptive use, for example the ACU intervention in Afghanistan, providers were still referred to as community health workers.

5.7.3.2 **Intervention facilitation**

It was interesting to note the commodities to which intervention providers had access, to facilitate intervention implementation. All but two articles mentioned the provision of formal training. This ranged from two days (Luck et al., 2000) to six weeks (Awoonor-Williams et al., 2004). Four studies neglected to describe the training beyond stating that it was provided and one study did not mention it at all. It is hard to know how training affected project outcomes. However, despite only two days' training Luck et al. (2000) noted that volunteer health subcommittee members were active, energetic partners and successful in health promotion outreach.

Only four of the articles mentioned financially compensating the intervention providers. This ranged from US$5 as a monthly honorarium in India to US$12 in Bangladesh, which also included money from sales and referrals. Gazi et al. (2005, p.383) stated that financial incentives "could be an important factor for sustainability of …services", two service providers dropped out as they felt their earnings were too small, others were embarrassed they earned so little (US $4-8). On the other hand Abbott and Luke (2011) found that despite the cessation of a monthly stipend the service providers continued their rounds to encourage women to use family planning. So the extent to which financial compensation is necessary for interventions to succeed is questionable. In African communities volunteerism is common practice and this typically comes without financial gain. However in these communities family planning providers gain "prestige in the community" as a result of their work (Mavanza and Grossman, 2007, p.270). On the other hand Phillips et al. (1999) which looked at a variety of CBD interventions found that if agents were unpaid their work load would need to be less demanding. So agent compensation may need greater investigation before conclusion may be drawn with regards to this.

The inclusion of respected members of the community in intervention implementation included participation from either religious or community leaders. The intervention in Tanzania was being executed by the outside organisation Jane Goodall Institute (JGI) and religious and community leaders were approached to gain entry into the

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community. Involving respected people helped to endorse the credibility of interventions and acceptance by officials also encouraged acceptance from the general population. For example in the intervention described by Kambo et al. (1994) traditional practitioners were not only advocates of family planning but were also users. Community involvement was found to be crucial to programme success and agent deployment was advised to be guided by traditional social networks in the CBD evaluation provided by Phillips et al. (1999).

In order to further facilitate the application of the interventions some extra commodities were also noted. Three interventions were described as improving transportation and access either through the provision of motorbikes, fuel or both. Four interventions provided record systems. Other commodities were free treatment for the intervention providers and their family, flashlights, a radio-telephone and other basic equipment.

5.7.4   Intervention outcomes

As previously mentioned the outcomes of the interventions were difficult to generalize as each author reported mainly on the outcomes which they deemed most significant to their study. Due to the fact that this review is concerned with contraceptive use this will be the main outcome addressed. Knowledge acquisition as a result of the interventions will also be discussed.

5.7.4.1   Contraceptive use

Discussion of contraceptive use as an outcome was a requisite for a paper to be included in this review. However, different aspects of contraceptive use were reported and the extent to which contraceptive use was discussed varied between studies. Only one article did not mention the use of any specific types of contraception. The majority of the interventions provided access to oral contraceptives, injectable contraceptives and condoms. In Afghanistan injectable contraceptives accounted for most of the increase in contraceptive use, this was attributed to the initiative of the intervention
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whereby intervention providers were permitted to administer injectable contraceptives in the home (Huber et al., 2010). The interventions in Kenya, Zambia and the Gambia provided access to spermicides, and use of IUDs and implants were also mentioned by some studies.

The interventions examined by Luck et al. (2000) and Debpuur et al. (2002) were similar, with separate arms for demand mobilization and improved accessibility. They both noticed an increase in contraceptive use in intervention sites and established that in combined sites this was significantly higher. Contraceptive distribution increased in intervention clinics (Gazi et al., 2005) and increased contraceptive uptake and user rates were other recorded outcomes of the studies (Abbott and Luke, 2011, Mavanza and Grossman, 2007, Gazi et al., 2005, Bossyns et al., 2002, Kambo et al., 1994).

It was interesting to note that interventions focused on decreasing outreach activities and subsequently reducing door-to-door availability of contraceptive methods did not adversely affect the use of contraception. Routh et al. (2001) reported that in both the alternative strategies to door-to-door distribution, contraceptive prevalence rate actually increased, as did the demand for family planning services within clinics. Contraceptive prevalence also remained relatively unaffected by the shift in provision in the interventions examined by Hennink and Clements (2005) and Mercer et al. (2005). Although this means that the interventions did not necessarily create demand it is a positive sign that there was no observed decrease in contraceptive use as a result of the changing delivery methods.

Non-users were not specifically mentioned in many of the articles, however Luck et al. (2000) noted that non-users living in the intervention areas were more likely to adopt a method of modern contraception than those living in the control circuit. Bossyns et al. (2002) found that post intervention the levels of new acceptors increased in all three health centres and Hennink and Clements (2005) discovered that most clinic users had never used family planning services before attending the new clinic. This suggests that despite clinic distribution not crystallizing new demand as a stand alone

element, once at the facility demand amongst non-users could successfully be fostered.

The changing of methods was addressed by Mercer et al. (2005) as the intervention led to changes in contraceptive supply sources. Despite this, only small proportions of current users switched methods and the main reason for this was side effects as opposed to issues with the service delivery system. Hennink and Clements (2005) observed that although condoms remained the most commonly used method, overall levels of use decreased and were offset by an increase in sterilizations. However they did state that the extent to which this represented method switching, to obtain more permanent contraception, was unclear.

The desire to space or limit births is closely linked with demand for contraception. Debpuur et al. (2002) found that in combined intervention sites women were more likely to desire to limit fertility, but that the nurse-only intervention site had more impact. It was suggested that the exchanges between nurses and clientele may have introduced new ideas about childbearing and invoked preferences for limiting. Phillips et al. (1996) noted a decrease of fifty percent in the desire for more children between the baseline and endline surveys yet, contrary to Debpuur et al. (2002), they concluded that "outreach helps women implement their preferences, but plays a relatively minor role in shaping those preferences".

In the intervention described by Hennink and Clements (2005) it was suggested that the presence of new clinics had contributed to an increase in unmet need in the most culturally conservative intervention site. As this was not reflected in increased contraceptive use it was suggested that this need had not yet been translated into the adoption of contraceptive methods.

5.7.4.2　Knowledge

Not all the articles reported on how contraceptive knowledge changed from pre to post-intervention. Luck et al. (2000) found that contraceptive knowledge stayed the same in the control circuit, whereas knowledge of oral contraceptives increased in all

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three circuits and knowledge of the injectable contraceptive increased specifically in the demand mobilization circuit. This increased knowledge was transformed into increased use of the injectable contraceptive and this was attributed to the suitability of this method for Gambian women, who often concealed their contraceptive use from their husbands. Awoonor-Williams et al. (2004) noted that exposure to the intervention increased the odds of family planning knowledge. Likewise Kambo et al. (1994) and Hennink and Clements (2005) observed that women in intervention sites were more knowledgeable about methods of contraception than those in control and non-intervention sites.

Interestingly, Debpuur et al. (2002) investigated the outcome of the intervention on knowledge over time and although they too found an initial rate of knowledge increase, this diminished over time, as the number of women who were not educated about contraceptives decreased. They did find that the combined effect of the intervention strategies had a greater effect on knowledge than when the strategies were implemented separately.

The analysis by Awoonor-Williams et al. (2004) attempted to explore whether knowledge was translated into practice in the intervention sites. The results suggested that not only did involvement with the intervention increase levels of knowledge but that use of these methods was encouraged once the method was known. They found that although absolute levels of contraceptive use remained low, the introduction of contraceptive knowledge and the subsequent fostering of this knowledge into practice were evident in the study area.

Huber et al. (2010) concluded that once target groups were educated about modern contraceptives acceptance was rapidly achieved as medical misconceptions were dismissed. They noted the importance of male education as this enables husbands to support their wives' use of birth spacing.

5.7.5 How interventions address cultural barriers

This section will explore how cultural barriers were addressed by each of the interventions. As the cultural barriers present in the target populations were not always explicitly highlighted by the articles the different aspects of the interventions were mapped against the identified barriers, to understand what roles they may have played in overcoming these barriers.

5.7.5.1 Values

Both the interventions in Ghana identified communal values and social norms as barriers to contraceptive use (Awoonor-Williams et al., 2004, Debpuur et al., 2002). One aspect of these interventions was community mobilization and it was hoped that by "legitimizing the concept of family planning" through community dialogue the social costs of contraception would be reduced (Debpuur et al., 2002). They relied on the traditional systems and social organisation using the culture of volunteerism already present in many African societies. The intervention explored by Awoonor-Williams et al. (2004) was an extension of that discussed by Debpuur et al. (2002). Unfortunately it is difficult to compare the findings of the two interventions as they were reported very differently. However the relative risk ratio of knowing about and practicing the use of modern contraception was 3.33 for women exposed to CHPS, compared to women who did not know about contraception in the replication intervention (Awoonor-Williams et al., 2004).

With regards to the intervention in Navrongo, women exposed to both Zurugelu (traditional social cooperation) and nurse outreach were over 20% more likely to be contraceptive users compared to women in the comparison area (Debpuur et al., 2002). Interestingly in the nurse-only exposure area the odds of contraceptive use did not increase significantly suggesting that the legitimization provided through the Zurugelu exposure was successful in overcoming the barriers presented by social norms by reducing the social costs of using contraception. However, it was found that the nurse outreach may have resulted in the introduction of new ideas about

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childbearing among women that did not immediately result from the community activities (Debpuur et al., 2002).

The intervention described by Kambo et al. (1994) involved training traditional health practitioners who were respected members of the local community. It was hoped this would lead to social change and increased acceptance. Increased contraceptive use in the intervention villages was directly attributed to the motivation and recruitment of the trained professionals (Kambo et al., 1994). Similarly the interventions identified by Hennink and Clements (2005) and Routh et al. (2001), contained an element of outreach involving increased discussions on family planning. Hennink and Clements (2005) concluded that the community outreach workers were likely to have contributed significantly to the rise in contraceptive knowledge and thus also influenced contraceptive adoption. On the other hand, outreach in the intervention described by Routh et al. (2001) looked at alternatives to CBD, thus reducing one-to-one contact in the home. This strategy was not as successful as the static clinic-based provision, even though it was anticipated that the provision of services from selected points in the community could provide the exposure needed to legitimise contraception. This suggests that initially the incorporation of family planning services into a complete package, including CBD, may be more successful in situations where knowledge and acceptance is not universal.

Although contraceptive use rose among the CBD clients in Tanzania and CBDs spoke publically at markets, the social norms related to the desire for large families was cited as a reason for non-use by men and fears of modern contraceptives amongst non-users were not addressed by the intervention (Mavanza and Grossman, 2007). There was no information provided that stated how many new users had once held similar fears and disapprovals of contraception. However to gain entry to the communities, village-wide meetings were held as an initial form of "sensitization" and may have contributed to assuaging at least some of the fears and misconceptions originally held by villagers as at the endline survey 93% of CBD clients were users of modern contraception.

The CBD discussions in India did not address issues related to social norms and the "taboo" discussion of contraception as it was reported that the CBD agent was restricted by a set of norms, whereby mothers should not discuss sexuality with women of a lower generation than themselves. These social norms led the CBD agent to restrict her interactions with younger clients (Abbott and Luke, 2011). Unfortunately the stratification of social roles also remained present in the intervention examined by Gazi et al. (2005) despite informing local organisations and leaders of their activities they still faced difficulty in accessing in particular the "better-off", yet they felt that they were generally welcomed by the community.

Despite identifying a high fertility population with gender bias the intervention described by Abbott and Luke (2011) failed to address this barrier. However outreach workers involved with the intervention outlined by Phillips et al. (1996) were asked to "promote the notion that daughters and sons should be equally valued". The outreach present in this Bangladeshi intervention was seen as an interaction providing empowerment to women and a mechanism for fostering ideational change over time (Phillips et al., 1996). Odds ratios showed that outreach contact had a small but statistically significant change in reproductive preferences and generally outreach helped women to implement their preferences rather than playing a major role in shaping those preferences (Phillips et al., 1996). A similarly weak connection was found with regards to the influence of outreach on the sex of the desired children.

5.7.5.2   Identity

The only article which both mentioned religion as a cultural barrier and investigated the impact of the intervention on this was that of Luck et al. (2000). The study had two branches to the demand mobilization intervention, one of which involved direct input from Imams. In order to try and overcome the belief that Islam forbids the use of contraceptives, positive and supportive messages were dissipated throughout the study populations. Village religious leaders attended meetings with highly respected Imams and then led half-day village meetings where villagers could engage in discussions with their religious leaders. The aim was to promote the fact that the
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Quran and other Islamic texts promote child spacing, the necessity for a father to provide for his children, maternal and child welfare and prolonged breastfeeding. Apparently the half-day discussion was not successful in delivering its message, as the intervention caused no significant change in the proportion of respondents who felt that Islam allowed family planning.

The paper by Mavanza and Grossman (2007) gave no specific details of the sociocultural barriers presented by religious beliefs although in order to gain entry they did approach religious leaders. However, they do not provide any analysis as to how this did or did not help overcome the barriers imposed by religion.

Although similar messages were promoted in the intervention described by Huber et al. (2010) a different method of dissemination was undertaken. Written guidance was updated by providing contraceptive information and quotations from the Quran to support contraceptive use, and non-literate women would approach literate women to read these documents. Similarly the religious leaders (Mullahs) were educated about contraceptive use and were subsequently encouraged to educate communities. Here it was found that meetings with religious leaders were important for fostering trust in the acceptance of innovations.

Where religion was not addressed by the intervention but was included in the analysis different outcomes were found. Awoonor-Williams et al. (2004) compared the likelihood of contraceptive knowledge with religious affiliation and found that Christian respondents were more likely than those practicing no religion to have contraceptive knowledge and that identifying as Muslim further increased the odds of knowing a method. They suggested that it was therefore necessary to consider religious affiliation when providing counselling and services to community members. On the other hand Kambo et al. (1994) found that acceptance was lower among Muslims than Hindus but concluded that accessibility increased acceptability among these groups as contraceptive prevalence rates amongst both religious groups remained the same in non-intervention villages, post-intervention. This suggests that

the influence of religion could benefit from greater exploration in the analysis of interventions.

Despite the intervention highlighted by Bossyns et al. (2002) identifying religious conservatism as a barrier to contraceptive use the intervention did not attempt to address this issue and it was not mentioned in the analysis. However Debpuur et al. (2002) who stated animism was the predominant religious practice in the intervention areas found that practising a non-traditional religion was associated with increased odds of reporting modern contraceptive use.

The intervention described by Debpuur et al. (2002) included ethnicity in the analysis but did not discuss the effects on contraceptive use. It appears that women from the main Kassena ethnicity were more likely to report the use of a modern contraceptive method, however this effect was not statistically significant, meaning that other factors included in the analysis better describe contraceptive use or non-use than ethnicity. On the other hand ethnicity was a significant determinant of contraceptive use in the analysis by Luck et al. (2000) and women from the main Mandinka ethnicity were nearly 60% less likely to be current contraceptive users (p<0.01).

Only one of the interventions tried to address the barrier of ethnicity, the Ghanaian replication intervention (Awoonor-Williams et al., 2004). A direct replication of the Navrongo intervention would not work in the region, due to the ethnolinguistic diversity of the intervention population. Instead of relying on only traditional leaders, this intervention identified multiple leaders to organize the project and traditional leaders were only in honorific roles. Due to the way the results are presented it is not possible to tell how contraceptive use varied by ethnicity before and after the intervention. However it appears that women from the Kokomba ethnicity were less likely to use contraception than those from other ethnic groups. This was an expected finding as this ethnic group display unique attitudes to health seeking behaviours and practices (Awoonor-Williams et al., 2004) and would suggest that this barrier still needs to be overcome. An example of these divergent behaviours is that members of this tribe are generally disinclined to accept medical assistance from providers of a
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different background than individuals belonging to other ethnicities. Huber et al. (2010) noted that the dominant ethnic group in the Tormay intervention area in Afghanistan has experience with condoms and it was mentioned that this population were mobile during the Taliban regime. This was the only area in which condom use increased notably.

In India the caste system provides a common identity between people, in the same way that ethnicity may in Africa. Unfortunately the intervention evaluated by Abbott and Luke (2011) only served to highlight the continued segregation between castes, emphasising the hierarchical systems present in this population. CBDs were expected to work with clients from different castes but it was noted that overcoming social norms about cross-caste interactions was hard and lower-caste women received decreased frequency and quality of visits compared to the higher caste women (Abbott and Luke, 2011).

The low status of women and stratification of social roles, with men placed in the dominant role in societies addressed by these interventions, was highlighted by many of the articles. Huber et al. (2010) found that the involvement of men resulted in a more positive and supporting environment for women. Women were involved in leadership roles and discussion groups in Ghana and although the paper in part focused on reassuring men that family planning was accepted by respected leaders this may have also provided women with greater autonomy to voice their opinions (Debpuur et al., 2002). The intervention in Afghanistan also involved women with organizing health committees which was considered as one of the intervention achievements (Huber et al., 2010). The general CBD activities were seen as a form of empowerment (Hennink and Clements, 2005, Phillips et al., 1996) as community based distributors were respected and served as confidents, role models and communicators of new ideas.

Interestingly one of the conclusions drawn by Miller (1998) was that male agents had more free time and "men were more likely to respond to educational activities when they were directed specifically at them" therefore it was recommended that

community based agents be both male and female. Chapman and Gordon (1999) assessed the impact of involvement in the intervention on the CBD agents and found that female agents felt empowered, male agents became more caring and that their training helped improve their marital relations, all of which are positive impacts of the intervention. They felt that working with men, women, young and old was essential for improving gender relations. A noted outcome was that male opposition to contraceptive use reduced through counsel from the male CBD agents (Chapman and Gordon, 1999).

Miller (1998) identified the strong roles men play in society and the intervention attempted to increase the involvement of men in family planning services. Not only were men specifically targeted through male-only community meetings, football matches, etc. for discussions on family planning they were also involved in consultations during home visits as part of the intervention. The male agents were attributed with increasing the use of family planning by men. Although males were identified by Mavanza and Grossman (2007) as being excluded from family planning decision making there was no aspect of the intervention which attempted to involve them specifically.

Polygamy was not found to be a significant determinant of contraceptive use by Luck et al. (2000) or Debpuur et al. (2002).

5.7.5.3   **Communication**

Communication between spouses was not identified as a sociocultural barrier by either Miller (1998) or Chapman and Gordon (1999) yet they both found that interventions resulted in increased spousal communication and more harmonious marital relations. This was achieved in Tanzania through the involvement of male agents and female agents empowering women to counsel their husbands (Miller, 1998). The improved spousal relations observed in Zambia were more due to the use of contraception and birth spacing, giving couples back their sexual desires and freedom (Chapman and

Gordon, 1999). In this intervention women were encouraged by CBD agents to discuss their decisions to use contraception with their spouses.

When communication was identified as a barrier caused by social distance the nature of the interventions, based on CBD (Abbott and Luke, 2011, Phillips et al., 1996, Kambo et al., 1994), were to make distribution available to all, as well as to reduce issues encountered in communities where social roles were also stratified (Abbott and Luke, 2011, Gazi et al., 2005). As was discussed previously, Phillips et al. (1996) noted that contact, which would result in communication, had a small but significant impact on reproductive preferences crystallizing existing demand for contraception rather than fostering ideational changes about ideal family size and demand for children. The intervention in India where traditional health practitioners were trained and could then provide family planning services alongside family health care visits saw a rise in contraceptive use of 30%, compared to an increase of 12% in non-intervention villages (Kambo et al., 1994).

In areas where female mobility was restricted by the practice of purdah (female seclusion) the implementation of CBD interventions (Abbott and Luke, 2011, Routh et al., 2001, Phillips et al., 1996) gave women who could not leave their homes access to family planning services. In the intervention reported on by Abbott and Luke (2011) which was meant to bring family planning to all the members of the intervention communities, this did not prove to be the case. As discussed previously, clients from the lower castes were treated differently to clients from upper castes. Also, despite being trained in how to engage with adolescents the outreach workers remained reluctant to do this due to the sensitivity of discussing reproductive and sexual health with people of different generations.

In the interventions where client contact was reduced, for example in response to the move from satellite clinic provision to static clinic service delivery in Bangladesh, (Mercer et al., 2005), respondents felt they would still value home visits as they were sources of information and it meant they did not have to leave their housework. Only a small majority (54-55%) favoured the static clinic system over home visits and satellite

clinics but few reported actual problems with the transfer of service provision and most were satisfied with the services. Although contraceptive use did not decrease, it only increased by 7% in one of the sub districts.

Similarly where restricted mobility was identified as a barrier by Routh et al. (2001) it was hypothesised that contraceptive use may decrease with the withdrawal of CBD agents. There were two arms to this intervention. The community service point delivery arm was successful at maintaining levels of contraceptive use, whereas the second arm (static-clinic provision) raised the CPR by 4%. Here it was concluded that an effective mechanism for promoting activities, including community mobilisation, would be necessary in the future and should be further explored.

The intervention in Niger (Bossyns et al., 2002) involved the implementation of new operational instructions whereby family planning services were integrated and offered to all eligible women. This meant that women no longer had to find the courage to address the subject of family planning, as the practitioner would initiate the conversation. The issue of mobility was reduced as women no longer had to make special visits to the clinic for family planning services. However, Bossyns et al. (2002) found that the quality of the interactions with health workers and their personal conviction affected how women responded to the intervention.

Many of the interventions resulted in increased communication between users and family planning workers (Gazi et al., 2005, Luck et al., 2000, Phillips et al., 1996). In Bangladesh the depot-holder intervention explored by Gazi et al. (2005) resulted in increased use of clinics, knowledge of contraception and increased provision of commodities. However it was felt that social factors affected communication and that the profile of depot-holders should better reflect those of the population being served to reduce social distance. Further communication training could have addressed these issues (Gazi et al., 2005). For Phillips et al. (1996) the single most important component of the intervention was the client contact provided by the family welfare assistant. Similarly Luck et al. (2000) found that increased use of contraceptives was associated with visits from members of the health subcommittee.

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The mobilization of community action and the emphasis on volunteerism was prominent in the interventions described by Mavanza and Grossman (2007), Luck et al. (2000), Debpuur et al. (2002) and Awoonor-Williams et al. (2004). Although contraceptive use increased in the Tanzanian target population, women reported fears and family disapproval as reasons for non-use suggesting that future interventions may need to address these areas (Mavanza and Grossman, 2007).

Luck et al. (2000) reported on an intervention which had a specific aspect that involved using the traditional networks existing in the study population to mobilize demand for contraception. A dynamic woman was chosen from each clan (kabilo) who would then visit other women in her clan promoting improved health practices and the benefits of family planning. Similarly the influences of indigenous forms of social organization were also used in three other African interventions. Here it was concluded that the kabilo approach contributed to the increased rate of contraceptive use in intervention circuits (Luck et al., 2000).

The intervention in Navrongo (Debpuur et al., 2002) used community leaders to mobilize community action, and the intervention relied heavily on traditional social cooperation which is deeply rooted in the Ghanaian culture. This was the Zurugelu arm of the intervention. The independent arms had no apparent effect on contraceptive use but the combined nurse outreach and Zurugelu arm did.

Awoonor-Williams et al. (2004) described an intervention which was an extension of the intervention reported by Debpuur et al. (2002), also involving multiple aspects and one of these was the use of traditional communication networks called durbars. These provided a forum for communication and encouraged community dialogues on family planning amongst males and females. Due to the ethnolinguistic diversity of the population traditional leaders held solely honorific roles and instead teachers, elected officials and clerics were used to organise durbars in order to overcome linguistic issues present with heterogeneous community leadership (Awoonor-Williams et al., 2004). The additional issues presented by the ethnolinguistic diversity in Ghana were discussed in the previous section under the Identity category, although it would also

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have affected the communication of ideas and behavioural change (Awoonor-Williams et al., 2004). The successful adaptation of the Navrongo approach was attributed to the adaptation of the intervention to the local context (Awoonor-Williams et al., 2004).

In Afghanistan (Huber et al., 2010) the intervention did not focus only on the positive promotion of contraceptive use, but also balanced this message with an emphasis on the safety of using contraception compared to the risks of pregnancy. They relied on the traditional religious network of the Mullahs to invoke acceptance and trust in the intervention and through communication, misconceptions were addressed and dispelled. It appeared that the risk-benefit approach of promoting contraceptive use over pregnancy led to rapidly increased contraceptive use. However, there was not much analysis provided to back up this conclusion.

Misconceptions and fears were also identified by Chapman and Gordon (1999) and the IEC methods used in the interventions were intended to address this barrier. This aspect of the intervention appears to have been successful as in the feedback it was reported that respondents now appreciated that modern contraceptives were free, reliable and easy to use (Chapman and Gordon, 1999).

5.8   Discussion

The majority of interventions were, in general, successful as they led to increased or sustained contraceptive knowledge and use in the intervention sites. However there were some aspects of interventions which seemed to be particularly useful in overcoming certain cultural barriers. These have been highlighted in Table 5.7, some

Table 5.7. Summary of intervention successes and failures

	Values		Identity		Communication	
	Intervention successes	Intervention failures	Intervention successes	Intervention failures	Intervention successes	Intervention failures
Abbott and Luke 2011		• social norms restricted provider from access clients from all backgrounds		• intervention highlighted segregation	• increased interactions led to increased contraceptive use	• CBD activity did not increase communication with all community memebers
Awoonor-Williams et al. 2004				• not all ethnic differences were overcome	• successful adaptation for differenet ethnolinguistic groups	
Bossyns et al. 2002			• services became more inclusive		• practitioner initiated dialogues were successful in incorporating non-users in discussions	• succeptable to quality of client-provider interactions
Chapman and Gordon 1999			• female agents were empowered • male agents became more caring • gender relations improved		• CBD agents encouraged spousal discussion • IEC methods successfully conveyed that contraception is free, reliable and easy to use • male opposition decreased through male counsel	
Debpuur et al. 2002	• contraceptive use legitimised • new ideas introduced		• women were empowered • men were ressaured family planning was accepted		• in the duel arm of the intervention	
Gazi et al. 2005					• increased use of clinics led to greater communication	• communication remained constrained by social distance
Hennink and Clements 2005			• women were seen as confident role models		• discussions increased knowledge	

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	Values		Identity		Communication	
	Intervention successes	Intervention failures	Intervention successes	Intervention failures	Intervention successes	Intervention failures
Huber et al. 2010			• using supporting religious quotes • meetings with religious leaders • men became more supportive		• clear messages, supporting use and safety of contraceptive use were successful	
Kambo et al. 1994	• increased social acceptance		• women felt empowered		• increased access to family planning discussions	
Luck et al. 2000				• a half-day religious discussion • caste differences were highlighted by the intervention	• visits from the health subcommittee increased contraceptive use • involvemnet of different clans increased	
Mavanza and Grossman 2007				• did not address male exclusion	• assuaged some fears	• fears of non-users not addresses
Mercer et al. 2005					• some respondents favored the static clinic services	• respondents would still value home visits as a source of information
Miller 1998			• family planning use by men increased		• increased spousal communication lead to more harmoneous relations	
Phillips et al. 1996	• change in reproductive preferences and sex of desired children		• women were seen as confident role models		• CBD contact was most important	
Routh et al. 2001			• lacked community mobilisation		• despite decreased doorstep communication contraceptive prevalence increased	

interventions mentioned cultural barriers but did not report on the effects of the intervention upon all identified barriers or the intervention did not attempt to overcome them. This is necessary to explain the blank spaces in Table 5.7 which do not necessarily tally with the items identified in Table 5.5.

When interventions tried to overcome Values it was found that involving an element of social cooperation, especially through traditional networks, already present in communities, was successful at overcoming barriers posed by social norms, which were not necessarily addressed by individual outreach (CBD or nurse) interventions. Prata et al. (2005) found that CBD activities became ineffective if they failed to build support by involving local organisations in service implementation. The need for support was reflected in interventions which used kinship and traditional networks at a local level. These not only helped with program acceptance but also proved effective forums for health discussions (Awoonor-Williams et al., 2004, Debpuur et al., 2002, Luck et al., 2000) as they were tailored to the specific cultural settings in which they were implemented.

It was found that not all sensitisation meetings were successful in addressing social norms which did not accept contraceptive use, which could have been dependent on frequency or length of these meetings. Community wide meetings addressed each of the three sociocultural categories. However the common feature across the interventions was that those with repeated, sustained and substantial community sensitisation were more successful than those who held one-off meetings, with regards to changing fertility Values or to emphasise religious acceptance.

Agents were found to be successful vehicles for information dissemination (Huber et al., 2010, Awoonor-Williams et al., 2004, Hennink and Clements, 2005, Debpuur et al., 2002, Luck et al., 2000, Kambo et al., 1994) and effective training helped to ensure this (Kambo et al., 1994). However when examining the Value barriers the extent to which individual fertility preferences and values could be addressed through door-step outreach was not clear-cut. Some papers reported that new ideas about childbearing could be fostered more successfully through one-to-one outreach. On the other hand

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some authors felt that it was less the crystallisation of demand, rather than the fulfilment of demand which was enabled through outreach. Household based CBD activities were found to bring about some changes related to preferences for children of a certain sex when the intervention involved this as a specific target.

Where service delivery was focused on static clinic services the interventions were successful in retaining existing contraceptive use levels (Hennink and Clements, 2005, Mercer et al., 2005), suggesting that clients are not necessarily lost through changes in service provision but neither are many new users recruited. In the intervention described by Mercer et al. (2005) service users stated they would still value home visits. This was the only intervention where the service delivery system was modified and home visits were stopped completely and it is likely that a gradual extraction of community based distributors would have further increased the success of this intervention (Mercer et al., 2005). Additionally this supports the need for community mobilisation to help dissipate negative social norms as well as creating new demand through greater acceptance.

Generally it was thought that outreach workers would be able to access non-users who may not consider visiting a family planning service. However CBD activities were not always universally inclusive and intervention failures were related to the exclusion of certain groups, whether it was non-users, men or members of specific castes, so no particular aspect of sociocultural factors could be highlighted here either. The conflicting responsibilities of being agents of social change whilst also being members of the community, demonstrates the limitations of CBD activities. The strong social norms of maintaining social distance from men and not discussing reproductive and sexual health issues with adolescents, excluded these two sub-groups of the population from full service provision in the intervention implemented in India (Abbott and Luke, 2011). The project required CBDs to approach both these subsets of the target population, yet despite training in overcoming this, providers chose not to. The program needed to be better tailored to the social context in which it was implemented. In this instance a better balance of male and female CBDs could have

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been employed; at the time of the study males held supervisory roles and were fewer in number than the female CBDs, yet men were relied upon to address family planning issues with men.

Non-discriminatory ways need to be found of accessing the groups who experience continued restrictions to intervention exposure (Abbott and Luke, 2011, Awoonor-Williams et al., 2004, Luck et al., 2000). It could be done through greater sensitisation at the community level and not only through training providers, who without full community support may feel that access for all could compromise their own social standing. Alternatively by integrating family planning services with basic health services family planning services were offered to users and non-users alike (Bossyns et al., 2002). Prata et al. (2005) found that integrating CBD activity with other heath outreach activities maximised resources and made interventions more effective. Here it is evident that even integrating family planning services without CBD activity is successful.

It was noted in section 5.7.3 that only one intervention used family planning in the names of intervention agents. This could be due to trying to increase their acceptability amongst communities, by calling themselves health providers they may gain easier access than if they were more overtly focused on family planning. Additionally as two-thirds of intervention providers also equipped with additional health advice or commodities this may account for some of the more general provider names.

The importance of delivery agent characteristics was highlighted by Prata et al. (2005). In this review male agents were found to become more caring and supportive through their involvement interventions (Huber et al., 2010, Chapman and Gordon, 1999) and when explicitly involved in outreach male agents were successful in reassuring men that contraceptive use is acceptable, leading to decreased male opposition to use (Debpuur et al., 2002, Miller, 1998). In the role of intervention providers women were seen as confident role models which had a positive impact on women. Additionally the involvement of women in interventions and the decision making process led to further

empowerment to implement their own desires (Huber et al., 2010). Similarly to the Prata publication the current review concludes programs would benefit from a combination of male and female agents, working together to educate both men and women about contraceptive use and availability.

Warwick (1988) suggested that involving religious leaders in program design alongside the avoidance of offensive elements and the inclusion of methods favoured by the religion would be successful. This was supported by the findings of the intervention in Afghanistan where religious leaders were involved in the intervention, from crafting the intervention to integrating Islamic teachings into the intervention materials and openly promoting contraceptive use (Huber et al., 2010). The increased acceptance and use, by not only the target population but the Mullahs themselves, suggests that an extended and ingrained exposure to religious advocacy of family planning can have positive effects. The failure of the Imam meetings (Luck et al., 2000) to change the way respondents viewed Islam and family planning in the Gambia, may have been due to the fact that a half-day discussion is not long enough to foster any deep rooted changes in the interpretation of Islamic beliefs towards family planning and further emphasises the need for sustained advocacy from religious leaders. Although Prata et al. (2005) concluded that CBD training should remain brief, the dissemination of information from intervention agents to the general population may need to be more prolonged at initial stages of implementation.

Communication variables often cross into the other two categories as Communication is often the mechanism used to address the individual sociocultural barriers present in Values and Identity. As the interventions all had an element of success, either retaining current contraceptive levels or increasing use their communication methods were all successful to a certain extent. Four clear messages arise from this analysis, related to Communication.

Firstly outreach has a positive impact on contraceptive use, gained through one-to-one communication of services and provision of commodities. Additionally when used alongside community wide social awareness activities the positive impact of outreach

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is further increased. Secondly encouraging men to participate in family planning discussions, either through community-wide exposure, inclusion in couple interactions or through individual male-to-male dialogues helps encourage balanced and renewed marital relations. The key is not to isolate one gender or the other but to motivate them to work together to enact their fertility desires. Thirdly when clear, supportive messages are disseminated (through information pamphlets or IEC activities) acceptance and desire to use is amplified. Finally combining family planning with general health care provision is successful in increasing contraceptive exposure for users of the health facilities involved, whether they are contraceptive user or non-users.

However there are some areas whereby the chosen communication methods were not fully successful. For example where social distance remained and communication with all members of a community was not truly implemented, here it would be suggested that community sensitisation would be necessary alongside the outreach. Where the fears associated with contraceptive user remained among the non-user community, these communities could also benefit from community wide awareness activities. It must also be noted that although incorporation of outreach with general health care provision was successful in the study by Bossyns et al. (2002) the use of such facilities is particularly susceptible to the quality of the client-provider interactions and other supply side barriers will begin to influence individual acceptance and desire for contraceptive use. This was also highlighted in the review by RamaRao and Mohanam (2003), where improved client-provider relations which were observed in the interventions reviewed led to increased client satisfaction, adoption and continuation. This is particularly interesting as the interventions reviewed by RamaRao and Mohanam (2003) were not included her as they were not targeted, suggesting that quality of care is important for the continued success and improvement of both national and local interventions.

It is possible to see how effective targeted interventions can be modified and implemented in different areas and remain successful, as this review identified two

replication studies, both of which had positive outcomes in the replication intervention sites. Awoonor-Williams et al. (2004, p.166) mentioned that the initial intervention was adapted to local needs and the operational design was slightly different, but that it was guided by the "common principles of improving access, extending the range of health care options, enhancing service quality, and building the social compatibility of the system of care". Likewise in the Matlab extension project (Phillips et al., 1996) innovations from the Matlab intervention were transferred to the public-sector intervention to see if the same results were possible if no incremental resources were given to the project and focus was placed on the service approaches used. It was concluded in this instance that outreach is the "largest single contributor to overall [intervention] impact" (Phillips et al., 1996, p.212). it is necessary to note that ethnic differences remained in the intervention examined by (Awoonor-Williams et al., 2004) however this is most likely due to non-linguistic characteristics of the ethnicity related to Values which would need to be address by future interventions.

An important factor to consider when looking at these interventions critically is that "cultural barriers… change gradually over a long time period" (Bossyns et al., 2002, p.389). Therefore where the successes were minimal at the end of the intervention period, they may become more prominent as ideals, beliefs and community norms being to change more visibly after the endline statistics have been collected. The observation by Debpuur et al. (2002) that introducing information and enhancing awareness about contraceptive methods was more effective in the first intervention year, and that the combined intervention site performed well on all accounts suggests two things: Firstly, an intervention which combines the elements of increased access and communication activities to promote acceptance may not be beneficial in the first instance, as without empowerment women may still not implement their reproductive preferences. Subsequently, as awareness is translated into knowledge, this element of the intervention may be scaled down in order to focus on accessibility. Although initially CBD may be the best method for service delivery where contraceptive use and acceptance is low, it has been shown that it is also possible to scale back these

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activities and bring family planning services together in static clinics without adversely affecting levels of contraceptive use. This also ties in with the findings from Behrman et al. (2002) "that social networks are likely to have large effects on behaviour as long as innovation is not widely disseminated" (p.735).

Although not explicitly stated the findings reported here indicate that the dynamic nature of fertility desires and contraceptive use needs to be reflected through adaptable intervention implementation, enabling evaluation and evolution as time passes from intervention debut. Therefore these is no straightforward one solution fits all but various avenues for approach are presented which, depending on the sociocultural barriers present, may be combined to create a comprehensive and successful family planning intervention.

5.9   Limitations

One of the considerations for systematic reviewers is whether or not all the relevant studies were identified and included in the synthesis stage. Problems with achieving a complete systematic review can occur at the search creation, identification and retrieval stages. Using a wide search strategy, with many search terms, aims to reduce early exclusion of relevant studies. In order to minimise the mis-classification of relevant studies as irrelevant the abstract was consulted for any studies with questionable titles and the full text was required for any papers which may have been relevant based on the abstract, or for papers with no abstract. The greatest challenge for this systematic review was the acquisition of full texts of publications that appeared in non-mainstream journals. Some of the 103 studies which were inaccessible may have been relevant and would preferably have been included in the review. Therefore, it is important to note that some relevant studies may not have been included (see Figure 5.3).

It may be contested that some articles which have been excluded should not have been. For example it could be thought that 'Increasing Access to Family Planning

Services in Rural Mali Through Community-Based Distribution' by Katz et al. (1998). However, due to the strict exclusion criteria, the fact that this article does not state why the specific target population has been chosen, past the existing presence of Save the Children in this particular area of Mali, would have been grounds for exclusion. The date of publication for an intervention evaluation article to be included was also a major reason why interventions identified by Phillips et al. (1999) were not included in this review.

Selection bias is not restricted to the articles which are included but also relates to the information selected for extraction and the subsequent coding process. During the selection of studies to be included the main thesis supervisors were used as a mediating committee and the inclusion of questionable articles was discussed until a consensus was reached. This process resulted in the exclusion of 38 articles (presented in Figure 5.3). The coding process was also discussed with this committee although the final data extraction and coding was all done by myself which may mean that this review is subject to some extraction and coding bias. However the use of a transparent coding system and the clear and specifically tailored inclusion and quality assessment criteria mean that this study should be successfully replicable by external parties and it would be expected that similar conclusions would be drawn.

This review is subject to publication bias and methodological bias. As only electronic databases were used for searching the results might be subject to database and citation bias. This may be overcome by removing the language restriction and completing hand and grey literature searches which could be carried out as part of a future expansion of this review. Publication bias will occur because specific types of studies are published and accepted as papers and also people may be selective with the papers they submit for publication. For example organisations may not want to publish work in instances where interventions were unsuccessful or they may choose to review only the successful parts of interventions. In medical meta-analyses reviews the mandatory registration of clinical trials attempts to overcome this bias. In the social sciences the only viable method would be to include grey literature. Although

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these were not included here, the intention of this review is to provide a grounded systematic review to which relevant unpublished studies and grey literature can be added at a later date. Additionally by searching multiple databases, some of the elements associated with publication bias were addressed as different studies were picked up through different searches.

Another limitation of this systematic review is the comparability of the studies. There is no prescription of what must be included when evaluating interventions and a systematic review is dependent on the identified articles in two ways: what is said, and what is not said. In terms of the information that is included in the studies for review, difficulty arises when trying to compare the results of the interventions and questionability arises as to how valid the comparisons can be. The second point is very important, especially for the current systematic review; this is because omission of facts does not mean that the intervention did not include something, it just means that the author of the evaluation did not deem it necessary to include the information. For example the study by Phillips et al. (1996) does not report on any specific type(s) of contraception, considering supply is part of the intervention and increased contraceptive use is an outcome. This omission means we are not aware of which contraceptive methods were made available through the intervention. Additionally, more relevant targeted interventions were identified than were reviewed but this was because they did not include an evaluation of the intervention and so did not fulfil the inclusion criteria. That is to say they were excluded not because the intervention was not strong enough, but because the evaluation report was not strong enough.

Moreover it must be stated that although "some problems might be reduced by closer attention to local understandings… others will remain no matter how much culture is scrutinized" (Warwick, 1988, p.16). Therefore it is important to note that interventions which address sociocultural barriers to contraceptive use, regardless of how tailored they are to a specific population will need to be considered in the economic and political context of implementation. This does not mean however, that they cannot be

successful, just that unmet need may remain at some level irrespective of the interventions being undertaken if all avenues of influence are not considered.

5.10   Conclusions

In 1988 Warwick stated that "If culture is not relevant, the review can be short… emphasis should be put on what is happening and could happen in the field" (p.16). This review attempted to do just that, exploring how interventions operate in different regions to overcome sociocultural differences in the acceptance and successes of family planning interventions. The subsequent review was relatively short in terms of the number of papers finally included for review, possibly due to the strict inclusion criteria. Nonetheless this review provides a comprehensive advisory document towards recommendations for ways to create family planning interventions that enable couples to overcome sociocultural barriers to implementing their fertility choices. By attempting to present both the successes and failures of interventions additional insights into what might work are clearly laid out for policy implementation, which would not have been possible with a traditional literature review (Phillips et al., 1999).

It is clear that family planning service delivery can initiate and sustain reproductive change if the specific requirements and barriers to accessing these needs within a population are taken into account. The sociocultural barriers which were evident in the intervention areas were generalised under the three main groups, Values, Identity and Communication. Within the studies it was sometimes difficult to identify specific barriers as occasionally they were hidden within the text rather than explicitly signposted as affecting contraceptive use. Additionally it was evident that despite these three broad classifications there was an overlap between the groups and which aspects were addressed specifically by the interventions. Therefore the discussion of certain intervention characteristics was discussed in relation to more than one category. This shows that there is significant interplay between the three groups and

suggests that it may be more beneficial to examine them together as a construct of sociocultural factors rather than independently in the three separate groupings.

Interestingly the identified sociocultural barriers were experienced in the targeted or local populations in both African and Asian intervention areas and are therefore not necessarily country specific. This supports the findings of Williamson et al. (2009) that the major limits to contraceptive use seem to be common across countries, in different contexts and settings. This is an important finding as it implies transferability of successful strategies. Furthermore transference of interventions within countries was evident in the replication of service delivery observed in two of the interventions included in this review. There is also evidence that interventions are successfully interchangeable between countries, as shown by the effective replication of the intervention investigated by Luck et al. (2000) in the Gambia, based upon the intervention already undertaken in Ghana.

Interventions which did not take into account that ideational change and the acceptance of new ideas and beliefs take time noted some element of program failure or non-response to specific aspects of the program. For example, a half-day meeting to discuss religious acceptability did not lead to a greater understanding of how religion accepts family planning, suggesting that in order to overcome this barrier the issue may need to be addressed to a greater extent. The failure of one of the interventions in India was that the social norms of purdah and caste discrimination were not addressed successfully by the intervention strategy and hindered the comprehensive implementation of the intervention. Interactions between clients and agents are greatly influenced by social norms related to interaction and if these are not addressed through the interventions, certain people will remain excluded from service provision. Social mobilisation and the use of traditional networks and influential members of society were found to assist intervention success, and were lacking in the aforementioned cases.

The interventions presented in this review all included an element of supply and accessibility, most also had demand mobilization strategies and nearly half included

community meetings in their delivery strategies. The findings of this review are similar to the that of Reddy (2009, p.26) whereby access and cultural factors must be addressed by interventions and they must be adaptable. It is clear from this review that in a society where values support high fertility it is necessary to implement an intervention which will also foster ideational change and acceptance among the general population alongside aspects of outreach and increased provision and accessibility.

When the intervention involved changing activities from a CBD based approach to a more sustainable static clinic delivery system a demand crystallisation strategy must be included in order to continue fostering changes in social norms related to childbearing. This is similar to the findings of Freedman (1987) whereby programs alone may not be enough to create demand in areas where none exists. The systematic review of Mwaikambo et al. (2011) which looked at both focused and national interventions also found that interventions with varied approaches were generally more successful.

Religion was most successfully addressed as a barrier by interventions with enhanced and evident advocacy from religious leaders emphasising that contraceptive use for improved health reasons was tolerated. The intervention in Afghanistan was the most successful example of an intervention overcoming the religious barrier to contraceptive use (Huber et al., 2010). That religious leaders were also using contraception reflected their personal advocacy for its use. It provided a flexible, culturally sensitive approach which Huber et al. (2010) felt could be applied successfully in many rural societies. Similarly the support of influential and respected members of the communities helped legitimise family planning messages and the use of contraception. Which is comparable to the findings of Bongaarts and Casterline (2013) that if there is support from leaders, in this case political leaders, then family planning messages are even more effective.

As concluded by Mwaikambo et al. (2011) before interventions are implemented it is necessary to know specific information on the actual beneficiaries of the intervention. When the barriers present are identified then an intervention may be tailored with

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these in mind. Communication messages need to be clear, health benefits should be accentuated and information needs to be accurate. These messages may be spread through social mobilisation and can encourage legitimisation and acceptance where previous social norms did not. Outreach can provide and embolden women and men alike to embrace the benefits of family planning. Monitoring at the local level is necessary to ensure that all groups in society are incorporated, which can further be ensured by using a mixed gender team of intervention providers.

It is necessary to note that despite the criticism of previous systematic reviews for being too broad or focusing on adolescents some of the conclusions drawn in this review remains similar to those of previous reviews in the same general field of family planning. This suggests two things, firstly that perhaps the sociocultural barriers present for youth and adolescents are not that far removed from those to which married couples are exposed, despite the different needs and fertility desires of these groups. Secondly it suggests that although national interventions are not necessarily targeted at within community differences they may take into account some country-wide sociocultural barriers. However the investigation in this review at a local level will help provide the additional support needed for communities where national programs remain unsuccessful.

In terms of what may be done in the future; it is hoped that this review may act as the basis for a reference document which may guide future patterns of practice, learning from both the successes and failures of the interventions reviewed. The sociocultural barriers identified were not specific to a particular region or country and interventions have been shown to be geographically transferable. Therefore if barriers are identified in a locality an intervention which has successfully addressed this barrier elsewhere has potential to be successful.

6. Conclusions

This thesis set out to explore the importance of sociocultural determinants in the analysis of contraceptive use in West Africa. Firstly the theories of fertility decline were summarized and sociocultural barriers were presented, providing a richer way of understanding fertility decisions, especially across a diverse region like West Africa. Then, a range of sociocultural barriers, gathered from the available literature, were discussed. The list of sociocultural barriers is not exhaustive, but includes the major sociocultural determinants.

A conceptual framework was provided in which sociocultural elements were classified into three categories: Values, Identity and Communication. The three different categories were presented to explain the differences between various sociocultural elements. Although it may be argued that some factors could be present in multiple classifications and may have been grouped differently, the reason for their attribution to specific categories was explained. This framework was then used throughout the thesis to present and analyse sociocultural barriers with respect to contraceptive use.

Chapter 2 identified three specific sections within the Value category, four in Identity and five in Communication. Many of the sociocultural determinants of contraceptive use identified in Chapter 2 were found to be significant in West Africa. The restrictions of the data from the DHS meant that only two Value, three Identity and three Communication categories were operationalised in Paper 1. In this thesis polygamy, age at marriage, partner's age at marriage and length of marriage were not found to be significant determinants of fertility. It was not possible to explore specific aspects of personal interactions, spousal communication and social networks across the seven study countries.

It was hypothesised in Chapter 1 that differences in contraceptive use between West African countries might be related to the Francophone versus Anglophone colonial dichotomy which exists in this region. However, when a Francophone/Anglophone variable was included in the multilevel model it was found to be insignificant and so was not included in the final model. One reason that this variable may not have been

significant could be due to the fact that the colonial background which unites these countries, goes little beyond affecting the socio-political context (education and political systems) at an administrative level, which is diluted by the effect of other much more significant sociocultural variables.

Paper 1 supports the theory that regional and community differences are important determinants of contraceptive use. This highlights the importance of multilevel modelling when examining sociocultural factors. Not only does the nature of the data allow for this methodology but studies using multilevel modelling in this subject area, including this thesis, have identified the importance of community and regional level variance. Although there are no patterns with regards to the significant determinants of contraceptive use across or within countries the importance of accounting for multiple sociocultural factors is evident. Previous research has examined one or two of the sociocultural elements presented in this thesis but the significance of variables across the three sociocultural categories in all countries shows the necessity of including multiple sociocultural variables in analysis of this nature.

The qualitative element of this thesis brings to light two sociocultural influences which were difficult to operationalise using the DHS data in Paper 1: the role of husbands and religion. Religion was presented in the literature review as an Identity factor, whereas the influence of husbands is present in all three of the sociocultural categories. The effect of husbands on women's desire for contraceptive use was explored in Paper 1 through the wife's perception of her husband's desire for more children. In Paper 2, this was not explored in any depth, although some women stated that they may stop using contraception because their husbands desired more children, not themselves. This supports the findings of Paper 1, that couples who feel they want the same number of children are more likely to use contraception than those where the woman feels her husband desires more children. The influence of husbands is also present in the Identity category, with regards to gender roles. Again, although gender roles were not specifically discussed about in Paper 2, they were apparent in the analysis. For example where women felt they made the decision to use contraception but after

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further questioning it would appear that they would not become a user without the husbands acceptance of this decision. This suggests that women in Saint-Louis may not have autonomy over their reproductive health. Husbands were also discussed with regards to communication, as respondents felt that family planning communication needed to involve the male population.

In Paper 2 it was found that there are conflicting beliefs with regards to contraceptive use and religious acceptance. Both perceived and experienced opposition to family planning were presented by women at the locality level, despite the generally stated acceptance of contraception by the community as a whole. This was also given as a reason for the low uptake of contraceptive use in the region, by the regional representative for reproductive health Mme Naham.

Women in Saint-Louis were primarily motivated to use contraception by their perceptions of the health benefits of contraceptive use, despite many women recounting, often negatively, the possible side effects. This type of insight would not have been possible to establish from the DHS data. What is also interesting to note is that although contraceptive use for birth spacing is accepted in Saint-Louis, the concept of using contraception to limit births is regarded in the most negative light. This view is even held by the family planning providers at ASBEF. Whether or not limiting births is accepted by the community or religion, some women will reach their desired fertility level and will require a way of limiting births beyond this. In Saint-Louis where the average desired family size is between 4 and 5 children, women may not be exposed to many fertile years after their final birth, but contraceptive use or non-use could make the difference between having an extra child or not. Although this thesis does not explore the differences between women who use contraception for spacing or limiting it remains an area to be explored as demand for limiting births at the end of the reproductive period increases once optimal spacing is achieved. The respondents themselves said that the desired family sizes today are smaller than in the past. If they continue to decline as life gets more expensive and more children survive there will be an increased need for contraception for limiting family size.

One barrier included in Paper 2 was the lack of acceptance of contraceptive use by mothers-in-law. As observed in Paper 2, modern contraceptives were not readily available when the generation of mothers-in-law were planning their families. As current users, newlyweds and new mothers themselves become mothers-in-law and are exposed to family planning messages, this barrier may be reduced. However, for the time being making interventions more inclusive across generations rather than exclusive to certain age groups may result in greater success.

The findings of Paper 3 also support those of Paper 1, where sociocultural factors should not be explored in isolation, as here too factors related to Values, Identity and Communication were found to be important considerations for family planning interventions. Paper 3 presents successes and failures of family planning interventions across lower and middle incomes, which have been implemented at the locality level. It is suggested that successful aspects of interventions may be implemented in different settings to tackle similar sociocultural barriers.

In an area where ideal family sizes are high, an intervention will need to contain an element which addresses the benefits of having smaller families. Where reduced family size ideals have already been adopted, interventions directed and disseminating family planning information will be most beneficial. Furthermore, if a population with a common Identity are known for not being receptive to contraceptive uptake, messages within these populations need to be enforced through supporting documents and transparency of use from members with roles of influence. During the fieldwork period in Paper 2 some respondents stated that the Bajenu Gox did not use contraception. When asked about this she said that she was forty-eight years old and had never had a child so she did not need to use modern contraception. This is a personal revelation but it can be understood why women may question the use of contraception if the person telling you that you should use does not in fact use herself. In the intervention by Huber et al. (2010) where religious leaders openly used condoms, condom use in the local population increased.

All the chapters support the importance of including men in information, education and communication (IEC) activities, in order to address their family planning values and to allow couples to make informed decisions with regards to contraceptive use. The role of religion is not negligible as despite the cross-religion differences observed in Paper 1, the different viewpoints within religions, noted in the literature review and enforced in Paper 2, suggest that the messages disseminated by religion needs to be standardised. Additionally, the importance of addressing family values and ideals was highlighted in all three papers.

The advice presented in the discussion in Paper 2 suggesting that family planning interventions become more inclusive may seem contradictory as this thesis has focused on locality-specific interventions. However, what has been attempted here is to show the importance of accounting for population differences at each level from country, to regional, through to individual differences. It is recognised that it is not practical to implement a different intervention for each community but it is suggested that national family planning policies and interventions include regional diversification, such as those observed in the district of Saint-Louis alongside locality specific aspects similar to those identified in Paper 3.

It is felt that it is also necessary to recognise the importance of addressing socioeconomic inequalities, which make up the broader socio-political context of communities. This is shown in Paper 1 where the mean household asset index for the PSU was found to be a significant determinant of increased contraceptive use. This implies that in PSUs with more and improved resources, women are more likely to be contraceptive users.

This work is only a stepping stone towards understanding the vast differences in contraceptive use levels in West Africa. Future work could expand the analysis in Paper 1 to investigate a sociocultural index, or perhaps three separate indices for the three different sociocultural elements, although the crossover of variables into the categories would suggest an index could be better. Moreover, it would be interesting to replicate the fieldwork element of this research to see how the other countries

included in this study are reacting at a local level to the ever more accepted phenomenon of contraceptive. This would also allow an understanding of the "why" and motivations behind contraceptive use in these countries, which was not possible to explore through the DHS analysis. The final Paper may also be expanded and amended as new and relevant papers regarding locality-specific family planning interventions are published and identified.

In summary this research:

- Highlights that there are many factors involved with the term sociocultural.
- Recognises that by exploring specific sociocultural variables in isolation important variations may be excluded.
- In the seven West African countries examined, both the desire for more children and exposure to sources of family planning communication were consistently significant.
- In Saint-Louis, Senegal contraceptive use is generally associated with a positive health outcome of being less tired and the health implications tend to be at the forefront of discussions.
- Reinforces that sociocultural factors are both barriers and enablers to contraceptive use and the acceptance of family planning, as is the case when examining religion and the role of husbands in contraceptive use.
- Family planning interventions which have been successful at addressing a specific sociocultural barrier may also experience success if replicated in an area where the same barriers are present.
- There is a need for adaptability in interventions.

The implications for policies from these findings are twofold. The first is that if sociocultural barriers are not considered when creating family planning interventions there will remain wide discrepancies between the need for contraception and actual contraceptive use. Additionally all identified barriers must be addressed through program evolution and evaluation to encourage the greatest acceptance. For example

where religion and the view of husbands is identified as a barrier, increasing couple and male discussion will not address issues related to religious acceptance.

The second policy implication is that over the past thirty decades many successful interventions have been undertaken. Fifteen of those interventions have been identified in Paper 3. Rather than spending time creating new and innovative interventions, it may be more beneficial to use resources to identify which sociocultural barriers are present in various communities and then using previously successful structures implement an intervention which has been amended to address the needs of a particular group of people.

The recommendations are not that sociocultural barriers alone must be overcome to family planning interventions to be successful but that they must be included in intervention design. Additionally through the incorporation of evaluation methods interventions may be manipulated to account for the dynamic nature of sociocultural influences on contraceptive use. The need for specifically tailored and multi-faceted intervention means that research efforts should be included in the planning process, focused at the local level and incorporating stakeholder engagement and participation from the broader community.

Appendices

Appendix 1 Letter of welcome from ASBEF

Association Sénégalaise pour le Bien-Etre Familial

ASBEF

ASBEF
Nº 5, Route du Front de Terre
BP : 6084 DAKAR – Sénégal
Tél. (221) 824 25 62
Fax : (221) 824 52 72
Email : asbefdk@orange.sn

N/Réf. : 061/12ASBEF/BMD/FD

Dr Andrew « Amos » Channon
Lecturer in Demography
Division of Social Statistics
School of Social Sciences
University of Southampton
United Kingdom

4/16/2012

Re: Letter of welcome

Dear Dr Channon,

My name is Dr. Balla Moussa Diedhiou and I am the Executive Director of the *Association Sénégalaise pour le Bien-Etre Familial* (ASBEF), a national NGO working in the field of sexual rights and reproductive health, and a member association of the International Planned Parenthood Federation (IPPF). ASBEF was the first clinic to offer family planning services in Senegal.

I acknowledge receipt of your letter of 04/04/2012 requesting me to accept the internship application from Miss Megan Ledger in my institution and I would like to thank you for your interest and I agree to welcome her and to give her all our support and cooperation in her fieldwork in Saint-Louis, Senegal.

Our coordinator in Saint-Louis will facilitate contacts on site with Lux - Development Team who is implementing the project in the Northern part of Senegal. For your information, I represented the Government of Senegal in this project for one year (May 2008 to June 2009) as Senior National Advisor.

Best regards,

Dr Balla Moussa DIEDHIOU

Executive Director
Association Sénégalaise pour le Bien-Etre Familial – ASBEF
5, Route de Front de Terre, BP : 6084, Dakar
SENEGAL
Tel : (+221) 33 824 25 62 Cellphone : (+221) 77 819 62 25
Email : bmdiedhiou@gmail.com
Website : www.asbef.org

ASBEF
5, Rte du Front de Terre
BP: 6084 Dakar
Tél. 33 824 25 62 - Fax 33 824 52 72

IPPF International Planned Parenthood Federation
Africa Region

Appendix 2 Authorisation from Lux Dev

LUX DEV
Agence Luxembourgeoise pour la
Coopération au Développement

Visa :

Mademoiselle Megan LEDGER
Postgraduate Research Student
Room 2029 Building 58,
Social Sciences,
Highfield Campus,
University of Southampton
Royaume Uni

Saint-Louis, le : 11/09/2012

N/Réf : VI-CGC_OPE_12_00874

Objet : CGC/OPE -
Autorisation de citer

Par la présente, j'atteste de ma rencontre avec M. Ledger en nos bureaux le 07/08/2012 et l'explication de son projet de stage intitulé : « l'impact d'une intervention socioculturelle de la planification familiale à Saint-Louis Sénégal : une perspective locale », en vue de la réalisation d'un PHD à l'université de Southampton sur la santé maternelle et infantile.

En foi de quoi, et après concertation avec le bureau régional de LuxDev à Dakar, je l'autorise à utiliser et citer les documents de la composante santé de base (SEN/025) du programme de coopération Sénégal – Luxembourg 2007 – 2011.

Fabien FOCHT
Coordonnateur des Opérations

Programme de Coopération bilatérale Sénégal - Luxembourg 2007-2011
A Cité Vauvert – Route de Kher BP 5595 Saint-Louis T +221 33 938 26 50 F +221 33 961 53 46
E ser.ux@luxdev.lu www.luxdev.lu/senlux/

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Appendix 3 Certificate of RA internship at ASBEF

ASBEF ANTENNE DE RICHARD TOLL

DISTRICT SANITAIRE DE RICHARD – TOLL

BP: 46   Tél/Fax: 33 963 36 12

Gaé 2   Richard-Toll

ATTESTATION DE STAGE

Je soussigné, *Monsieur ARFANG MOUHAMADOU MBAYE Coordinateur des Programmes / Chef De Projet « SUNU DOOM » ASBEF Antenne* de Richard Toll atteste que :

Mademoiselle Mame Diarra FAYE née le 24/11/1987 à Saint Louis,

Etudiante en licence trois Santé et Développement Durable, option Santé Communautaire, a effectué dans notre structure un stage du 11 Juillet 2011 au 16 Août 2011 dans le **Cadre du Projet Sunu Doom/ Programme de Renforcement de la Nutrition.**

Au cours de ce stage, mademoiselle FAYE a fait montre de sérieux et de discipline dans le travail

En foi de quoi cette présente attestation lui est délivrée pour servir et valoir ce que de droit.

A Richard Toll, le 16 Août 2011

Monsieur ARFANG MOUHAMADOU MBAYE

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Appendix 4 Certificate of RA internship at PLAN

Plan Sénégal
Au service de l'enfance
Rue 5 X E POINT-E
BP 15042
Dakar-Fann

Tel (221) 865 35 50
Fax (221) 825 88 68
www.plan-international.org

Plan

ATTESTATION DE STAGE
****

Nous soussignés Plan Sénégal, attestons que Mademoiselle Mame Diarra FAYE, a effectué un stage pratique de 02 mois (du 03 Août au 30 Septembre 2010) à l'unité de programme de Saint Louis.

Durant tout son stage, Mademoiselle Mame Diarra FAYE a fait preuve de sérieux dans le travail et nous a laissé une très bonne impression.

La présente attestation est délivrée pour servir et valoir ce que de droit.

Fait à Dakar, le 06 Décembre 2010

Gana CISSE
Directeur des Ressources Humaines
et de la Culture Organisationnelle

Appendix 5 Mame Diarra CV

Mame Diarra

FAYE

23 ans

Sor Daga Saint-
Louis Sénégal

77 900 85 81

mamediarrafaye
25@yahoo.fr

FORMATION

2007-2011 :   Licence Santé Développement Durable

Université de Bambey

2004-2007:   Baccalauréat série l2 Sciences Sociales et Humaines

Lycée Charles De Gaulle, Saint-Louis

1999-2004:   Brevet de Fin d'Etude Moyenne

CEM Amamadou Fara Mbodj, Saint-Louis

1994-1999:   Certificat de Fin d'Etude Elémentaire

Ecole Mamadou Charles Niang, Saint-Louis

EXPÉRIENCES PROFÉSSIONNELLES

Juillet/Aout 2011: Stage Communautaire, ONG ASBEF

Richard-Toll, Projet PRN "SUNU DOOM".Animation de causeries, pesées mensuelles au niveau des sites d'intervention du projet, enquête de base pour l'identification des déterminants de la malnutrition, saisie de données des rapports mensuels du projet.

Aout/Septembre 2010: Stage Communautaire, ONG Plan Sénégal, projet PMI, Saint-Louis -enregistrement rapports ECS, visite à domicile à Fass Ngom, IEC/CCC, enquête LQAS.

Septembre/Octobre 2008: Stage hospitalier, Poste de Santé Pikine à Saint-Louis pratique de soins élémentaires en santé, consultations prénatales, Sensibilisation des femmes enceintes sur les bonnes pratiques ; accueil et vente de médicaments en pharmacie.

Langues : informatiques, Français et Anglais: lu et écrit

Maitrise de Word, Excel et Power Point

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Appendix 6 In-depth interview question guide

Thank you for agreeing to do this interview. Before we start I would like to remind you that there are no right or wrong answers in this discussion. We are interested in knowing what you think, so please feel free to share your point of view. It is very important that we hear your opinion. You are also able to refuse to answer a specific question but carry on with the interview or to stop the interview at any point. Just to check, have you signed an informed consent form? You are also OK with me recording the interview?

That's great, I will switch the audio recorder on now

1. What is your name?
- How old are you?
- Where did you grow up?
- How long have you been married?
- What is your education background?
- What is your partners education background?
- What is your religion?
- How many children have you had?

2. According to you, what are the reasons for:
- Having a lot of children?
- Having few children?
- Waiting a certain amount of time between pregnancies?

2. What do you think of when you hear the term family planning?
- How do you feel about family planning?
- What kind of experiences do you associate with family planning?
- What does it mean to you to be able to control your own fertility?

3. Where did you first learn about family planning?
- What did you learn from this source?
- Did they tell you about different contraceptive methods?
- Which ones?

4. Where do you get information about family planning now? Or where could you go?
- Are there many family planning services in your community?
- Can you tell me about them?
- Have you ever used any of them? What did you go there for?
- Did you feel satisfied by the service?
- Have you ever used other family planning services?

If they are a current user:
- Where/from whom do you obtain your contraception?
- Why did you decide to use this particular method?
- Did you decide to use contraception on your own or did you make the decision with someone else? Did someone else decide for you?

5. During community gatherings, do you discuss family planning issues?

- If so – at what types of gatherings are these discussed? What sort of topics do you discuss? What are the reactions of the people present?
- How do you feel about discussing these issues at community gatherings?
- What are the different places where you discuss these issues?
- What are the occasions in which you discuss these issues?

6. How involved are religious leaders in contraception and family planning?
- What about chiefs?
- What about politicians?
- What about women?
- What roles do these types of people play? Please explain.

7. What are some reasons women might choose a modern method over a traditional one?
- What are some reasons women might not want to use any of these methods?
- Why would a woman who had already decided to use one of these methods change her mind? Has this ever happened to you?

8. How do people in this community feel about family planning?
- Do you discuss family planning with other members of the community? Who?
- What kind of thing do you talk about?

9. What barriers prevent use of contraceptive methods in your community? Please explain.
- How do you feel the family planning services provided in your community effect these barriers?
- What do you think could be done to encourage more women to use contraceptives in your community?

10. For you what is the ideal number of children in a family?
- In this family, how many girls? How many boys?
- What is the ideal number of years to have between children?
- Is there an ideal order in which female and male children should be born? If so, what is the preferable birth order for girls and boys?

11. In your opinion what motivates women to use contraception?
- Do you think there are many women using contraception in your community?

If user:
- What motivated you to use contraception?

If non-user:
- Why do you not use contraception?
- Do you think you might use contraception in the future?

Let's summarize some of the key points from our discussion. Is there anything else?

Do you have any questions?

Thank you for taking the time to talk to us!!

The questions used in this guide were adapted from: Sample Focus Group Discussions and In-Depth Interview Guides, Family Health International 2004.

Appendix 7 Focus group question guide

Note to facilitators: Instructions to you are in bold print. Questions for you to read out are in standard print.

Each focus group will have two people to facilitate the sessions - one to lead the session, the other to take notes and make sure the recording equipment is running properly. Remember to take a note of the group session and to record this on any tapes or note sheets used during that session.

Everyone should be involved in the discussion and as far as possible a group viewpoint should be reached. Both majority and minority views should be recorded, although some conclusions should be drawn as a result of the discussion. The following is a guide, so it is not important to follow it in order but to cover the main topics throughout the overall discussion. Start by reading the introduction and then your role is to maintain the flow of discussion.

Introduction

Thank you all for coming today and taking part in this study. My name is **(NAME OF FACILITATOR)** and I will be leading the discussion today. This is Megan, who will be helping me. She will not be participating in the discussion and will just be listening and taking some notes. Before we begin, so that you know what to expect, I am going to tell you all about the study and exactly what is going to happen. If you don't wish to carry on at any point, please let myself or Megan know.

I want to again emphasise that your participation today is voluntary. In order to maintain confidentiality and respect we ask you not to discuss with others what you hear today, if you would not wish the said to be said about you.

If there are no objections switch on the audio recorder.

I'm very grateful to you all for sparing time today to talk about family planning and contraceptive use in your community. I would like you to be aware that there are no right or wrong answers, please say what you really feel. We are interested in what everyone has to say and would like you to feel comfortable, and talk like you would amongst friends. Although there are certain topics I will cover if you would like to talk about something I have not covered please let me know.

To start with could we go round the group and introduce ourselves.

Then to get the conversation going:
1. Do you think that in the past your mothers and grandmothers had more children than you do today? Why do you think this?
2. Why do you think women would want many children?

3. Why might they want fewer children?
4. In your opinion is it better to have girls or boys, or a mixture of both?
5. If you only had girls but you really wanted a boy what would you do?

Family Planning
1. How do you know, or when do you decide that it is the right time to have another child?
2. If it is not the right time what would you do in order to not get pregnant?
3. Have you heard about family planning? What does it make you think of? Why?
4. What does it mean to you to be able to control your fertility?
5. Where did you hear about family planning for the first time?
6. What did you learn from this source?
7. What family planning services are there in your community?
8. What experiences do you associate with these services?
9. What experiences do you associate with family planning?
10. In your opinion why might a woman not use family planning?
11. Why might she decide to use family planning?
12. Who have you discussed family planning with?
13. When you want information about family planning who would you go talk to?
14. Are there any people with whom you would not discuss family planning? Why not?
15. If you talk about family planning, what do you normally talk about?
16. How do you find these discussions? (useful/not useful?)

Contraception
1. In the past do you think women used contraception? What makes you think this?
2. Nowadays do you think women prefer to use contraception?
3. Do you think that contraceptive use is accepted by your community?
4. What are the obstacles to using contraception? And what about with regards to religion?
5. What can we do to overcome these difficulties?

Closing questions

Summarize the key points

I think we have covered everything, but do you feel there is something I have missed out?
Would you like to discuss further anything that has already been said?
Thank you for your time, the discussion has been most valuable. I am going to turn of the audio recorder now.

At the end of the session, make notes about how the session went, where there any problems?

The questions used in this guide were adapted from: Sample Focus Group Discussions and In-Depth

Interview Guides, Family Health International 2004.

Appendix 8 Ethical approval Southampton University

UNIVERSITY OF
Southampton

Miss Megan Ledger   RGO Ref: 8592
School of Social Sciences
University of Southampton
University Road
Highfield
Southampton
SO17 1BJ

24 May 2012

Dear Miss Ledger

Project Title Exploring the Impact of a Sociocultural Family Planning Intervention in Saint-
Louis, Senegal: A Local Perspective

This is to confirm the University of Southampton is prepared to act as Research Sponsor for this
study, and the work detailed in the protocol/study outline will be covered by the University of
Southampton insurance programme.

As the sponsor's representative for the University this office is tasked with:

1. Ensuring the researcher has obtained the necessary approvals for the study
2. Monitoring the conduct of the study
3. Registering and resolving any complaints arising from the study

As the researcher you are responsible for the conduct of the study and you are expected to:

1. Ensure the study is conducted as described in the protocol/study outline approved by this
   office
2. Advise this office of any change to the protocol, methodology, study documents, research
   team, participant numbers or start/end date of the study
3. Report to this office as soon as possible any concern, complaint or adverse event arising
   from the study

Failure to do any of the above may invalidate the insurance agreement and/or affect
sponsorship of your study i.e. suspension or even withdrawal.

On receipt of this letter you may commence your research but please be aware other
approvals may be required by the host organisation if your research takes place outside
the University. It is your responsibility to check with the host organisation and obtain
the appropriate approvals before recruitment is underway in that location.

May I take this opportunity to wish you every success for your research.

Yours sincerely

Dr Martina Prude
Head of Research Governance

Tel: 023 8059 5058
email: rgoinfo@soton.ac.uk

Appendix 9 Systematic review protocol

EXPLORING CULTURAL BARRIERS TO MODERN CONTRACEPTIVE USE: A SYSTEMATIC REVIEW

RESEARCH QUESTIONS

What interventions have been undertaken to address cultural factors that affect the uptake of modern contraceptive methods and services?

How do targeted family planning interventions overcome sociocultural barriers?

BACKGROUND

Family planning has been on the reproductive health agenda since the 1960s. Nevertheless, increased promotion, use and acceptance of family planning programmes and facilities in countries with continued high birth rates, 32% of all maternal deaths could be averted alongside the reduction of global poverty and hunger (Cleland et al. 2006). Many of the Millennium Development Goals (MDGs) could be attained, or would at least be more likely to be attained, if there was an increase in worldwide family planning use, leading to increased women's empowerment (MDG 3), increased universal primary schooling (MDG 2) and long-term sustainability (MDG 7).

Family planning services help women to achieve their desired fertility status, through the provision of birth spacing and limiting methods. Spacing and limiting are the most common reasons women might desire to use family planning. The desire for birth spacing is present when a woman wants to have more children but also wishes to space out the births. Birth limiting, on the other hand, is when a woman doesn't wish to have any more children. Without the use of contraceptive methods women in both these positions may end up giving birth to more children than intended or desired and therefore these women have an unmet need for contraception. Some women who unintentionally fall pregnant may resort to abortion which can further lead to health complications. This review will focus solely on modern contraceptive

use due to its higher efficacy in fertility management (Gakidou and Vayena 2007, Gould et al. 2002); it will not examine interventions related to abortion or sterilization.

"Family planning services tend to ignore the cultural values and customs of the people" (Tucker 1986). Camacho et al. (2006) noted that "in order for people to exercise their right to health, their social and cultural contexts need to be acknowledged". This observation has been made worldwide and resulted in the provision of public policies which recognise cultural diversity. However, the fact is that many of the negative results in areas of maternal health can not only be attributed to physiological health but also to social constraints placed on appropriate health care (Zsasz in Gonzales, 1995). This is further enhanced by the understanding that the cultural practices and beliefs of certain populations may make them susceptible to poor reproductive health status, UNFPA (2005) found that the ethnic minorities in Lao PDA presented an excellent example of cultural barriers resulting in "poor uptake of health services"'. Adeyemi (et al. 2005) observed the need to address social and cultural factors which act as barriers to the use of contraceptive methods before family-planning programme objectives can be achieved and the gap of unmet need for contraception can be closed.

Cultural diversity can prove a hindrance for the acceptance of health interventions, or it can be embraced and provide enhanced programmes which can "bring about change for the better" (UNFPA, 2005). In a study carried out by Heppner et al. (1999) on rape prevention, it was found that the group of African-American men presented with a culturally relevant intervention had a higher level of engagement with the intervention than those exposed to the 'colour-blind' intervention (WHO, 2007). For the purpose of this study a definition of culture has been conceptualised using the UNESCO Declaration on Cultural Policies (1982). The idea of culture encompasses the value systems and beliefs, dialogue and critical judgment, exchange of ideas, experiences and traditions, identity and spiritual aspirations, creativity and arts shared by a collective.

WHY IS IT IMPORTANT TO DO THIS REVIEW?

The WHO (2007) stated that interventions "at the level of cultural practices and social norms can be an effective way to promote change". This report will investigate the ways in which

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interventions at the cultural level have influenced the uptake of modern contraception. It is recognized that the implementation of culturally sensitive programmes continues to be a complex process (UNFPA 2005, Goodburn & Campbell 2001) and hopefully by applying formal methods of review we can begin to identify and better understand interventions applied and outcomes obtained through addressing cultural barriers to the uptake of modern contraceptive methods.

Systematic reviews are useful research tools which help us to conceptualise and order knowledge on past research in order to inform and provide best practice strategies for future investigations, policies and improvement strategies through the application of "rigorous methodology" (Cooper 1984). It is essential to use these tools in order to "keep up with the evidence that is accumulating in the field" (Egger et al. 2001), to provide a response to the demand for increased communication and to ensure that, in light of on-going budget cuts, funding is being used in the most effective manner.

Systematic reviews have been carried out to synthesise research evidence on various factors associated with contraceptive use (DiCensio et al. 2002, Harden et al. 2009, Marston and King 2006, McDermott et al. 2004, Williamson et al. 2009) interventions which address cultural barriers to modern contraception use have not been investigated in such depth. It is hoped that this systematic review will highlight gaps in the research evidence of this area. This can then in turn be used to enrich the findings of other systematic reviews of intervention research whilst increasing our "understanding of the challenges of applying [a] cultural lens" to reproductive health issues (UNFPA, 2005).

OBJECTIVES

The secondary objective of this review is:

- To discover what aspects of interventions help to overcome sociocultural barriers to contraceptive use

This will enable us to reach our primary objective which is:

- To summarize the efficacy of different intervention characteristics with regards to overcoming sociocultural barriers

SEARCH METHODS FOR IDENTIFICATION OF STUDIES

<u>Data Collection and Analysis</u>

Selection of studies – inclusion and exclusion criteria

The relevance of studies will be established by applying the following inclusion/exclusion criteria.

- Contraceptive use

Studies which look at contraceptive use, uptake, non-use, discontinuation or choice as an outcome will be used in our final analysis. Also included will be studies which investigate user perspectives on contraceptive methods. Studies which concentrate on abstinence, age at first sex, number of sexual partners and medical interactions of other conditions with contraceptive use will be excluded.

- Contraceptive methods

Studies which look at hormonal and barrier modern contraceptive methods will be included whereas those looking at traditional or natural contraceptive methods will be excluded. For the purpose of this study sterilization specific interventions will be excluded as these will only help women with an unmet need for limiting and it would not be an appropriate method for women who wish to space their births. Interventions looking at abortions and emergency contraception will also be excluded.

- Measure of contraceptive use

All studies investigating any duration of contraceptive use will be included. Studies which address any length of contraceptive use will be included so long as they address cultural barriers in tandem, there must however be an element of use of contraception in the study. For example it is not enough to just be a study about contraceptive knowledge.

- Cultural factors

In order to be included studies needed to present a motivation for choosing a specific population to target with the intervention. This motivation will highlight why a particular population may not be using contraception and the cultural factors related to this. Cultural factors have been identified in the search terminology and an extensive list of what may be accepted as cultural can be seen there.

- Study design

Both qualitative and quantitative studies will be included in this review.

- Types of participants

Studies which address persons of reproductive age will be included. This is male and females aged 15- 49 years.

At this stage related systematic reviews will be compared to the findings of this study.

Only studies published after 1994 will be included. Additionally only studies in English and French will be examined due to the language restrictions of the primary researcher.

If it is not possible to identify enough inclusion/exclusion criteria from the title and abstract then the full paper will be requested and the full document checked against the criteria.

Using our inclusion criteria we may find studies which address:

- interventions to address the cultural factors that affect modern contraceptive use;
- interventions to address the cultural awareness and sensitivity of family planning service providers;
- interventions to address religious factors in women's use of family planning services;
- interventions to work with religious leaders to address cultural issues around modern contraceptive use;
- interventions which promote the use of existing family planning services;
- interventions which address communication issues associated to cultural beliefs between partners;
- interventions which improve access to family planning services and modern contraceptive providers;
- interventions which address the empowerment of women in making family planning decisions;
- interventions which promote knowledge of and strengthen information systems to modern contraception.

We may find studies where the outcome is:

- Use of modern contraceptives
- Use of family planning services
- Women's satisfaction with modern contraceptive methods
- Women's satisfaction with family planning services
- Improved access to family planning services (better infrastructure, etc.)
- Decreased bias from service providers as a result of changed values and attitudes
- Adaptation of service provision to meet cultural factors

These examples of possible interventions and outcomes, they are intended to be indicative only, as we come across others they too will be included in the final review.

Search Strategy

Studies will be identified through the use of both manual and electronic searches. The electronic searches will be carried out by searching various electronic databases. The list below is extensive but some may be inaccessible or may prove to have no relevant studies, but in order to capture as much related research as possible we will include them for now.

Electronic searches

The following databases will be searched:

African Index Medicus

African Journals OnLine

Allied and Complementary Medicine Database (AMED)

Anthropology Index

British Education Index

CINAHL

Conference papers index

Copac National, academics and specialist library catalogue

Dissertations and theses, full text

Education Resources Information Center (ERIC)

Embase

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GreySource

Index to Theses

International Bibliography of the Social Sciences (IBSS)

JStor

LILACS

MEDLINE

ONESOURCE

Population Council

PychINFO

Using the search terms listed below we will endeavor to find all related research into interventions which are linked to cultural barriers and the use of modern contraceptives.

Search terms

The following search terms will be used and adapted to provide search strategies for each of the electronic databases. The exact search terms, date of search and search results will be recorded as the search progresses.

Cultural terms; acculturation, adaptation, anthropology, assimilation, background, behavior, belief, ceremonial behavior, characteristics, cross-cultural comparison, construct, cultural, culture, custom, decision-making power, discrimination, diversity, ethnic, ethnic group, ethnicity, ethnography, ethnology, ideas, indigenous, influence, interaction, knowledge, language, lifestyle, minority group, moral, perception, population, practice, preference, race, racial, religion, religious, ritual, rule, social, taboo, tradition, traditional, tribal, upbringing, value

Barrier terms; access, acceptability, accessibility, attitude, barrier, communication, constraint, delivery of health care, deprivation, disadvantage, facilitator, factor, geography, healthcare system, health facility, health knowledge, health practice, health seeking behavior, health

service, health services accessibility, hinder, hindrance, impediment, knowledge, limitation, location, mobility, obstacle, patient acceptance of health care, region, restriction, utilisation

Contraceptive terms; Acnocin, All-Flex, barrier method, Beyaz, BiNovum, birth control, Brevinov, Cerazette, cervical cap, Cicafem, Cilest, Clairette, Co-cyprindiol, coil spring, combined contraceptive pill, combined hormonal contraceptive, combined pill, condom, contraception, contraceptive, contraceptive device, copper intrauterine device, Copper IUD, copper T, Cyclofem, CycloProvera, Depo Provera, desogestrel, Dianette, diaphragm, Diva, DMPA, drospirenone, ethinyl estradiol, ethynodiol diacetate, ethinyl estradiol-norgestrel combination, ethonogestrel-releasing implant, Evra, family planning, FemCap, Femcon Fe, femidom, Femodene, Femodette, Femulen, fertility control, Flexi-T, gestodene, Gygel, GyneFix, Gynera, Implanon, intrauterine, IUD, IUS, Katya, Lea shield, Levonorgestrel, Load 375, Loestrin, Logynon, Lunelle, Lybrel, Marvelon, medroxyprogesterone acetate, Mercilon, Microgynon, Micronor, Milex, mini pill, Mini TT, Mirena, monophasic pill, Multiload Cu375, noregestromin, norethisterone, norethindrone, norgestimate, norethisterone enanthate, norgestrel, Norgeston, Noriday, Norimin, Norinyl, Noristerat, Norplant, Nova-T, Nova Y380, NuvaRing, Ortho, Ovranette, Ovrette, Ovysmen, ParaGard, planned parenthood, planned pregnancy, progestogen only, progestogen-only, progetogens, progestins, prophylactic, protected sex, Qlaira, Reflections, safe sex, safer sex, spermatocidal, spermicide, spermicidal, subdermail implant, Sunya, Syphase, Triadene, Trinordiol, Trinovum, T-Safe, TT 380, UT 380, vaginal contraceptive film, Vimule, Yasmin

Studies to be considered will be imported into Reference Manager, their source noted and then filed according to the inclusion/exclusion criteria.

DATA EXTRACTION AND QUALITY ASSESSMENT

There is an "increasing focus on formal methods of systematically reviewing studies" (Egger et al. 2001). The initial review will be carried out, assessing the titles and abstracts which are identified using the defined search terms and those that fit the inclusion criteria will be

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retained. The references will then be assessed to ensure that they are all of reasonable quality and that certain topics are covered.

To guide the data extraction studies an appraisal tool will be created using a combination of the one used by McDermott and Graham (2005) and (Williamson et al., 2009)

After this the included studies will be summarised. For the synthesis the studies will be grouped by intervention and then sub-grouped according to the outcome type.

TIME FRAME

It is expected that this review may take 6 – 8 months to complete.

CONFLICTS OF INTEREST

At this moment in time the reviewers are not aware of any conflicts of interest.

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Law, M., Stewart, D., Pollack, N., Letts, L., Bosch, J. and Westmorland, M. (1998) Critical review form – Quantitative studies. Occupational Therapy Evidence-Based Practice Research Group, Mcmaster University, Canada.

Marston, C. and King, E. (2006) Factors that shape young people's sexual behavior: a systematic review. The Lancet. 368(9547):1581-1586.

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Appendix 10 Basic search strategy

The basic search strategy was used for searching all the databases with the exception of Medline. For CINAHL, Psycho Info, IBSS, AMED, Embase and ERIC the search terms were used to identify words used in the abstract. The search in Conference Papers Index was carried out using a key words search and all fields were searched in Anthropology Index.

1. acculturation or ceremonial behavior or ceremonial behaviour or cross-cultural comparison or crosscultural comparison or decision making power or ethnicity or ethnic group or ethnic groups or ethnography or ethnology or minority group or minority groups or taboo
2. culture or cultural or ethnic or indigenous or population or race or racial or religious or religion or social or tradition or traditional or tribal
3. adaptation or anthropology or assimilation or background or behaviour or behavior or beliefs or belief or characteristics or construct or custom or customs or discrimination or diversity or ideas or influence or interaction or knowledge or language or lifestyle or moral or perception or practice or practices or preference or ritual or rule or rules or taboo or value or values or upbringing
4. 2 AND 3
5. 1 OR 4
6. attitude or attitudes or barrier or communication or constraint or delivery of health care or deprivation or disadvantage or facilitator or factor or geography or health knowledge or health practice or health seeking behavior or health seeking behaviour or health services accessibility or hinder or hindrance or impediment or knowledge or limitation or location or mobility or obstacle or patient acceptance of health care or region or restriction
7. health services or health care system or health service or health facility or health facilities
8. access or acceptability or accessibility or utilization or utilisation
9. 7 AND 8
10. 6 OR 9
11. Acnocin or All-Flex or barrier method or barrier methods or Beyaz or BiNovum or birth control or Brevinov or Cerazette or cervical cap or Cicafem or Cilest or Clairette or Co-cyprindiol or coil spring or combined contraceptive pill or

combined hormonal contraceptive or combined pill or condom or condoms or contraception or contraceptive or contraceptives or contraceptive devices or copper intrauterine device or Copper IUD or copper T or Cyclofem or CycloProvera

12. Depo Provera or desogestrel or Dianette or diaphragm or Diva or DMPA or drospirenone or ethinyl estradiol or ethynodiol diacetate or ethinyl estradiol-norgestrel combination or ethonogestrel-releasing implant or Evra or family planning or FemCap or Femcon Fe or femidom or Femodene or Femodette or Femulen or fertility control or Flexi-T or gestodene or Gygel or GyneFix or Gynera or Implanon or intrauterine or intra-uterine or IUD

13. IUS or Katya or Lea shield or Levonorgestrel or Load 375 or Loestrin or Logynon or Lunelle or Lybrel or Marvelon or medroxyprogesterone acetate or Mercilon or Microgynon or Micronor or Milex or mini pill or Mini TT or Mirena or monophasic pill or Multiload Cu375 or noregestromin or norethisterone or norethindrone or norgestimate or norethisterone enanthate or norgestrel or Norgeston or Noriday or Norimin

14. Norinyl or Noristerat or Norplant or Nova-T or Nova Y380 or NuvaRing or Ortho or Ovranette or Ovrette or Ovysmen or ParaGard or planned parenthood or planned pregnancy or progestogen-only or progestogen only or progetogens or progestins or prophylactic or Qlaira or Reflexions or safe sex or protected sex or safer sex or spermatocidal or spermicidal or spermicide or subdermal implant or Sunya or Synphase or Triadene or Trinordiol or TriNovum or T-Safe or TT 380 or UT 380 or vaginal contraceptive film or Vimule or Yasmin

15. 11 OR 12 OR 13 OR 14

16. 5 AND 10 AND 15

Appendix 11 Medline search strategy

This is the Medline search strategy the title and abstract were searched using this strategy as well as MeSH terms. MeSH terms result from the classification system within the Medline database.

1. "acculturation"[MeSH] OR "acculturation"[tiab] OR "ceremonial behavior"[MeSH] OR "ceremonial behavior"[tiab] OR "ceremonial behaviour"[tiab] OR "cross-cultural comparison"[MeSH] OR "cross-cultural comparison"[tiab] OR "crosscultural comparison"[tiab] OR "culture"[MeSH] OR "cultural adaptation"[tiab] OR "cultural anthropology"[tiab] OR "cultural assimilation"[tiab] OR "cultural background"[tiab] OR "cultural behavior"[tiab] OR "cultural behaviour"[tiab] OR "cultural belief"[tiab] OR "cultural beliefs"[tiab] OR "cultural characteristics"[tiab] OR "cultural competency"[tiab] OR "cultural deprivation"[tiab] OR "cultural discrimination"[tiab] OR "cultural diversity"[tiab] OR "cultural evolution"[tiab] OR "cultural ideas"[tiab] OR "cultural influence"[tiab] OR "cultural interaction"[tiab] OR "cultural knowledge"[tiab] OR "cultural language"[tiab] OR "cultural lifestyle"[tiab] OR "cultural moral"[tiab] OR "cultural practice"[tiab] OR "cultural practices"[tiab] OR "cultural preference"[tiab] OR "cultural preferences"[tiab] OR "cultural values"[tiab] OR "cultural value"[tiab] OR "cultural upbringing"[tiab] OR "ethnic anthropology"[tiab] OR "ethnic assimilation"[tiab] OR "ethnic background"[tiab] OR "ethnic behavior"[tiab] OR "ethnic beliefs"[tiab] OR "ethnic characteristics"[tiab] OR "ethnic disadvantage"[tiab] OR "ethnic discrimination"[tiab] OR "ethnic diversity"[tiab] OR "ethnic influence"[tiab] OR "ethnic knowledge"[tiab] OR "ethnic language"[tiab] OR "ethnic practice"[tiab] OR "ethnic preference"[tiab] OR "ethnic preferences"[tiab] OR "ethnic values"[tiab] OR "indigenous background"[tiab] OR "indigenous beliefs"[tiab] OR "indigenous disadvantage"[tiab] OR "indigenous evolution"[tiab] OR "indigenous ideas"[tiab] OR "indigenous knowledge"[tiab] OR "indigenous language"[tiab] OR "indigenous practices"[tiab] OR "indigenous values"[tiab] OR "population adaptation"[tiab] OR "population background"[tiab] OR "population behavior"[tiab] OR "population behaviour"[tiab] OR "population beliefs"[tiab] OR "population characteristics"[tiab] OR "population deprivation"[tiab] OR "population discrimination"[tiab] OR "population diversity"[tiab] OR "population evolution"[tiab]
2. "population influence"[tiab] OR "population interaction"[tiab] OR "population knowledge"[tiab] OR "population lifestyle"[tiab] OR "population practices"[tiab] OR "population preference"[tiab] OR "population

preferences"[tiab] OR "population values"[tiab] OR "population value"[tiab] OR "race beliefs"[tiab] OR "race characteristics"[tiab] OR "race discrimination"[tiab] OR "race interaction"[tiab] OR "race preferences"[tiab] OR "race values"[tiab] OR "race value"[tiab] OR "racial adaptation"[tiab] OR "racial background"[tiab] OR "racial characteristics"[tiab] OR "racial disadvantage"[tiab] OR "racial discrimination"[tiab] OR "racial diversity"[tiab] OR "racial ideas"[tiab] OR "racial influence"[tiab] OR "racial preference"[tiab] OR "racial preferences"[tiab] OR "religious background"[tiab] OR "religious behavior"[tiab] OR "religious behaviour"[tiab] OR "religious belief"[tiab] OR "religious beliefs"[tiab] OR "religious characteristics"[tiab] OR "religious discrimination"[tiab] OR "religious diversity"[tiab] OR "religious ideas"[tiab] OR "religious influence"[tiab] OR "religious knowledge"[tiab] OR "religious language"[tiab] OR "religious practice"[tiab] OR "religious practices"[tiab] OR "religious preference"[tiab] OR "religious preferences"[tiab] OR "religious values"[tiab]OR " religious upbringing"[tiab] OR "religion diversity"[tiab] OR "tradition values"[tiab] OR "traditional anthropology"[tiab] OR "traditional background"[tiab] OR "traditional behavior"[tiab] OR "traditional behaviour"[tiab] OR "traditional belief"[tiab] OR "traditional beliefs"[tiab] OR "traditional characteristics"[tiab] OR "traditional diversity"[tiab] OR "traditional ideas"[tiab] OR "traditional knowledge"[tiab] OR "traditional language"[tiab] OR "traditional lifestyle"[tiab] OR "traditional moral"[tiab] OR "traditional practice"[tiab] OR "traditional practices"[tiab] OR "traditional preference"[tiab] OR "traditional values"[tiab] OR "traditional value"[tiab] OR "tribal background"[tiab] OR "tribal characteristics"[tiab] OR "tribal influence"[tiab] OR "tribal language"[tiab] OR "tribal practices"[tiab] OR "tribal values"[tiab] OR "cultural anthropology"[MeSH] OR "cultural characteristics"[MeSH]

3. "cultural competency"[MeSH] OR "cultural deprivation"[MeSH] OR "cultural diversity"[MeSH] OR "cultural evolution"[MeSH] OR "custom"[tiab] OR "customs"[tiab] OR "decision-making power"[tiab] OR "decision making power"[tiab] OR "ethnicity"[tiab] OR "ethnography"[tiab] OR "ethnology"[MeSH] OR "ethnology"[subheading] OR "ethnology"[tiab] OR "minority groups"[MeSH] OR "minority group"[tiab] OR "minority groups"[tiab] OR "population characteristics"[MeSH] OR "religion"[MeSH] OR "sociocultural "[tiab] OR "socio-cultural"[tiab] OR "taboo"[MeSH] OR "taboo"[tiab]

4. 1 OR 2 OR 3

5. "attitude"[MeSH] OR "attitude"[tiab] OR "attitdues"[tiab] OR "attitude to health"[MeSH] OR "barrier"[tiab] OR "communication"[MeSH] OR "communication"[tiab] OR "constraint"[tiab] OR "delivery of health

care"[MeSH] OR "delivery of health care"[tiab] OR "disadvantage"[tiab] OR "facilitator"[tiab] OR "factor"[tiab] OR "geography"[tiab] OR "health knowledge, attitudes, practice"[MeSH] OR "health knowledge"[tiab] OR "health practice"[tiab] OR "health seeking behavior"[tiab] OR "health seeking behaviour"[tiab] OR "health services accessibility"[MeSH] OR "health services accessibility"[tiab] OR "hinder"[tiab] OR "hindrance"[tiab] OR "impediment"[tiab] OR "knowledge"[tiab] OR "limitation"[tiab] OR "location"[tiab] OR "mobility"[tiab] OR "obstacle"[tiab] OR "organization and administration"[subheading] OR "patient acceptance of health care"[MeSH] OR "patient acceptance of health care"[tiab] OR "region"[tiab] OR "restriction"[tiab] OR "utilization" [subheading]

6. "health services"[tiab] OR "health care system"[tiab] OR "health service"[tiab] OR "health facilities"[tiab] OR "health facility"[tiab]

7. "accessibility"[tiab] OR "access"[tiab] OR "acceptability"[tiab] OR "utilisation"[tiab] OR "utilization"[tiab]

8. 6 AND 7

9. 5 OR 8

10. "Acnocin"[tiab] OR "All-Flex"[tiab] OR "contraception, barrier"[MeSH] OR "barrier method"[tiab] OR "barrier methods"[tiab] OR "Beyaz"[tiab] OR "BiNovum"[tiab] OR "birth control"[tiab] OR "Brevinor"[tiab] OR "Cerazette"[tiab] OR "cervical cap"[tiab] OR "Cicafem"[tiab] OR "Cilest"[tiab] OR "Clairette"[tiab] OR "Co-cyprindiol"[tiab] OR "coil spring" OR "combined contraceptive pill"[tiab] OR "combined hormonal contraceptive"[tiab] OR "combined pill"[tiab] OR "condom"[tiab] OR "condoms"[tiab] OR "condoms"[MeSH] OR "contraception"[MeSH] OR "contraception"[tiab] OR "contraceptives, oral"[MeSH] OR "contraceptive"[tiab] OR "contraceptives"[tiab] OR "contraceptive devices" [MeSH] OR "copper intrauterine device"[tiab] OR "Copper IUD"[tiab] OR "copper T"[tiab] OR "Cyclofem"[tiab] OR "CycloProvera"[tiab] OR "Depo Provera"[tiab] OR "desogestrel"[MeSH] OR "desogestrel"[tiab] OR "Dianette"[tiab] OR "diaphragm"[tiab] OR "Diva"[tiab] OR "DMPA"[tiab] OR "drospirenone"[tiab] OR (("ethinylestradiol"[tiab] OR "ethiny estradiol"[tiab] OR "ethynodiol"[tiab]) AND ("cyproterone acetate"[tiab] OR "desogestrel"[tiab] OR "diacetate"[tiab] OR "drospirenone"[tiab] OR "gestodene"[tiab] OR "levonorgestrel"[tiab] OR "norelgestromin"[tiab] OR "norethindrone"[tiab] OR "norethisterone"[tiab] OR "norgestimate"[tiab])) OR "ethinyl estradiol"[MeSH] OR "ethynodiol diacetate"[MeSH] OR "ethinyl estradiol-norgestrel combination"[MeSH] OR "ethonogestrel-releasing implant"[tiab] OR "Evra"[tiab] OR "family planning policy"[MeSH] OR "family planning"[tiab] OR "family planning services"[MeSH]

OR "FemCap"[tiab] OR "Femcon Fe"[tiab] OR "condoms, female"[MeSH] OR "female condoms"[tiab] OR "femidom"[tiab] OR "Femodene"[tiab] OR "Femodette"[tiab] OR "Femulen"[tiab] OR "fertility control"[tiab] OR "Flexi-T"[tiab]

11. "gestodene"[tiab] OR "Gygel"[tiab] OR "GyneFix"[tiab] OR "Gynera"[tiab] OR "hormonal contraception"[tiab] OR "Implanon"[tiab[OR "intrauterine device"[tiab] OR "intra-uterine device"[tiab] OR "intrauterine devices" [MeSH] OR "intra-uterine contraceptive"[tiab] OR "intra-uterine system"[tiab] OR "IUD"[tiab] OR "IUS"[tiab] OR "Katya"[tiab] OR "Lea shield"[tiab] OR "levonorgestrel"[MeSH] OR "levonorgestrel"[tiab] OR "Load 375"[tiab] OR "Loestrin"[tiab] OR "Logynon"[tiab] OR "Lunelle"[tiab] OR "Lybrel"[tiab] OR "Marvelon"[tiab] OR "medroxyprogesterone acetate" [MeSH] OR "medroxyprogesterone acetate" [tiab] OR "Mercilon"[tiab] OR ("mestranol"[tiab] AND "norethisterone"[tiab]) OR "Microgynon"[tiab] OR "Micronor"[tiab] OR "Milex"[tiab] OR "mini pill"[tiab] OR "Mini TT"[tiab] OR "Mirena"[tiab] OR "monophasic pill"[tiab] OR "Multiload Cu375"[tiab] OR "norelgestromin"[tiab] OR "norethisterone"[tiab] OR "norethindrone"[MeSH] OR "northindrone"[tiab] OR "norgestimate"[tiab] OR "norethisterone enanthate"[tiab] OR "norgestrel"[MeSH] OR "norgestrel"[tiab] OR "Norgeston"[tiab] OR "Noriday"[tiab] OR "Norimin"[tiab] OR "Norinyl"[tiab] OR "Noristerat"[tiab] OR "Norplant"[tiab] OR "Nova-T"[tiab] OR "Nova Y380"[tiab] OR "NuvaRing"[tiab] OR "oral contraceptive"[tiab] OR "oral contraceptives"[tiab] OR "Ortho"[tiab] OR "Ortho Evra"[tiab] OR "Ovranette"[tiab] OR "Ovrette"[tiab] OR "Ovysmen"[tiab] OR "ParaGard"[tiab] OR "planned parenthood"[tiab] OR "planned pregnancy"[tiab] OR "progestogen-only"[tiab] OR "progestogen only"[tiab] OR "progestogens"[tiab] OR "progestins"[MeSH] OR "progestins"[tiab] OR "prophylactic"[tiab] OR "Qlaira"[tiab] OR "Reflexions"[tiab] OR "safe sex"[MeSH] OR "safe sex"[tiab] OR "protected sex"[tiab] OR "safer sex"[tiab] OR "spermatocidal agents"[MeSH] OR "spermatocidal"[tiab] OR "spermicidal"[tiab] OR "spermicide"[tiab] OR "subdermal implant"[tiab] OR "Sunya"[tiab] OR "Synphase"[tiab] OR "Triadene"[tiab] OR "Trinordiol"[tiab] OR "TriNovum"[tiab] OR "T-Safe"[tiab] OR "TT 380"[tiab] OR "UT 380"[tiab] OR "vaginal contraceptive film"[tiab] OR "Vimule"[tiab] OR "Yasmin"[tiab]

12. 10 OR 11

4 AND 9 AND

Appendix 12 List of lower and middle income countries

Low income:

Afghanistan, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Eritrea, Ethiopia, Gambia, The, Guinea, Guinea-Bissau, Haiti, Kenya, Korea, Dem. Rep., Kyrgyz Republic, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sierra Leone, Somalia, Tajikistan, Tanzania, Togo, Uganda, Zimbabwe

Lower-middle income:

Angola, Armenia, Belize, Bhutan, Bolivia, Cameroon, Cape Verde, Congo, Rep., Côte d'Ivoire, Djibouti, Egypt, Arab Rep., El Salvador, Fiji, Georgia, Ghana, Guatemala, Guyana, Honduras, Indonesia, India, Iraq, Kiribati, Kosovo, Lao PDR, Lesotho, Marshall Islands, Mauritania, Moldova, Mongolia, Morocco, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Paraguay, Philippines, Samoa, São Tomé and Príncipe, Senegal, Solomon Islands, Sri Lanka, Sudan, Swaziland, Syrian Arab Republic, Timor-Leste, Tonga, Turkmenistan, Tuvalu, Ukraine, Uzbekistan, Vanuatu, Vietnam, West Bank and Gaza, Yemen, Rep., Zambia.

Upper-middle income:

Albania, Algeria, American Samoa, Antigua and Barbuda, Argentina, Azerbaijan, Belarus, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Gabon, Grenada, Iran, Islamic Rep., Jamaica, Jordan, Kazakhstan, Latvia, Lebanon, Libya, Lithuania, FYR Macedonia, Malaysia, Maldives, Mauritius, Mayotte, Mexico, Montenegro, Namibia, Palau, Panama, Peru, Romania, Russian Federation, Serbia, Seychelles, South Africa, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Thailand, Tunisia, Turkey, Uruguay, Venezuela.

Source: http://data.worldbank.org/about/country-classifications/country-and-lending-groups last accessed on 08/10/2011

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