University of Southampton
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Development and testing of a distance learning package used to improve the knowledge of trained Auxiliary Nurse/Midwives (ANM) in normal midwifery practice in Central India.

By

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Thesis for the degree of Doctor of Philosophy

UNIVERSITY OF SOUTHAMPTON

ABSTRACT:

FACULTY OF HEALTH SCIENCES

Nursing and Midwifery

Doctor of Philosophy

DEVELOPMENT AND TESTING OF A DISTANCE LEARNING PACKAGE USED TO IMPROVE THE KNOWLEDGE OF TRAINED AUXILIARY NURSE\MIDWIVES (ANM) IN NORMAL MIDWIFERY PRACTICE IN CENTRAL INDIA.

Mary Ann Foss Background: This study is set in the Indian State of Madhya Pradesh (MP) where maternal health is poor and women's social status is low. In the majority of cases women's autonomy and decision making within the family is limited and their ability to seek medical treatment is through their husband or father-in-law. The State government identified a need to strengthen midwifery care given by Auxiliary Nurse/Midwives (ANMs) in the hope of improving maternal and neonatal health. This study formed part of one Non-Governmental Organisation's response to this need.

Design: This cross-cultural, two phase study was designed in partnership with an Indian Non-Government Organisation, utilising Elliot's Action Research model within the paradigm of critical theory. The first phase investigated the then current situation and established a potential solution to strengthening midwifery practice within MP. This solution comprised an educational approach using a specifically designed self-directed distance learning programme (DLP) focussing on normal pregnancy and childbirth. The DLP consisted of a hard copy workbook supported by a multimedia resource. The second phase was the use and evaluation of the DLP with a sample of 28 ANMs in MP. Their knowledge was tested using a pre- and post-test multiple-choice question paper. Data were analysed using Wilcoxon signed rank. Participants then negotiated a three day workshop to cover aspects they had not been able to address. A further 19 participants joined these three days.

Outcomes: The MCQ test results indicated that the first group had poor knowledge of the normal process of pregnancy and childbirth. This group did not improve their personal performance scores significantly after the three day workshop. However, the second group demonstrated a significant change which suggests that coupling self-directed guided study material with an enabling, face-to-face environment can be successful.

Conclusion: Distance learning may be more effective if coupled with face-to-face workshops. Partnership working was a crucial component of this cross cultural Action Research study which required attention to detail in all stages for a successful conclusion. Both of these points have relevance for others undertaking similar studies.

Recommendations: Improved interface between global organisations and the Indian Government to improve midwifery education and status.

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Academic Thesis: Declaration of Authorship

I, Mary Ann Foss,

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

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I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. 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;

3. Where I have consulted the published work of others, this is always clearly attributed;

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5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. Either none of this work has been published before submission, or parts of this work have been published as: [please list references below]:

Signed:
……
…….

Acknowledgements

This thesis is dedicated to the women of Madhya Pradesh, who have given their time and enthusiasm to make this study possible. It would not have been possible without the participation in discussing the education and training of the ANM with Government officials, ANM teachers and ANM; assisting in the quality assurance process of the educational material and those participating in the filming of the DVD, testing the materials and teaching me that not all chatting is gossip. Also women expressing their concerns related to childbirth and the place of birth,

Dr Alok Ranjan Chaurasia

Dr A Chaurasia Director of the Private Health Clinic Bhopal.

Sunil Shulka Film Director

Professor A Le May and Dr M. Gobbi whose patience and continued support has been invaluable.

My family: those here now whose support and encouragement has kept the end in sight and those who couldn't finish the journey with me.

Opportunities and Choices DFiD funded Programme (Southampton University)

James Tudor Foundation for funding the production of the educational material and the testing of these within India.

The Burdett Trust for funding the multimedia resource

Definitions, abbreviations used

ASHA worker: Accredited Social Health Activist who works within villages to undertake health education and promotion

ANM: Auxiliary Nurse Midwife

Dai: An Indian Traditional Birth Attendant

Distance Education: Education which is designed to have a geographical distance between teachers and learners

DFID: Department for International Development

ICM: International Congress of Midwives

Evaluation: Informal and formal assessment of the teaching and learning programme undertaken by students

Lady Health visitor: Supervisor to the ANM and oversees six sub-centres and is based at the primary health centre.

Open Education: Educational programmes accessed by anyone

Primary Health Centre: First contact point between village community and the medical officer.

Punchat: Village council

Purdah: Persian word meaning "curtain", used in reference to the concealment of women and their separation from the world of men.

Traditional Birth Attendant: A non- trained person who provides care during labour and post partum

The Sub-Centre: is the most peripheral and first contact point between the primary health care system and the community. Each Sub-Centre is manned by one Auxiliary Nurse Midwife (ANM) and one Male Health worker

Skilled Birth Attendant: A health care provider with midwifery skills eg Doctor, Nurse or Midwife

WHO: World Health Organisation

CHAPTER 1 – Introduction and background to the study

1.0 Introduction to this study:

In 2000 the Government of Madhya Pradesh State in central India planned to strengthen midwifery within the state. In response to this a study to explore the possibility of improving the service provided by the main provider of care for pregnancy and childbirth; the Auxiliary Nurse Midwife (ANM) was conducted during the period of 2004-2011. This was undertaken in partnership with an Indian non-government organisation. An Action Research approach within the paradigm of critical theory, with guidance from Elliot's (1991) Action Research model enabled the development of a staged approach to identifying a strategy for service improvement. This study commenced in 2004 with a situational analysis of the ANM education, role and their position within the health services in three states, funded as part of an ongoing DFID programme. Analysing and reflecting on the data collected during this process resulted in the need for an educational strategy to address the significant deficits in the ANMs knowledge of maternal health care.

Whilst funding was sought (2005-2008) for this study which resulted in a successful bid providing financial support in 2009, an exploration of the literature related to distance learning, educational material development to inform the study was undertaken . Development of an educational tool commenced combining Rowntree's (1994) four stage design and the Analysis Design Development Implementation Evaluation (ADDIE) model (Dick et al2001). A multimedia resource was filmed in India (2010-11) to provide support for the written text.

Implementation of the educational tool was undertaken within the Shivpuri district of Madhya Pradesh in 2011 with a primary group of 28 ANM. Was subsequently tested using a researcher designed personal knowledge performance, multiple choice question paper and an evaluation of the teaching and learning material by the participants. At the final study day there were fourteen participants (group 1) remaining, who negotiated an extension to the initial study period to include a three day workshop. The Chief Medical Officer recruited a further nineteen participants, thirteen were included in the final results as they had completed both pre and post intervention test papers (group 2). Results of the two groups were analysed using SPSS v18 (IBM 2009) and the outcomes compared. Cultural and ethical codes were applied to the context of this international study, exploring the application of western ethical codes to a non- western culture. On completion of this study a review of "partnership" is explored within a cross-cultural Action Research study.

The presentation of this thesis does not follow a conventional format, which usually provides a literature review of the relevant research of the topic followed by the study design. In this case the literature is reviewed as part of the developmental process, in accordance with the chronological sequencing of the study, because an Action Research problem solving approach is used. The main aim has already been outlined, but the objectives are presented as the study unfolds. It is divided into two phases; phase one outlines the development of the educational materials, whilst phase two is the analysis of the testing of those educational materials with the sample of ANM.

Chapter one, following the introduction to this study, orientates the reader to Indian culture and social structure including the position of women within this setting. Exploring some of the cultural issues in regard to women within this complex society. This contextualisation offers some insight, not only in the culture but incorporates the status and role of women and the health service provision for pregnancy and childbirth. In light of the differences within the cultures of the researcher and the setting of this study, the ethical principles and possible dilemmas which underpin this work are considered. However, the specific ethical approach is further reviewed within the study's design outlined in chapter two.

Chapter two explores the paradigms of Critical Theory and Action Research. Some of the history, debates and application of these approaches within the available literature are outlined. Whilst, the basis of this approach is embedded in a democratic ideology, its application within a non-democratic society[1] will be explored further in the analysis of partnership within the study as a whole. Specific ethical principles are outlined but their application appears within chapter five and the planning phase in chapter six. Chapters three and four explore the strategies used to improve the midwifery knowledge and the development of the educational materials. Literature related to the development of distance learning materials are considered within these chapters and informs the planning and execution of the study. Application of educational theory underpins the educational material. A literature review focussing on the evaluation of the effectiveness of delivering education materials using a distance learning model informs the evaluation process.

Chapter five relates to the development of the multimedia resource. Filming commenced within the clinical settings of the community and hospital offering some understanding of the standards of practice. Chapter six outlines the implementation planning for testing of the materials within the district of Shivpuri in the northern district of Madhya Pradesh, using a pre and post intervention personal performance multi-choice question paper. This

[1] The term "non- democratic society" is not referring to the political situation within India but the social situation where power and control are asserted across and within the caste system

is followed by the implementation of this study in chapter seven, which includes a negotiated change to the study plan by the participants. This developed into the second cycle outlined in chapter eight. Analysis of the results relating to the extended study period is presented and compared to group 1 and the outcomes discussed. The final two chapters (nine and ten) explore the issues which have arisen from personal participation and observations of the study as a whole. Aspects of partnership are further analysed through a concept analysis in chapter nine with the methods of analysis in appendix 5. This culminates in a discussion of the main elements of undertaking an Action Research study within a different culture.

1.1 Background:

The Federal Government of India was a signatory of the Millennium Development Goals agreed in 2000 (WHO 2000) which commit to reduce maternal and child mortality by 2015. The United Kingdom (UK) government has chosen several countries to partner in this endeavour including India, which has been supported recently by fiscal and technical resources to achieve this aim. The UK government has also encouraged partnership arrangements between non-profit organisations, corporate business and educational institutions (DIFD 2010).

At present in Madhya Pradesh state the maternal mortality rates are high at 269:100,000 (GOI 2011a), higher than the national average, which is 212:100,000 in 2009 (GOI 2011b). In 2000 the rate reported for the whole of India was 390 and slowly dropped to 230 in 2009 (UNFPA 2011). There appears to be some disparity in the figures presented they are from two different sources which cause some confusion but this is not unsurprising as they are both estimates. It does however demonstrate that the figures are high in relation to the developed world.

As the rate for Madhya Pradesh was higher in 2009 than the national average it is assumed that this was the case for previous years. This resulted in a new initiative to strengthening midwifery by the State government of Madhya Pradesh in 2000. As I had made some personal links as a midwifery educational consultant within the state government, it was appropriate to develop this relationship further in support of their political initiative in strengthening the maternal health services.

The background information to this study offers some contextualisation of Indian society and the role of women, establishing the complex nature of the study, set within a developing/transitional nation with a high maternal mortality rate and low skilled attendant at birth rate (UNFPA 2012). Women's position within the caste system of India and its

impact on their position within this stratified society will be discussed by exploring the topics of education, marriage and health, directing both the researcher and the reader, to the main issues facing Indian women.

The caste system which has been embedded within Indian culture for centuries continues to have a greater or lesser degree of impact depending on which State people are living in. The high caste population are Brahmin (Priest) and are considered to be well educated enabling them to occupy roles of influence within the society; Kshatriyas are the warrior/ ruler caste followed by the Traders (Vaishyas) and then the Sudras, who are skilled workers.

Dalits are the untouchable population who are the lowest caste and are poorly treated and given the lowest paid work, usually cleaning as this is considered unclean. The women of this caste become traditional birth attendants (TBA) if they need to support themselves. Through conversation it was evident that the northern states of India were much more rigid in their application of the caste system than those of the south. The majority of my interaction has been with those of the Vaishyas and Sudras castes which are lower castes, but even within the caste there is a hierarchy of sub-castes identified by the family name, increasing the complexity of the social structure.

1.2 India:

India covers 3,287,263 sq km and is divided into 29 states with a population of approximately 1.3 billion. Each state is subdivided into districts, which consist of urban and rural areas. Each state has its own government and political power, whilst implementing Federal government policies and laws. The social system impacts greatly on the status of women including: whom they will marry and any employment they may have. There are some reports (BBC 2012) that this social structure is being relaxed, resulting in cross caste marriages and successful business people from the lower castes. The vastness of the country means that this may be acceptable in one State but not in another. From personal observation there was less tolerance to social mobility in the central State of Madhya Pradesh and this type of social change.

One common aspect of women's lives is pregnancy and childbirth regardless of caste. Indian maternal mortality has been considered one of the highest in the world with one woman dying every seven minutes due to childbirth related complications (NFHS 2000, Rustagi 2004, DFID 2010). In 2007 the Department for International Development (DFID), identified several Indian states to support in developing their educational and health systems, which included; Rajasthan, Madhya Pradesh and Bihar as they are the

states with the highest mortality (Ranjan and Stones 2004), and the lowest literacy rates (GOI 2011c). As a result these states were chosen to receive fiscal and specialist support to improve their education and maternal health systems (DIFD 2010).

The State Government of Madhya Pradesh has been aware of the consistently high maternal mortality rates for many years (Ranjan and Stones 2004) and in 2000 set up a workforce planning group to consider how to strengthen midwifery practice within the State as a method of improving this situation. Two options were considered; option one was to develop a three year midwifery programme which would provide midwifery education to graduate level. There were some legal implications impacting upon this option; the State would be required to change the legislation to licence these midwives to practice and they would be restricted to practicing within the state of Madhya Pradesh. Exploring this option further the State government prepared the legislation change with the support of the Director of Shyham Institute who was employed by the government at the time. Having prepared the changes and had them accepted, the law was due to change following the State elections. The state elections in 2005 changed the governing party and the legislation change was not executed. The second option was to offer updating for existing trained Auxiliary Nurse/Midwives to improve their knowledge and skills. Traditional education is provided by the Government within teaching establishments consisting of face to face instruction using traditional methods of teaching. Due to the large geographical area and the numbers of trained Auxiliary Nurse/Midwives (ANM), this approach to education was rejected due to the excessive finance and resources required. Regardless of a changing political situation, work commenced on exploring how option two could be achieved without political support and is the focus of this study.

1.3 Indian maternal health care system:

Madhya Pradesh is the central state of India covering 4443,446 sq km, with approximately 60.4 million population. Each state is divided into districts and these are subdivided into “development blocks”, with 1 million people within each block. Health care is divided into three distinct levels, district hospitals offering tertiary care to 30,000 of the population, primary health centres offering preventative care to 10,000 of the population and finally sub-centres, which offer care such as first aid and maternal/child health care to 5,000 of the population. This staff/patient ratio has remained constant without review, although the population grows over time resulting in the workload of the health care workers increasing without an equal increase in staffing. Each primary health centre oversees approximately six sub-centres. Working in the community within the sub-centres are multipurpose health

workers, both male and female. Male health workers are trained for a year whilst female health workers are trained for 18 months to incorporate the maternal and child health dimensions of their role. Each having a distinctive role; female health workers offer first aid and maternal/child health care, whilst the male health worker is mainly working within chronic diseases such as Malaria and Tuberculosis, but also has family spacing/planning as part of his role.

Due to the notion of *purdah* (see glossary of terms), women are cared for by women to maintain and ensure modesty and dignity (Basu 1992). Each primary health centre was designed to have two doctors, one male and one female. The female doctor's role includes treating all obstetric and gynaecological problems that may present at the centre however medical cover within the centre may be provided by a male doctor as the only doctor available. The treatment of women in abnormal labour may be greatly impaired by the shortage of female doctors working in rural areas (Saini et al 2011). District hospitals provide resources for caesarean section but blood transfusions may be limited, which demonstrates the lack of infrastructure within the health system.

Traditional birth attendants (TBA = *dai)* have been part of the care offered to women during childbirth throughout the generations. Integral to their role is providing cultural support during the childbearing process, which usually occurs in the home. They are often untrained and illiterate and with little understanding of modern preventative measures, which are designed to reduce maternal and neonatal morbidity and mortality. These women are from the lowest caste (Dilit) within Indian society and are employed to undertake rituals and clean up after the baby is born, as the placenta and blood are viewed as "polluted". Van Hollen (2003) notes in her observations, that these women are treated with disdain and often very poorly paid. Although there have been global (WHO 1984) and Indian national training programmes (Van Hollen 2003) for the TBA, it has been reported that this has been unsuccessful in reducing both mortality and morbidity (Ranjan and Stones 2004). During the British colonial era there had been a desire to remove the *dai* and replace them with trained midwives working in the community (Van Hollen 2003), but it was acknowledged, in the post-colonial era by the Indian government, that the traditional cultural role of the *dai* was embedded within the community so she continues to practice.

In 2005 the Government of India (GOI) launched the National Rural Health mission to provide the vulnerable groups of their society mainly women and children with a more integrated health system (GOI 2005). The main strategy was to have community health workers to promote the services available such as immunisation, institutional birth and refer to hospital those children who required more intensive treatments. These Accredited

Social Health Activists (ASHA) work within the villages and support the work of the ANM (Shrivastava and Shrivastava 2012).

1.4 Women in Indian Society:

Status is often used in the literature to denote the position women have in a society but Basu (1992) suggests that this is a little misleading as the term is not a description, but a value by which a community is judged. Therefore it may be more prudent to use the term "role" rather than "status" although this can be difficult as the literature is often written by women utilising a feminist perspective with a focus on status. The types of literature accessed to provide this insight stem from two main areas of research; demography and ethnography.

Demographic data in India are collected from demographic surveys such as the National Household survey and the National Census giving an understanding of the statistical status of women in society from what appears to be outdated data, due to the time lapse between surveys. As the statistics stated relate to maternal health, literacy and education are reliant on data which are unreliable due to the lack of a compulsory demographic registration system, their application requires some critical appraisal. There is also a lack of data from governmental reports which would emanate from a demographic registration system, resulting in estimated statistical outcomes. These data are further analysed by researchers using multivariate logistic regression to establish aspects of women's lives, such as autonomy, education and fertility. Researchers often undertake secondary analysis of large survey data sets, such as the National Household survey to develop a theoretical basis for social behaviour, so that trends can be identified, e.g. Pallikadavathet al (2004). The translation of these findings does not always take into consideration the social dimension that has an obvious impact on behaviour (Jeffery and Jeffery 1997) such as poverty, culture and caste. This apparent linear cause and effect approach has led to assumptions being made that the values which are related to women's autonomy, such as choice of marriage partner or access to money, can be transferred across the castes and reflects similarly in India as a whole.

The ethnographic information is taken from several studies over a period of several decades. Ethnographical studies may not appear to take into consideration the much broader dimensions of social behaviour as they tell someone else's story and are the interpretation of the author/s (Van Maanen 2011). Each interpretation will be guided by the author's belief and value system and personal experiences, even though they are observing a community outside their usual social arena. This may not be representative of other

social groups, due to the diverse nature of Indian society. Again this work can appear to be outdated as there are no recent studies available but these studies do offer an understanding of the principles of social interactions within this cultural setting. In light of the social context of India the ethnographic studies are often socially positioned within one strata of the caste system. They are often set in a specific group or villages (Van Hollen 2003, Lamb 2000, Jeffery, Jeffery and Lyon 1989, Jeffery 1979) and therefore may not be transferable to the rest of society in their entirety. Basu (1992) identifies a north/south divide in relation to many aspects such as education, the social position of women and the caste system. However, the social ethical principles, which are embedded within the text of these studies, still appear to be evident within India as a whole as they are set within the castes reflecting religious and social structures. An example of this is "purdah", which is related to family honour and respect as well as women's dignity.

Due to the diversity of the position of women in India, it is only possible to give an overview of the issues concerning women in this patriarchal society. Muslims, as well as Hindus, maintain the view that women are valued for their reproductive ability. Therefore the social position of women appears to be very low, unlike that of men, who are valued by the family for their potential for increasing the resources available. This bias applies to the social attitude to girls who are not seen as permanent members of a family, but will due to marriage, become members of a different family (Desai and Thakkar 2001, Jeffery and Jeffery 1997). Girls cost a family a dowry as opposed to a son, who brings in resources to the family (Van Hollen 2003). This emphasises the need for women to prove their value by being fertile and providing sons. Whilst the dowry system has been made illegal in India, it is still socially accepted and practiced in some areas. During one of the visits at the preliminary stages of this study to a school in Rajasthan, we met a young man of fifteen years, who had been recently married and part of the dowry was a new bicycle, which he very proudly showed us. This ethnographic material then can only give a generalist overview and it should be noted that there are many powerful women in Indian society, who have played and continue to play, a greater part in the politics of India such as the Ghandi Family from the Vaishyas caste. There are some famous Dalit caste members, one of whom raised himself to become President of India (KR Narayanan).

1.5 Women and Education:

Education is free for all children up to the age of 14 years, encouraging all children to become literate. However several studies using data from the National Household Survey and the National Census have identified that the literacy in girls is much lower than that of

boys, (Government of India 2011, Rustagi 2004, Govindasamy and Ramesh 1997, Basu and Basu1991). Illiteracy has regional diversity with the highest rates in the northern states of Bihar (66.5%) and Rajasthan (55.5%) with Madhya Pradesh illiteracy rate at 40%. The state of Kerela with the lowest illiteracy rate at 12% with 98% attending school, demonstrates that not all children achieve literacy (Rustagi 2004). This highlights the interstate differences indicating poor literacy for girls in the North of the country where this study is situated. Girls are often prevented from going to school in the lower caste groups, so that they can either undertake child care for their siblings or help in working to provide for the family (Desai and Thakkar 2001). In Kerela, the literacy rate is the highest in the country and is associated with the higher uptake of medical care with improved maternal and child health outcomes (Government of India 2011).

Literacy is often quoted as the reason for poor health outcomes rather than the poor interface between the social system and health seeking behaviour (Sarode 2010). Women are required to work and undertake household chores but their decision making ability is often restricted (Raj 2005). Vlassoff (1992) however reported that the higher uptake of schooling for girls appeared to reduce their autonomy as their families then seek to control their autonomy. Fear that the education may cause the young woman to desire a greater position and participation in family affairs may be the reason. On visiting a village we met a young woman, who had a university degree, who explained that she wished to deliver her baby in hospital as it was safer but her father – in – law would make the decision when the time came.

1.6 Women and Marriage:

Devi and Swain (1993) identified that the majority of their study population believed that the optimum age for marriage was 16-20 years; however some of the study population suggested that girls should traditionally be married before menarche. Child marriages have been illegal in India for many years and legislation requires women to be 18 years old before they marry (Van Hollen 2003). The vastness of the country and the lack of a formal registration system makes this impossible to "police" and child marriage still exists in some areas of the Northern regions. Giving of a girl in marriage is a contract between two families rather than between two people and is associated with the giving of resources in a dowry (Van Hollen 2003). Women find themselves in a lowly position as daughter - in – law, dependant on the position of the son within the family unit and there can be much abuse from mothers and sisters – in –law depending on the dowry, resulting in suicide in some cases (Krishnan 2005, Van Hollen 2003, Martin et al 2002, Desai and Thakkar 2001,

Lamb 2000). Personal autonomy varies greatly within regions (Jejeebhoy and Sathar 2001) but the society is gender exclusive and the hierarchical relations within the family means the male head of the family has total authority. Basic decision making remains outside of the sphere of many women in many families (Jejeebhoy and Sathar 2001). This situation remains until she provides a son, upon which she takes a higher social position within the family (Sathar and Kazi 2000), but this may mean that she still has little or no decision making capacity. The perpetuation of this internal family situation is maintained by the mother -in- law, who have all found themselves in similar difficulties. Embedded social behaviour will take many generations to improve, leaving many women vulnerable to abuse and in some cases murder (Rastogi 2006). Living out from the extended family is increasing but this leaves the women vulnerable without the extended family help (Lamb 2000).

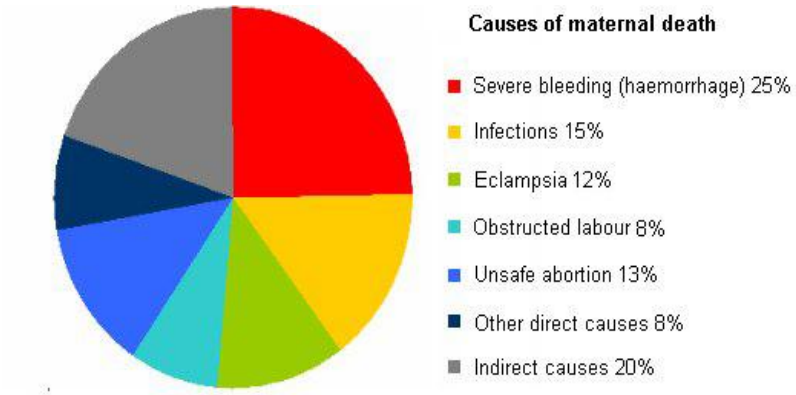
Domestic violence is a social issue that has a detrimental effect on the physical and mental health of women (Ackerson and Subramanian 2008, Abhay and Ravindra 2010). Ackerson and Subramanian also identified a link between domestic violence and malnutrition. Nineteen percent of women self -reported domestic violence from their family, usually from their husbands, which sometimes related to the withholding of food causing malnutrition. Abhay and Ravindra found, in their socio-demographic study into the empowerment of women in Madhya Pradesh, that women accepted this type of treatment by their families as it was deemed normal behaviour however this situation requires a change in attitude for both genders as well as society. It appears that this type of behaviour is worse in the lower classes where there is poorer educational attainment in the rural areas and is associated with the Hindu religion more than other religions. This would have a detrimental effect on their health resulting in a cascading effect by worsening pre-existing anaemia, which then impacts on pregnancy outcome and perinatal wellbeing. Domestic violence indicates the inequality of women and their lower social status (Abhay and Ravindra 2010)

1.7 Maternal health:

Indian maternal mortality rates have remained static for many years (Chaurasia 2000) and have not responded to any changes within the health system strategy. The main causes of maternal mortality in India are reflected globally (figure 1), as well as in India, most of which are avoidable. The northern and central states of India appear to have the highest maternal mortality rates of India as a whole (GOI 2011,IIPS 2000). There are contributing conditions such as poverty, poor nutrition and diseases such as tuberculosis and anaemia

(Rustagi 2004) as well as domestic violence, which affect the health of the population. Pregnancy adds another dimension to women's health and may result in a poor pregnancy outcome. If these are part of the daily life of women, they have a substantial impact on the wellbeing and survival of women. All of these, coupled with the low social position of women, impact on their physical and mental health. However, if they survive these and the possibility of death in childbirth; they outlive men (IIPS 2000).

Figure 1 Causes of maternal mortality Worldwide



Source: The World Health Report 2005. Make every mother and child count. Geneva, World Health Organization, 2005.

It is evident from the pie chart that 40% of the maternal mortalities are treatable and could be avoided if the services are provided by skilled attendants at delivery in an environment which supports them. The maternal mortality rate has been estimated as 498 per 100,000 births in Madhya Pradesh, the same as Uttar Pradesh and only being over shadowed by Rajasthan at 600 per 100,000 births (UNFPA 2008). Maternal health care in India provides only limited support to pregnant women, if they are within the rural areas or are poor. Paucity of resources and limited skills available to the primary health workers increase the problems already faced by women (Rustagi 2004).

1.8 Skilled Birth Attendants:

Maternal mortality is the main indicator used to assess the quality of the services offered to childbearing women (Louden 2001). In countries where the maternal mortality rates are high, the focus has been related to the assistance of skilled birth attendants either within institutions or not (Barber 2006). There appears to be an acceptance that those who are considered skilled birth attendants by definition (WHO, FIGO, ICM 2000) are exactly that; however the literature available does not focus on the skilled aspect of the attendant.

Following the lack of success of several initiatives to improve the global maternal mortality rates especially within the developing world by the World Health Organisation (WHO 1984); in 2004 the latest WHO initiative was launched, which put the skilled birth attendant at its centre (WHO 2004). It has been established that women die in childbirth

from preventable causes and that if they were attended by skilled health providers this would reduce mortalities (Koblinski 2003, Louden 2001). For many years there appeared to be an assumption that if health care providers attended an approved midwifery course in their country, they would be skilled in all aspects of care including emergency situations. Harvey et al (2007) suggests that this was not the case in light of the fact that the rates of death due to childbirth related conditions had not changed. This has recently been challenged by Nair, et al(2011) who state that the maternal mortality rates in India have indeed reduced since the focus has been directed to institutional delivery and skilled birth attendants. This debate is only related to the known outcomes as the health institutions do have an ability to transfer women to another institution for more appropriate care.

It has also been pointed out that these health workers require an enabling environment (Koblinski, et al1999), one which affords them the ability to transfer care to an appropriate provider. These healthcare workers are also expected to be multitasking to achieve a positive outcome, which require skills they may not possess.

There appears to be little consensus as to the level of competency or the skills required. The International Confederation of Midwives (ICM) has identified the midwifery skills required by midwives/skilled birth attendants (Fullerton, et al2004), and have indicated the length of midwifery courses, which should not be linked to general nursing. Many countries have nurse/midwives, who do not possess the required midwifery skills (ICM 2010, UNFPA 2011). A joint statement from the World Health Organisation, International Confederation of Midwives and the International Federation of Obstetricians and Gynaecologists (2009) identified that a skilled attendant was a “health care provider, who has midwifery skills, which includes doctors, nurses and midwives”. Although this has been an accepted definition for skilled attendants, the reality of which skills the attendants are competent to perform has yet to be established.

1.9 Ethics and Culture:

As this study is being conducted within a developing country where the social structure is complex and the role of women is submissive as identified previously, the issue of ethical practice requires some consideration. Ethical codes of practice when using human participants as subjects within research have been in place since the Nuremberg code of 1947, followed by the World Medical Association in the Declaration of Helsinki some twenty years later (Schneider 2006). Protecting humans from harm during research studies is the main focus of this global policy and covers psychological, physical and emotional issues including confidentiality, informed choice and privacy. These ethical principles are

applied to all research emanating from medical and non-medical institutions. The application of western ethics to non-western societies has been a subject for debate (Jegede 2009, MacNab et al 2007 Ryen 2011). Ryen (2011) suggests that the problem arises from the assumption that western ethics are universal. She continues to develop her argument by suggesting that being western is not about ethics per se but a way of knowing. Others argue that the west has represented the "indigenous world" through their own understanding rather than that of the indigenous people (Tuhiwai Smith 2005). Western ethics are based in the individual being autonomous (Jegede 2009) allowing personal choice and decision making, which is not necessarily transferable to other cultures. Many cultures have a collective approach and this is not congruent with the western belief and values. Asking for consent then becomes an extended family decision not an individual one (Marshal and Batten 2003). Robinson-Pant (2005) highlights two dilemmas in an ethical framework which is predominately from one cultural dimension. Firstly, whether or not to adapt to cultural differences in behaviour or beliefs but remain ethically correct. This might include being critical in less direct ways or even how to give gifts/payment within a culture, where gift exchange is related to status and prestige rather than generosity or bribes. Secondly, and more difficult is whether to adopt an insider or outsider researcher approach in the context of culture and how far to question or adopt new/contrasting ethical values especially within social research.

There appears to be an arrogant approach in the application of western ethics based on the centrality of the individual who is autonomous to a culture where the centrality of the individual is not the focus but the collective is central. This is demonstrated by the issue of informed consent as the senior male within the Indian family makes the decision not the woman herself and in other countries it is linked to the concept of trust (Robinson-Pant 2005). Signing to say you are willing to participate may be translated into a lack of trust or viewed with caution as anything legal may be viewed negatively. Traditional or cultural values often direct daily life and maintain social stability (Jegede 2009). Giroux (1985) suggests that the basis of all forms of behaviour is power and this is reflected in the ethical principles of research. Power distance is a concept developed by Hofstede and Bond (1984), and further developed and explored by Hofstede (1997, 2001). High power distance suggests that the greater the social distance between people, the greater the perceived power one has over the other. Hofsted suggests then that those in the lower position are less likely to challenge those in a higher position. In the context of the caste system this means that following orders and doing what is expected maintains the social hierarchy and therefore stability, even if you don't agree. This could be considered as a

subtle form of coercion. In his research Hofsted placed India within the middle of his power distance continuum as he worked within a company where highly educated people were employed. This then cannot reflect the whole of Indian society, but the principles could be applied to demonstrate how this society maintains its social structure.

One person out of their place could cause social conflict as the parameters of social behaviour would have changed and a new order would therefore be required. Maintaining the social structure is very important. Domestic Violence is one method of achieving this and has already been reported by Rustagi (2004). Working within a complex social structure which is very different, means that for an outsider any discourse needs to be carefully thought through. Challenges to the social order may cause those around to misinterpret the motivation and intended action, resulting in the potential of participants declining to participate. Concepts such as informed consent, confidentiality and privacy have a very different meaning in different cultures (Riessman 2005, Sardar 2006). My observation of people within this society is that they appear to be offered little dignity or privacy and therefore may not expect it nor necessarily understand it. An example is the way medical personnel continue to have conversations with others whilst examining patients, which occurred during my interviews with doctors and chief medical officers.

Within the western ethical framework the issue of `harm' is central to any review of proposed research. What does "doing no harm" really mean? There are the common applications in respect of physical damage which can also be applied to the psychological wellbeing, but does this extend to the social and professional areas of people's lives? Riessman (2005) calls for ethics in context rather than the application of abstract principles; this would apply to cross-cultural research conducted in a different country. Kumar (1999) suggests that the individual researcher is responsible to the research participants and there is a need to be more reflexive and accountable; although I agree with this, within a different social environment this presents some dilemmas. Lack of linguistic skills requires reliance on the interpretation of the conversations by others.

Institutions such as universities follow the required regulated principles of ethical concern but it has been well documented that this is not always helpful in international projects (Sin 2005, Tilly and Gormley 2007, MacNab et al 2007, Jegede 2009). Others have questioned the application of these principles within the social research arenas, when the expectations in the positivist paradigm control all expected ethical considerations as they have an objective position. Whilst in social or Action Research the researcher is much more involved with the participants and this conventional implementation of ethical principles does not take into consideration the unexpected situations which arise (Guillemim and

Gilam 2004). This is supported by Eisner (1991), who purports the notion of flexibility, as it may be inappropriate to comply with these basic principles within the context of the social situation. Boser (2004) argues that this "power" exerted by the ethical committees' forces those, who are not of the positivist paradigm, to comply with principles which are related to a power hierarchy which does not exist where the research is being carried out. The view that power means dominion is not congruent with the concepts of social participatory research, where the aim is partnership not control. However this may not always be the case when working within a social context such as India where there is a powerful social hierarchy. Rigidly directing the way forward is not the only method of leadership to take in this matter. Using other methods to achieve an ethical approach may be required.

Cultural sensitivity is a constant aspect of working within different societies, which heightens the feeling that one needs to be in a constant state of personal self-awareness and vigilance, maintaining social acceptance without compromising your personal beliefs and values. However this may occur without ones knowledge due to the lack of social understanding.

1.10 Personal Philosophy

As a participant within this process it is vital that my personal beliefs and values are also considered. Whatever the role within a research study, we make an impression on the design, planning and implementation and those we work with in partnership. Like pebbles thrown into a pond waves are generated and we cannot disregard the impact that we have (Van Maanan 2010). The impetus for this study is the desire to transfer my midwifery knowledge using my thirty years of experience in clinical midwifery and education, to have a positive impact on Indian midwifery practitioners and therefore upon the lives of women. The World Health Organisation has identified that skilled attendants at birth make a difference to the mortality and morbidity of women. As a midwife my skills are used to ensure that safety for mothers and their babies is central to their care. As an educationalist the passing on of knowledge and skills is a daily activity which through this study has been extended to others of a different culture and society. I believe that offering appropriate education to all, frees them to make their own decisions. These principles of education, emancipation and personal choice are aligned to those of social philosophers such as Friere, Lewin and Habermas, even if their ideology differs. These social theorists will be discussed further in chapter 2.

1.11 Conclusion:

This background review has established that Indian society is complex and consists of a caste system, which denotes the social position of families and division of labour of its population. Women's role and position within this context is dominated by their gender and the paternalistic control over every aspect of their lives by husbands or senior male members of their family. Pregnancy and childbirth are their main function, which also is controlled by their husbands in many cases. Many women have little or no decision making power in many aspects of their lives within some strata of this society, which also impacts on the role of the ANM. This is both personally and professionally, as the personal may over-ride the professional when caring for women who are pregnant or in labour within this complex society as husbands may not allow evening or night visits to labouring women.

The need here to reduce the maternal mortality rates in pregnancy and childbirth is on the political agenda and the state of Madhya Pradesh has reviewed their policy and made a political decision to strengthen midwifery services. As a midwifery educational consultant to the state government on this matter, I assisted in developing a strategy to achieve the state government's political aim.

Cognisant of the factors of social constraint on women, which would include me and the ANM, combined with the need to meet the political agenda, I had to explore a method which enabled a problem solving approach within this context. In chapter two, an Action Research approach is discussed within a critical theory framework. Models of Action Research are presented with the application of the preferred model.

Chapter 2 - Study Design

2.0 Introduction:

In selecting a method for the execution of a study, Bryman (1984) suggests that the researcher is already committed to the underpinning philosophy of the method. Whilst this does have a bearing on selection, it is not the only consideration as the method is required to be fit for purpose. Given the political and social structures related to this study outlined in chapter one, it is important to identify a research approach which offers flexibility and cultural sensitivity to address issues as they arise. Paradigms, either qualitative or quantitative, offer a structured approach (Meyer 2010) and are not able to allow the flexibility to respond to issues, which emanate from such social complexity and meet the problem solving outcomes in this study. The research approach of Action Research (AR) within the critical theory framework has been selected as it allows the study to unfold and offers some dynamic process management options (Le May and Lathlean 2001) suited to the cross-cultural dimension of this development. An essential component was flexibility as the cultural/social and professional aspects of this study could offer some unpredictable challenges and outcomes (Chapter 9 discusses some of the challenges further supported by an appendix covering the theoretical component). Meyer (2000) suggests that AR is a method of practical problem solving and is one of the major considerations for achieving a positive outcome to this practical study. Collaboration is a main adjunct of this method which uses a cyclical system to problem-solve issues. Both approaches have strong ideological foci on social change and emancipation underpinning their characteristics.

2.1 Critical Theory:

Critical Theory as a method to analyse social issues related to the human relationships has been attributed to the Frankfurt School of Social Research in the 1920s (Chinn 2011, Sumner 2003, Kincheloe and Mc Laren 1994). It focuses on the world and the structures within society, both ideological and social, which prevent the development of humans to achieve their potential (Sumner 2003). Following the two world wars these issues within society were again in the forefront of social research. Several social theorists, such as Freire (1964) , Giddens (Bernstein 1984), Habermas (1971, 1987) and Rogers (1980) developed social theories which viewed social structure as a human construct and as such can be changed by them. Political ideologies such as Marxism, underpinned this philosophical approach and the combination of the two culminated in a critical inquiry (thinking) approach to investigate social dimensions of inequality, unjust social structures

and domination. This approach is therefore constructed on the premise that the human condition is a social construct and the asymmetry of power, which exists within that social structure (Alvesson and Skoldberg 2000), can be changed. The two well-known social theorists are Freire and Habermas (Chinn 2010) as they appear to have written extensively and have been influential in the development of a critical theory approach which is used in nursing and midwifery research (e.g. Wilson-Thomas 1995, Fulton 1997).

The fusion of Freire and Habermas methods of critical thinking, education and emancipation are aligned to those of Lewin's (1945) approach within Action Research of problem solving, participation and reflection. Freire's work in Brazil as well as the post second world war work of the Frankfurt School (Habermas 1971), slowly began an evolutionary and perhaps a revolutionary process now used by many countries to develop an educational process which emphasises the development of critical thinking (Freire 1964). Freire identified that the individual, who was caught in an unjust situation, could through their understanding of the causes of this situation transform it through action. Through his experiences, he found that those who were disadvantaged were not seen or heard, but they could, given the opportunity to develop social skills, be the answer to their own emancipation.

Habermas's framework for the emancipation of socially disadvantaged groups involved critical inquiry (thinking) into the structures and interactions of their society which develop and maintain unjust social circumstances. He identified three areas of interest which related to every aspect of human life, Practical, Technical and Emancipatory. Both Freire and Habermas espoused similar methods which they used to improve the lives of the vulnerable. This common theme of emancipation is also evident in Lewin, who used Action Research to improve the working environment in large complex industries. There are some dissimilarities between Lewin and Freire, which are reflected in their methods; Lewin worked in partnership with both the workers (the oppressed) and the management (the oppressor) whilst Freire worked alongside the workers so that they would influence change in the management. Reflection is considered fundamental to these approaches as it aids the development of self-awareness. Self-awareness initiates an understanding of any personal bias which may cause barriers in personal interactions. A critical theory approach is applied throughout the whole study as there is a need constantly to problem solve as challenges arise and this is explored further within chapter 7.

2.3 Action Research:

Action Research was initially attributed to the work of Kurt Lewin in 1946 (Friedman and Rogers 2009) and successfully applied to the solving of industrial relationship problems (Gustavsen 2008) and organisational management (Cassell and Johnson 2006). This reflects Lewin's belief and value system with its basis within the social sciences; the underpinning characteristics are related to empowerment and education in a collaborative process to achieve social change. The concept of participant researcher (McNiff, et al 2003, Waterman et al 2001, Hart and Bond 1995) supports the process of this approach as does the inherent principle of praxis through learning on and in practice (Schon 1983), initiating social change (Lewin 1946) and utilising a problem solving approach (Meyer 2010, McNiff, Lomax and Whitehouse 2003, Hart and Bond 1995). Morton-Cooper (2000) suggests that the aim of AR within nursing is to improve professional practice and raise the standards of service provision. This approach allows the researcher greater flexibility to achieve both personal and professional development together with the potential of influencing the personal and professional development of others.

Within the literature there is some confusion as to an exact definition of Action Research (Costello 2003, Le May and Lathlean 2001). Reason and Bradbury (2006) suggest that it is an orientation of enquiry rather than a methodology, which seeks to inform and influence practice. They also put forward the concept of a dynamic process, which changes and develops as the process unfurls. Previous authors have considered that it is action disciplined by enquiry (Hopkins 2002) while Waterman et al (2001) suggested that it is a period of inquiry, which explains the reality of social situations with action. This involves a change intervention aimed at improvement and involvement. Waterman et al's definition outlines this study as it seeks to change practice through the action of an intervention. Meyer (2010) proposes that AR is an approach to research rather than a method with defined data collection and methods of analysis. Its principles are related to people as participants not subjects in a research study and it has been used in practical settings such as teaching and health care (Williamson and Prosser (2002). However Hart and Bond (1995) have, through reviewing that literature, developed a typology. This typology has seven characteristics and is used within four identified research domains. Their four domains of Action Research are experimental, organisational, professionalising and empowering. The seven characteristics represent a basic framework which has social and research components from which an Action Research study can be measured. These include education, collaboration with social groups, problem solving within a social

context, utilising an intervention which seeks to improve the situation through involvement of the participating social group and the research has a cyclical process.

Action Research is described as polyvalent, a term used in science to describe the power of atoms to combine in different ways to form a compound. Action Research combines various methodological approaches to data collection and analysis to achieve the research aim (Drummond and Themessi-Huber 2007). Le May and Lathlean (2001) argue that this adds to the confusion due the lack of clarity regarding the data collection tools and may add to the confusion of where Action Research is situated within the paradigms and I agree.

With its foundations firmly embedded in social science it is not difficult to understand that the principal pillars of this iterative process are related to social change and the development of the people involved. Participation and collaboration therefore are required components of the process and Meyer suggests that the researcher is an instrument of change (Meyer 2010). This aspect will be further explored within the design.

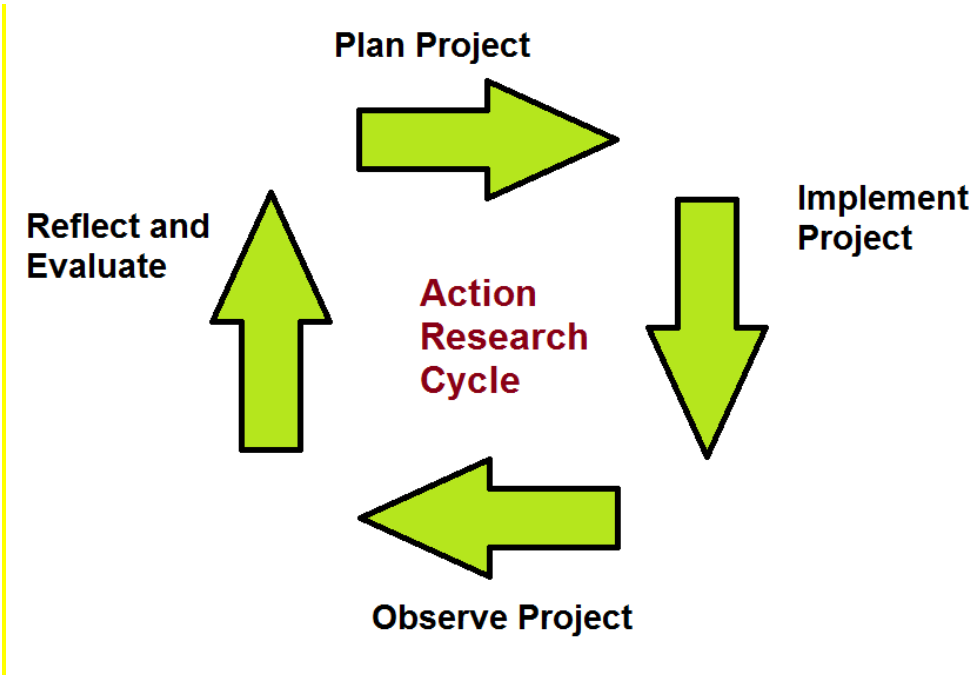
2.3.1 Cycles:

Each project needs a framework which guides the development and aids the focus. Authors describe a process which has a circular rather than a linear application (Koshy, et al2010, Hart and Bond 1995) and includes problem identification, planned action and evaluation. Stringer (1999) has simplified this further to "Looking, thinking and acting". As each cycle leads into the next, evaluation is a necessary facet to link the whole process which has been described as a spiral of cycles. Depicting models in this simplistic manner has continued in many authors' work (Hart and Bond 1995, Costello 2003), without any explanation of the complexity which lay within. There are many models (Yales and Engels 2010, O'Leary 2004, Elliot 2001) each with their own unique demonstration of the cycles. In assessing the Action Research cycle presented in the literature, it is evident that these authors do not all identify clearly the intricacies of the process. The simplified Stringer version does not address evaluation within the cycle but it is assumed that the researcher will apply critical analysis to the outcome of the action. Neither does it address the complexity of managing this type of approach which could naively be considered as simple.

The diagram by Yales and Engles (2010, Fig 2 adapted) identifies the stages of the process of Action Research but again does not address some of the fundamental underpinning exploration required to ensure the best possible solution to the identified problem. There

may be many cycles to each project as they evolve all requiring the same attention to detail.

Figure 2 An example of an Action Research cycle (Yales and Engles 2010 adapted)

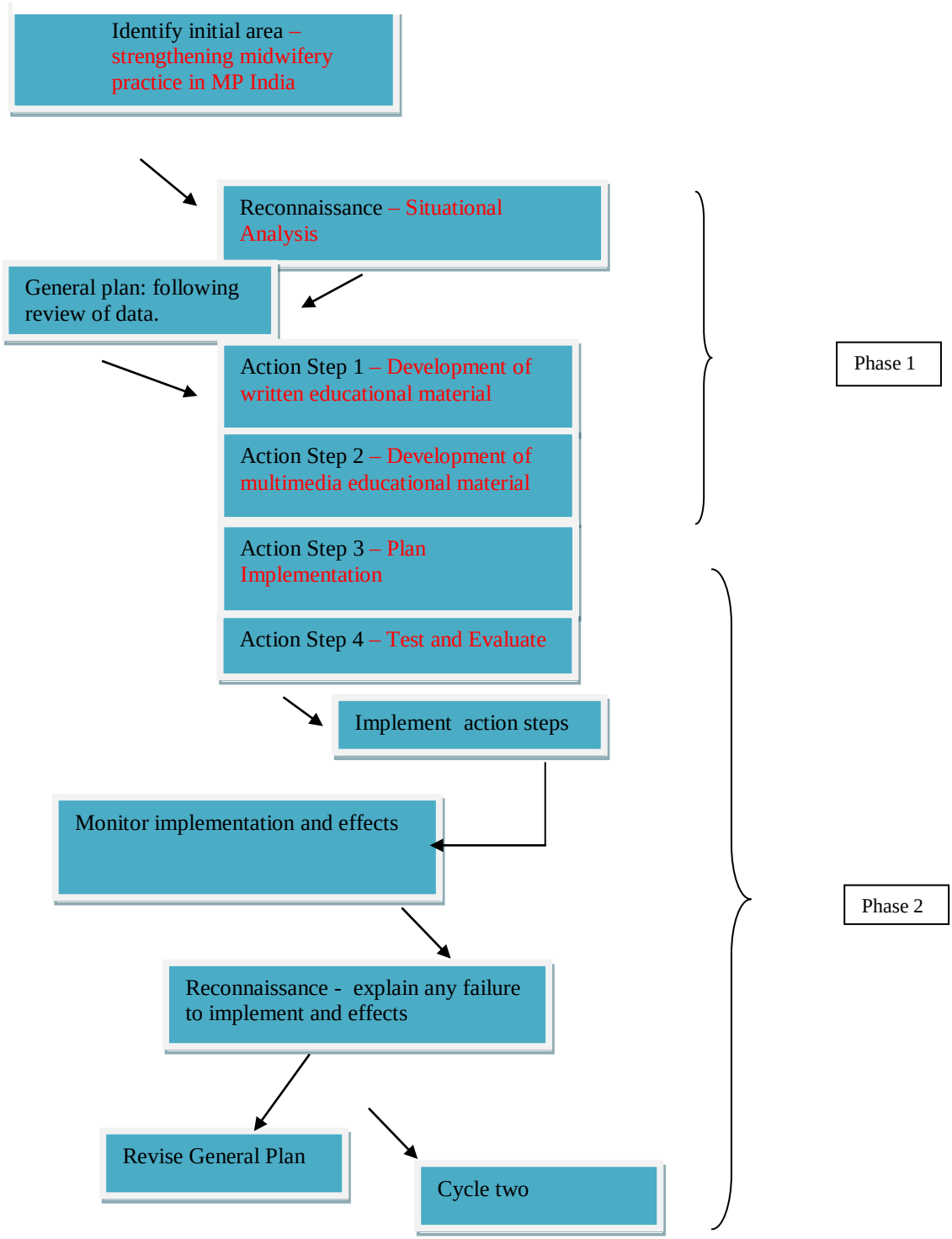


Whilst Action Research is often depicted as a cycle there are models which are presented as a linear approach (Elliot 2001, figure 3; page 23) but this process is repeated so it is continuous like a cycle. Identifying an issue, which requires investigation, occurs prior to any planning. In this case the issue is the professional development of ANM in their knowledge and skills in understanding of pregnancy and childbirth in light of the State government's desire to strengthen midwifery. Costello (2003) points out that the main components are action and reflection which appears to be a repeated theme within many of the models reviewed. However the model used to guide this project is by Elliot (2001). Elliot's model was developed from educational AR and offered greater clarity as it demonstrated the application of the method.

2.3.2 Design:

The design of the project is guided by the cyclical and spiral nature of the cycles within the chosen model. Each aspect of the study will be identified by different actions which act as objectives to fulfilling the desired outcome. Whilst there appears to be complete cycles within the process, there may be subsidiary cycles as other related issues arise causing a spiral effect (Herr and Anderson 2005). Elliot's model appears as a linear map of the action points, however it is repeated throughout the enquiry therefore is a cyclical method. This is diagrammatically explained in figure three using Elliot's model with the study actions in red.

Figure 3 Elliot's (2001) Action Research Cycle (applied)



2.3.3 Insider/outsider debate

As I was a participant within this study, there is a need to explore the notion of being an inside or outside of the researcher in the process. There are two potential perspectives within this study as I could be considered both an insider and an outsider. Brannick and Coglan (2007:59) suggest that insider research is "undertaken by members of organisational systems and communities". From an insider perspective within this study there is a requirement to understand the professional issues of developing midwives which

may have a positive influence on their practice and therefore on service provision. Using my years of experience within midwifery education and practice I have the skills to enable me to achieve a critical review of the situation and support any planned action. My personal midwifery experience also links me to the ANM who are the focus of this study. This Action Reaserch study required the ability to review the professional aspects of midwifery within Indian culture. Meyers (2010) agent of change concept is embedded within this process as the aim is to improve the clinical practice of the ANM.

My other perspective is that of an outsider who has little understanding of the organisation and social dimensions of the Indian culture. I therefore needed a guide through the possible difficulties which might arise due to my outsider position. This aspect was the responsibility of my Indian partner, who organised meetings and arranged workshops. This demonstrates the different levels of partnership which develop within this study. Recognising these differences of insider or outsider positions established the working relationship and levels of collaboration within the partnerships. This social/professional working demanded a level of dexterity to be able to work across the gender/caste/professional barriers.

Figure 4 Matrix of insider/outsider relationships

Consultant	Participant
Partner	Collaborator
Equality	Inequality
Experienced/expert	Inexperienced in context
Educator	Student
Leader	Follower

My experiences, discussions and workshop activities were recorded within a diary to enable reflection and contemplation which resulted in possible solutions to challenges and aided debate with stakeholders.

2.4 Ethical consideration for this Project:

All projects which use human participants are required to fulfil the standards of ethical conduct. However as this study is one which evolves as it progresses through a problem solving approach and the journey cannot be predicted, the issue of ethics is then more complex as the process cannot be predicted (Meyer 1993). This study like all others requires the consideration of the participants and the traditional aspects of confidentiality, informed consent and the right to withdraw. Again this is more complex as this study is not

within a society where the individual is autonomous. Caballero (2002) whilst discussing ethics within a randomised control trial within developing countries has made some interesting points. He suggests that consent using husband's permission is acceptable within certain circumstances. He continues to prefer that the permission should also be sought from the woman, which is congruent with collaborative working and a women centred approach. Robinson (2006) supports this by saying that people will only participate if they wish to. The dilemma is to ensure that these principles are present within the study but also acceptable to a culture where privacy and dignity do not appear to have the same meaning as British culture, which became evident when undertaking the situational analysis. The Indian aspects of this study are managed by my Indian partner, whose knowledge of the Indian requirements were respected due to his extensive experience of undertaking research studies using the general population. As this study was under the supervision of a University educational programme, the proposal was scrutinised by Peer review following the required university standards. The issues which could present themselves are relating to informed consent, privacy, dignity and confidentiality. Ethics in this type of study are not initially clearly documented, due to the iterative process but then add to the complexities of a cross cultural study where the site of the research is within a different country to that of the researcher.

Each action step of the study will have the integrated literature and the evaluation of each cycle as it progresses. A colour coded schematic diagram will be at the beginning of each part of the cycle to identify the contents and the involvement of the partners.

2.5 Aims and objectives of the study

The original aim was to "identify *an educational process which would support the ANM in developing their knowledge in midwifery".* To do this the objective was to undertake a situation analysis (reconnaissance – Elliot 1991). Having completed the situational review this aim was refined and a hypothesis was developed.

Aim: *Evaluate the effectiveness of a specifically designed distance learning package to improve midwifery knowledge concerning normal pregnancy and childbirth for the ANM in India.*

Objectives were devised to achieve this outcome.

- Develop a distance learning package to advance the knowledge of the ANM.
- Translate and publish the educational programme onto Hindi
- Produce a multimedia package to support the participants learning

- Pilot the educational programme
- Evaluate this method of education for health staff development

2.6 Data collection tools

- Data from the reconnaissance recorded in field notes.
- Data collected from the evaluation of this education method by two questionnaires, a pre and post Multiple Choice Question paper (MCQ) followed by a personal evaluation questionnaire after the period of study.

2.7 Data Analysis

- Data collected during the reconnaissance analysed using PESTLE and SWOT, identifying the main issues affecting the planning of this study.
- Data collected from the MCQ papers analysed using Wilcoxon signed ranked statistical tool (SPSS v 18)
- Personal evaluation data collected are reviewed for the main positive and negative comments.
- Personal reflection using field notes of the meetings and discussions throughout the study (Chapter 9)

2.8 Study overview

This study is in two phases and comprises of two cycles which are:

Phase 1

Identifying of the issue: This represents the initial exploration of the issues surrounding strengthening midwifery within the State of Madhya Pradesh. This resulted in the three day workshop in Bhopal in 2000, during which the discussion regarding a three year direct entry programme for midwives was part of the proposed strategies to address the situation.

Further discussion related to the development of a distance learning programme for the trained ANM. There had been a failed attempt to change the State Law (so that midwives can be registered and practice within Madhya Pradesh) due to a State Election of government which culminated in a change of political party, so the second strategy of a distance learning programme was agreed:-

Reconnaissance (Elliot 1991): Situational analysis (Rowntree's first stage (1994), Needs assessment (ADDIE 2001)

Field visits to three Indian States (Rajasthan, Uttar Pradesh and Madhya Pradesh) with interviews with State Ministers of Health and Family welfare, Doctors, Teachers of ANM, ANM in practice, Student ANM and women.

An analysis of the findings was undertaken using PESTLE and SWOT models.

Action Step1: Development of the distance learning material (Rowntree's second stage (1994, design: ADDIE 2001)

Action Step 2: Development of the multimedia support for the self-directed learning programme (including formative evaluation ADDIE 2001).

Phase 2.

Action Step 3: Plan Implementation

Action Step 4: Test and evaluate (Rowntree's third stage, ADDIE 2001)

Monitor Implementation and Effects: Evaluation and reflection (Rowntree's fourth stage).

Reconnaissance: Explanation of any failure of implementation and effects (Elliot 1991, ADDIE 2001)

Review Plan and commence cycle 2.

Chapter three outlines the review by the State government of Madhya Pradesh of maternal health services provision and the proposed methods for strengthening of midwifery within the state. This represents the beginning of the study by identifying the problem.

Chapter 3: The Beginning: identification of issue

Identifying initial issue: Madhya Pradesh State Government review of maternity services

The presentation of this aspect of the study is to place it within the political context of the State and explain the limitations resulting from the control by the State Minister of Health and Family welfare. The aim of initial review of the maternity services within the State of Madhya Pradesh undertaken by the Department of Health and Family Welfare was to outline the type of action required to address the maternal mortality rate which had been static for many decades, but remained very high (Ranjan and Stones 2004). The drivers for this inquiry were the Millennium Development Goals 4 and 5 (WHO 2000) which called for the reduction of global maternal and child mortality rates by 2015, to which the Indian government was a signatory. It can also be seen that if the International Congress of Midwives standards for midwifery education and scope of practice were to be applied, the number of qualified midwives would be considered very low, as the length and breadth of the ANM education and training are not compliant with the standards (UNFPA 2011, ICM 2010).

A needs assessment undertaken by the State government of Madhya Pradesh identified a lack of Indian expertise in midwifery education and practice within the State. This highlighted the need for further consultation with experts in midwifery education to provide an expert view to meet the desired outcome of strengthening midwifery within the State. Consultation through a workshop was designed to discuss the possibility of providing improved midwifery education within the State. This included the Indian Nursing Council, representatives from United Nations Fund for Population Association (UNFPA) and Non Government Organisations (NGOs) working in midwifery related areas, local medical personnel, members from the medical council and myself as a midwifery educator. As part of this workshop, groups were organised to discuss aspects of having a new cadre of health professional and how they would be educated. One group, chaired by me, was asked to devise a curriculum for midwives. Within this discussion the professional knowledge base was debated by all participants, some of which was used to develop the areas covered by the educational materials and develop the learning outcomes discussed in Chapter 4.

A Taskforce group had been established in 2000 to explore the issues raised by the consultation process and a decision was made to have two approaches to address the problem.

Firstly, to explore the possibility of a 3 year educational programme for midwives (Foss and Chaurasia 2004), which necessitated a change in the State's legislation as midwives, who are not also nurses, are not licensed to practice within India. Secondly to improve the ANM's knowledge and skills through an educational package delivered across a large geographical area.

Midwifery as a single professional qualification does not exist within India at present and such an arrangement was predicted to meet with some resistance both politically and professionally. State registration of midwives would offer them employment only within the state where they were registered. The workforce planning committee investigated capacity building (Chaurasia 2004) to ensure that the quality of care offered would be of a high standard. Following a period of consultation by the taskforce group, it was decided to act upon the first approach to strengthening midwifery within Madhya Pradesh State. A three day workshop was organised, involving all stakeholders, to explore the requirements for a three year undergraduate educational programme for midwifery. The aim of the workshop was to develop a strategy for the development of a curriculum to educate the midwives, who would be registered to practice within the State. This proposal met with a wave of resistance from the Indian Nursing Council as they had developed a BSc in Nurse/Midwifery and would not sanction a Midwifery only programme.

The State government pursued the development further. The scope of practice for these new midwives and the legal requirements for their registration to practice within the State needed to be further investigated, as they would be required to undertake practices, which were not within the current scope of the ANM or degree nurses. These included prescribing and administering drugs which at present required a medical prescription. I was invited to participate as a consultant in midwifery practice and education to broaden the discussion and chair a group "mapping" a curriculum.

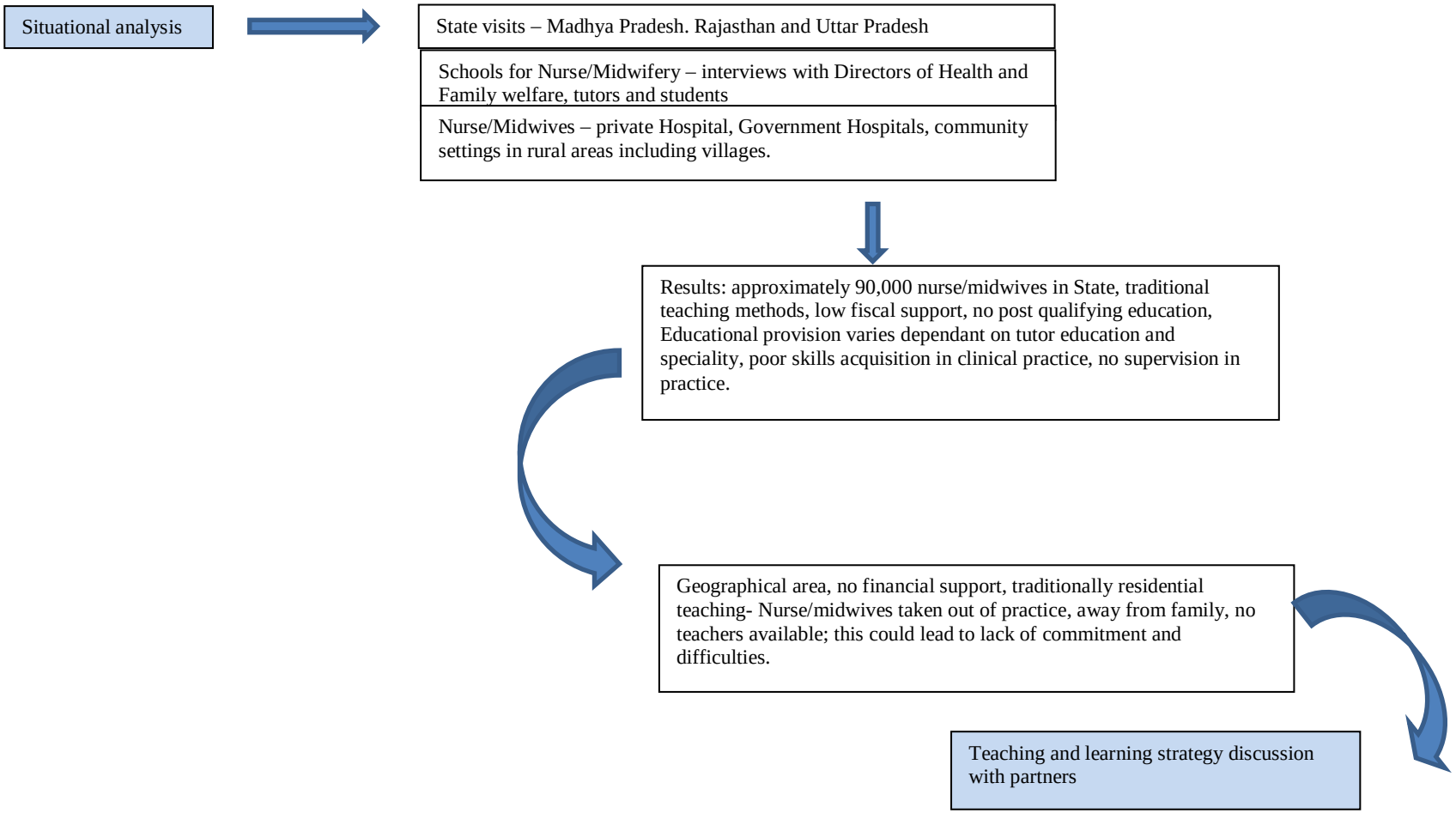
Following a turbulent period of discussion and consultation (2000-2004), a change in legislation was prepared and this was followed by some further discourse with the legal departments in both the State and National governments as the title of 'midwife' and 'dai' caused some debate. Nationally, a dai was considered to be a midwife although they were women who are illiterate and had no formal training. The accepted definition of a midwife globally, had greater academic and professional status. Finally the change to the state legislation was complete but was unable to be installed within the constitution, as a state

election in 2005 changed the governing party and the focus for the development of the health services dramatically changed.

The second suggestion, to up-date the knowledge of ANMs in service, did not require any state legislation changes and could be investigated further without governmental approval. This offered an opportunity for me to work with the Shyam Institute on this study, which would require further understanding of the situation before any solutions as to how to proceed could be considered. This led to an enquiry to establish the feasibility of the proposed task, to improve the educational underpinning of the ANMs in clinical practice. Scoping the role and education of ANMs would give an insight into their possible requirements for post qualifying education. The diagram below outlines the situational analysis which is used to aid the decision making process.

Reconnaissance: Situational analysis.

Problem: what is the situation of maternal health care within Madhya Pradesh?



3.2 Reconnaissance: Situational analysis

Further investigation into the feasibility of using any method of education required some consideration of factors which affect those who would participate in the educational process. Rowntree's (1994) first step in developing an educational strategy requires an understanding of the social, educational and professional status of the audience of the educational programme. Elliot's model (1991) refers to "reconnaissance" and is part of the "looking" process described by Stringer (1999), before a general plan can be developed. Gathering and analysing the information before discussing with stake holders how to best address this situation was vital. A situational analysis of all these aspects was therefore required to provide the basis for any decision making or general plan development related to an educational strategy or method of teaching and learning. This analysis together with the fiscal situation in Madhya Pradesh will influence any outcomes for future development and a PESTLE model was used to further enhance the analysis.

3.2.1 Reconnaissance Schedule

Visits	Data Collection: Recorded in Field notes
National Department and Three state Departments of Health and Family Welfare; Rajasthan, Uttar Pradesh and Madhya Pradesh	Interviews with three Ministers of Health and Family Welfare.
Three district hospitals, Two primary health clinics, Two sub-stations, One private hospital.	Interviews with three Chief Medical officers, Two medical officers, Four ANM
Six schools of ANM	Interview with six Teachers of ANM, Two groups of ANM students
Three villages	Interviews with three women with permission from their husbands or fathers-in-law

An organised visit in 2004 to explore these aspects in three Indian states of Rajasthan, Madhya Pradesh and Uttar Pradesh in the Northern/Central part of India. All these states

have high maternal mortality rates with low literacy and social status of women. During these visits I as accompanied by an Indian colleague with the language and cultural skills required to ensure a successful outcome.

The itinerary included:

1. Departments of health and family welfare:

National and State Departments of Health and Family Welfare in Rajasthan, Uttar Pradesh and Madhya Pradesh , who have the responsibility of providing health services throughout the states. I met with the Dean of Studies in the National Department of Health and Family Welfare in Delhi. Through discussion with her, an exploration of possible options to strengthen midwifery within India took place. She became very interested in the possibility of an educational programme as an in-service training for ANMs to improve maternal health provision and was keen to be informed of any progress if this were to be decided upon.

The State Ministers' reaction varied and their apparent underpinning beliefs and values dictated their views. One minister was very interested and discussed the potential of any educational programme. He highlighted the difficulties of the expansive geography and fiscal requirements for institutional education, for which funds were not available, and the traditional teaching methods used.

Another showed little regard for the state of women's health and was indifferent to a proposal to improve the knowledge and skills of the ANM. The final minister showed no interest but sanctioned our visit to a school for the ANM training within his authority. These meetings were very difficult, as the discourse was in front of many other people who wished to speak with the minister. This lack of privacy meant that the minister could gain support from others within the room to his attitude towards my proposal, this at times creating a very negative atmosphere.

2. Educational institutions:

Visits within these states included six schools for ANM training. These offered an insight into the diverse standards which exist in both education and clinical practice experiences. The national curriculum for the training of ANM originated from 1976 and continued without review until 2010. Although several requests were made to the Nursing Council and several promises given, this document was not made available. Of the six schools visited there were two which had teachers with valid clinical experiences in nursing and midwifery. These teachers had a degree in Nursing and were very committed to providing the best education they could, with the limited

resources available. The main educational textbook was a Textbook for Midwives by Myles circa 1956, which had recently been translated into Hindi. The discussions with the teachers identified many issues including student selection: not controlled by them but others. The lack of clinical experience they could offer students due to the medical officers controlling the practice arena, preventing students' access to patients. However, one school in Madhya Pradesh had worked hard to overcome this obstacle and their students had the opportunity to deliver babies in the hospital setting.

In one school the teacher employed to run the programme for the education of ANM was not the most suitable, as she was neither a nurse nor a midwife but a social worker. The lack of trained teachers with clinical experience added to the poor educational experiences for some of the students.

Discussion with some students also highlighted the limited experiences and learning resources, which prevented them from acquiring the knowledge and skills to practice their new profession effectively. The respect they had for their teachers was high and reflected the status of teachers in Indian society.

3. Visits to the ANM:

Community visits provided an understanding of the ANM's daily practice. These visits included health facilities from Sub-stations, where the ANMs are situated in the villages and primary health centres, where there was only one doctor, who often was not a woman with specialist obstetrics and gynaecology knowledge. One primary health facility had an expert in Ear, Nose and Throat disorders, who was expected to cover all aspects of medicine including maternity cases. Every doctor has a rural placement following their training but many refuse to fulfil this part of their clinical commitment (Saini et al 2012). The low standard of infection prevention was apparent from the washed latex gloves drying in the sun and the unclean linen on delivery beds. The lack of equipment and drugs were the focus of the discussion.

A woman doctor at the district hospital talked as she continued with her clinic in full view of everybody and expressed her anger at the amount of work she was required to do. This also demonstrated to me a lack of privacy and dignity for those who were seeking her professional advice, but it appeared to be an acceptable method of working. She also felt that she was totally responsible for the care given by the ANM to women in labour and would, when necessary, come and listen to the fetal heart every 15 minutes. At another district hospital the Medical Director was very interested in improving the skills and knowledge of the ANM in the community. He

listened as the role of the British midwife was explained and discussed the role of the midwife in emergency situations. His reaction to the discussion was to train all his ANMs to be able to cannulate women, so they may have the chance to stabilise the woman's condition, if they needed transfer to hospital for postpartum haemorrhage, totally missing the need to control the bleeding first. The ANMs were very happy to talk about their practice and the limitations they experienced, demonstrating a lack of knowledge and skills to provide high standard of care within the communities where they were employed. Post qualifying education was not available to update knowledge or skills and many ANMs have found that they lost confidence in using skills which were used infrequently. When asked if they would like further education, the response was mainly positive. Many issues of complex antenatal and labour situations they felt inadequate to deal with. These included the lack of a good transport system and roads, the distance to travel to a health facility which was equipped to manage a critical situation and the need to gain family permission to refer the woman. Poverty often meant that transfer was not possible and poor roads deteriorated further in the rainy season, resulting in either maternal or neonatal morbidity or mortality. This highlighted again the low status of women combined with the low status of the ANMs within the health system causing delay in transfer with the strong possibility of a poor pregnancy outcome.

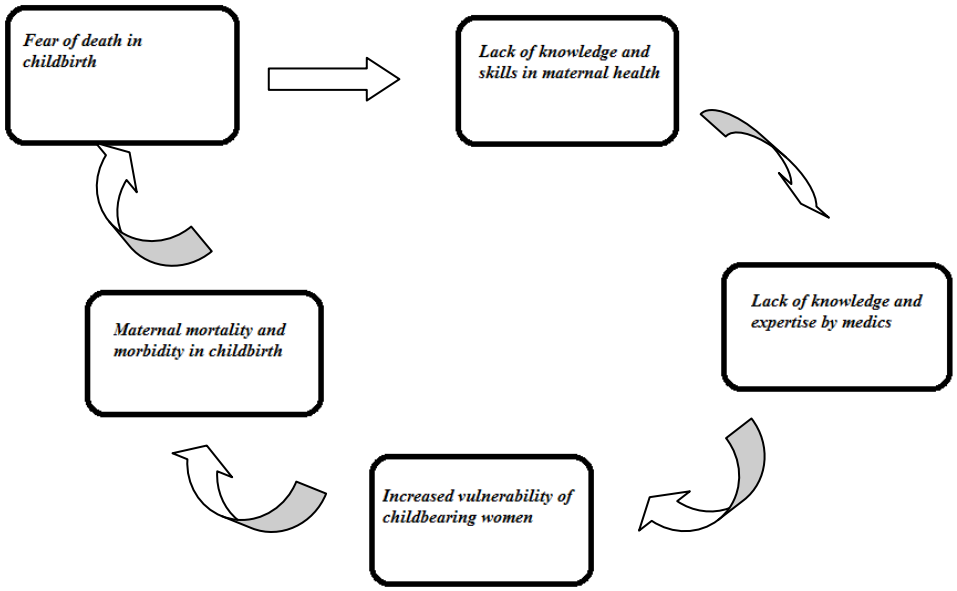
4. Village visits

   Visiting villages with the ANM was an interesting activity as it put their story into context and gave an opportunity to talk to women about their experiences of the services provided and their concerns for their own wellbeing. Many were worried they might die in childbirth and wished to be delivered in a health facility, but had not considered the competence of the medical staff within them. Governmental Policy for reproductive health services was that all women should achieve delivery within the safe environment of a health facility but as yet the Government had not addressed the issues of unskilled attendants at birth. There may have been an assumption that the medical and midwifery staff were educated for this task and did not lack knowledge and skill to achieve a positive outcome.

Utilising the information gained from the discussions with women during the situational analysis, figure five demonstrates the issues relating to the concerns of Indian women as well as issues within the health service provision. It can be seen that some of these are

duplicated in the PESTEL analysis (figure 6) however, it gives greater credence to the issues as these are the voices of women using the service.

Figure 5 Diagram of issues in maternal health care



Discussion with the Minister of Health and Family Welfare in Madhya Pradesh identified that the number of ANMs working within the State was approximately 90,000. Most were working within community settings and isolated from professional medical support. At the time of this discussion (2004) the Minister of Health and Family Welfare was a woman, who was very interested in improving the knowledge and skill of the ANMs. After the election this role was taken by a male medical doctor, who was not that interested in the proposal. This could have been his cultural view of women or his professional view of ANMs or the possibility of financial implications; it was difficult to identify a reason. While he did not show a positive attitude he did not obstruct the continuation of the study.

Using the PESTLE model (figure6) the findings from the field visits and meetings with health personnel and women were analysed to identify the main issues to aid the decision making process. These considered the broader issues which impacted on the effectiveness of the service delivery by ANM and the possible issues which would impede the development of an educational programme.

Decision:

Following the situational analysis it was apparent that the educational needs of the ANMs were related to their knowledge base and clinical skills including clinical decision making.

The geographically dispersed nature of these health workers and their large number provided a challenge to meet the requirements of improved knowledge and skills. Traditional didactic teaching methods are employed within the pre-registration nursing and midwifery education programme which caters for small numbers of residential students and is the usual method of providing education at all levels. This requires commitment from the Chief Medical Officer to send ANMs to a single destination, financial outlay for travelling costs and the teaching staff. A "diem" is usually given to those who are undertaking a residential course, increasing the financial burden. This would also mean that the ANMs were not working for the duration of the study period causing a reduction in the care offered.

Many families would be without the mother as she would be away on a residential training programme, increasing the burden on other family members if living in an extended family but increasing problems for those without this support. Many may not attend if the distance is too great and the period as too long as their husbands would prevent them attending.

Figure 6 PESTLE model outlining issues

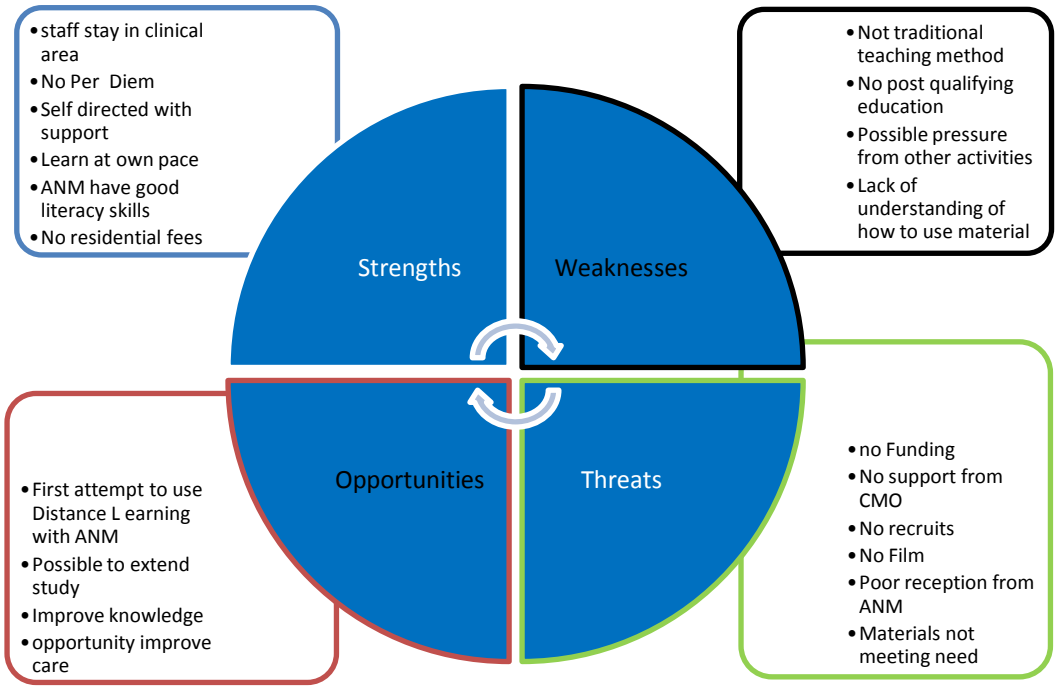
Category	Factors (in no particular order)
Political	• Federal government policy to reduce maternal mortality in line with MDG5 • Ministers who are innovative and who embrace change • Lack of fiscal funds available to support any development. • Ministers who have traditional social views and not supportive of any improvement. • Professional dominance by the medical profession. • No post qualification education
Economic	• No Fiscal support for training • Poor pay for ANMs • Poor health care infrastructure
Social	• Geography of the population impacts on service provision • Health facilities too far away • Poor roads and transport • Low status of women who have no power to make decisions • Woman's role within the family • ANM are required to fulfil family requirements and may not have the power to make decisions regarding professional needs • Poverty • Need mothers and ANMs to work • Desire of health service workers for further education
Technological	• Poor educational standards in training schools • Lack of teaching resources including books and clinical models • No post qualifying education • No access to computers and internet • Lack of competence based education • Lack of clinical experience
Legal	• Limitations on the role of ANMs • No professional standards • Dai legally a midwife
Environmental	• Medical dominance • Lack of clinical resources • ANM working alone • Poor clinical skills acquisition • Teachers not trained to high standard and may have no clinical experience • Total number of ANM equals approximately 90,000

Further consideration and analysis was undertaken of the potential issues for an educational programme using a SWOT analysis ((Schober and Affara, 2006. Figure 7). The results of the situational analysis demonstrated that an educational strategy needed to be considered. In discussion with my project partner, taking into consideration all the influencing factors, there was a need for an educational programme without the ANM leaving their family and clinical practice area, which would not require governmental control or fiscal provision. Exploring the options meant that traditional education with residential accommodation was too expensive and would require ANMs to leave their family and clinical area. Residential education although normal within India would also

cause disruption to family status quo. A self-directed distance learning programme offered a flexible approach, which allowed the participants to use their time effectively and maintain their working and family commitments. No governmental fiscal provision would be initially required but funding for the development and implementation would be needed and was dependant on successful grant applications.

This option of a self- directed educational programme was reviewed by the retired Director of Public Health and members of the Shyham Institute. They agreed that this was the best option but one which had some risks, as this type of approach had not been used with this level of health care worker. Risk limitation was required to ensure a positive outcome as political and professional agendas required to be successfully negotiated. Shyam Institute would be responsible for this aspect by using personal contacts and knowledge of the systems within the State.

Figure 7 SWOT analysis of possible educational strategy:



With this information an inductive hypothesis was formulated on the premise that an educational programme for the ANMs would improve their knowledge base. If applied this would also impact on their clinical and decision making skills. The hypothesis is to test the assumption that education is a positive method of improving knowledge and performance.

The hypothesis is congruent with educational theory (Jarvis 2010) and social change (Lewin 1946, Friere 1972, Habermas, 1981).

"Engagement with self-directed educational materials will improve the basic knowledge of normal pregnancy and childbirth of ANMs".

Funding

Funding was sought from 2006 to 2008 and culminated in six applications to various UK and international funding bodies. The final applications were to two UK charities, separating the costs of developing the multimedia resource and the educational materials testing, resulting in successful applications.

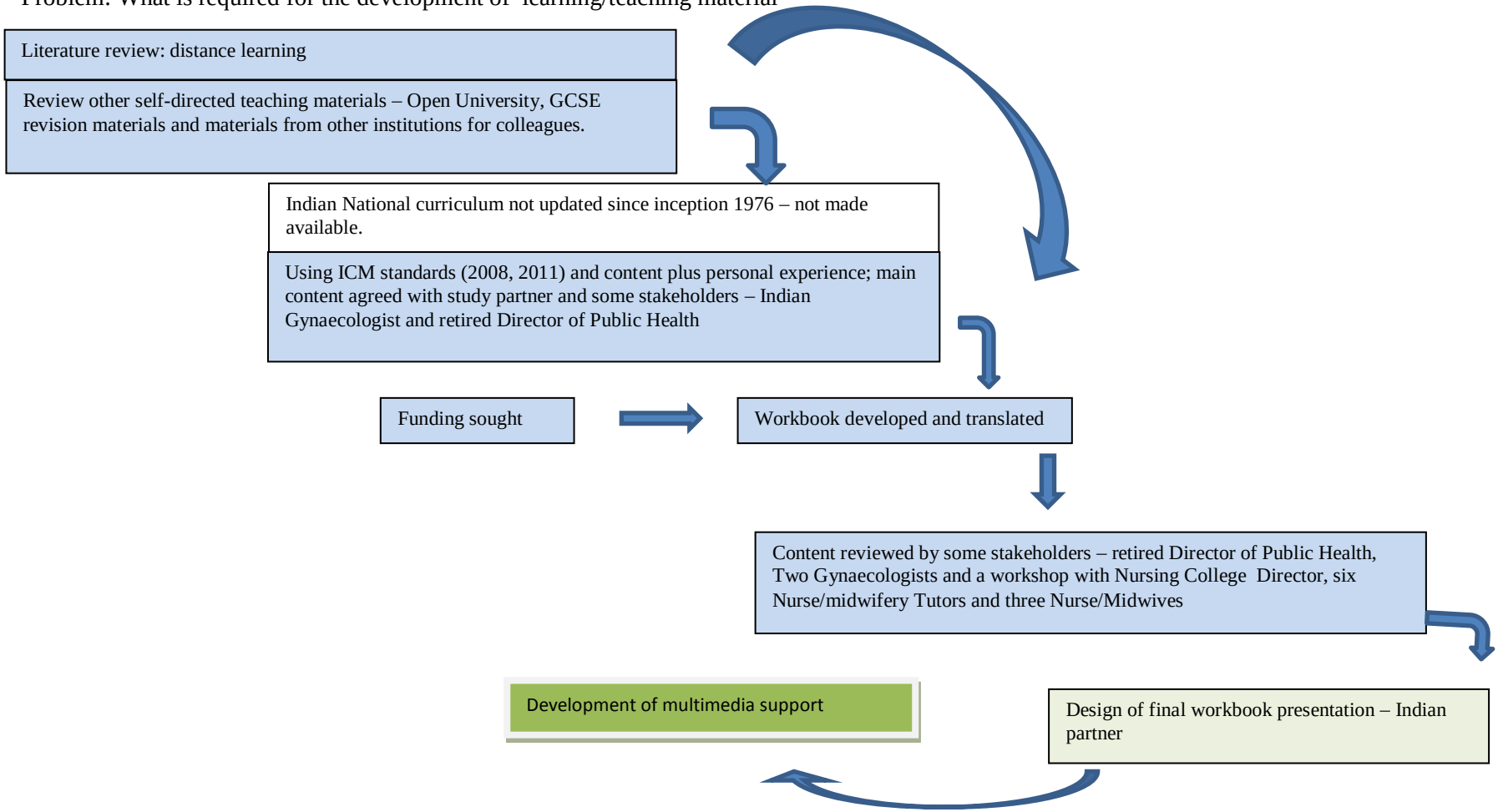
The development of the teaching and learning materials is presented in chapter four demonstrating the methods used and the exploration of the literature.

3.3 Summary:

The reconnaissance (Elliot 2001) resulted in an extensive analysis of the education and working environment of the ANMs was completed and revealed that as Auxiliary Nurse/Midwives they have not been educated to meet their clinical practice requirements. The curriculum was outdated and required some review; however this would not be to the advantage of those already practising. Due to the constraints identified it would not be possible to use traditional teaching methods to offer post registration education. A decision to provide a teaching and learning programme which was self- directed was made. Therefore the next step was to consider the presentation and content of the educational material. The diagram below set out the chain of actions required to continue with this study and is explored further in chapter 4.

Action Step 1: Development in Teaching and Learning material

Problem: What is required for the development of learning/teaching material



Chapter 4: Development of teaching and learning material

4.0 Introduction:

Following the situational analysis which identified the poor skills and knowledge of the ANM, a decision to improve their knowledge base was considered one method of improving the care offered to pregnant women. Due to the lack of fiscal support, careful consideration of the type of educational material was needed. Employing a flexible method of learning and teaching needed to be considered. Much of this work was undertaken over a number of visits to Madhya Pradesh and discussions with Government officials, teachers of ANMs and the ANMs themselves who offered an insight into the potential areas for development and testing. It became apparent that there were State and local factors which required consideration.

State Level:

- Geography
- Numbers of ANM
- Finance
- Access to education facility
- Lack of resources in Hindi
- Lack of expertise in midwifery

Local level:

- ANMs are women and will need permission to go for training
- Local service provision disruption due to staff on training
- Finance
- Family disruption increasing stress
- Lack of trainers in midwifery with the required knowledge.
- Lack of resources

Reviewing these factors, it became clear that one method of educational delivery could be effectively employed: distance learning: a method not used in nursing and midwifery professional development within India nor in the State of Madhya Pradesh, but one with a number of advantages. It would help to alleviate the issues associated with the ANM leaving their work place and their families for a period of time, to reduce the costs. This action step explores the issues and processes of developing a learning programme which is to be used at a distance from the developer and teacher. This educational programme is

required to meet the needs of the learners, so reviewing the literature regarding distance learning offers an insight into the possible issues. It provides some positive methods for developing this type of educational material and an understanding of student learning issues which would need to be addressed from the outset.

Over the past two decades, distance learning materials have fundamentally changed from the original correspondence courses to web based programmes, which incorporate all educational levels and include academic as well as vocational education (Quinn and Hughes 2007). For this project a distance learning method underpins the educational materials offered and due to the limited access to informational technology will be text based in hard copy.

4.2 Background to distance education development:

The terminology used to describe educational materials; open, distance and flexible is often interchangeable and has caused some confusion when considering a definition (Quinn and Hughes 2007). Distance learning is related to distance between the student and the teacher, thus requiring the transfer of the materials to the student location.

Keegan (1996) and Bernard et al (2004) suggest that distance learning has a number of components which distinguish learning at a distance from traditional face to face classroom approaches. These include a geographical distance between educators and students and this may extend to a distance between students as well. Planning, preparation and provision for student support with two way communication and the use of technical media was considered important.

However the use of the adjective “open” is also synonymous with distance education, possibly due to the advertising and introduction of Open universities appealing to the public and applying the notion of access to everyone (Holmberg 1991). “Open” has now taken on a different definition as some journals offer people interested in their contents access free of charge, as they have the philosophy of knowledge transfer being accessible to all. Rogers (2001) defines open learning as a system of education where the learners are not constrained by the environment, so they can work at their own pace using the resources provided but with minimal contact with educators. Both these terms could be considered two modes of educational delivery which is flexible. There are some similarities in these modes of delivery but very distinct differences. Hull (1998) outlines the underpinning philosophy of open learning as the centrality of the student which does not focus on the content but the process of the learning, which requires student ownership and a reflective process to integrate theory to practice.

Since its inception, distance learning (DL) has received a great deal of interest and has become a valid alternative in educational delivery (Rumble 2004). Global application has occurred including "Open Universities" in the UK and within developing countries such as India and China (Wei-yuan Zhang and Namin Shin 2002, Aslam 2000). Distance learning has in recent years become an industry with many global institutions offering a vast number of self-directed courses at all academic and vocational levels (Pawar 2000, Asian Development Bank 1999, Mullick 1987). Whilst DL has focussed on traditional higher educational courses leading to basic degree or above (Wei-yuan Zhang and Namin Shin 2002), it has not yet been used for continuous education or updating of trained health care workers in developing countries, where there is little access to information technology (Penny and Murray 2000). Successful application of this method is evident within the UK to support the Enrolled Nurse Conversion course to upgrade these first level nurses to the general nursing register (Dearnley and Matthew 2000). Post qualifying education in the UK by the Open University and the USA (Southernwood 2008, Cook et al 2004, Damazo et al 2002) suggests that there is the potential to apply distance learning to other healthcare workers in different contexts.

The literature review for this study has three dimensions as the complexity of this project covers several aspects of education and professional development. The focus of this search has been to identify literature on the use of distance learning within a professional development perspective. Literature appertaining to distance and open learning has been accessed to aid the development of a strategy for the improved understanding of the researcher and the development of the distance learning environment. Some of the available literature is dated but relevant to the development and use of hard copy materials as the new methods are computer based and not relevant to this study. Literature is also reviewed in chapter 6 and 9 for the development of an evaluation strategy and reviewing the process of partnership.

Published literature within the field of distance learning is readily available, but within the professional development of health workers it remains limited and of a discursive nature. Distance education within nursing and midwifery had been developed to reach students in rural areas in Ireland, USA and Australia (Carr 1999, Kennedy 2002, Morrow et al2007) and in Eritrea by a university situated in the USA (Johnson et al 2007). Within developed countries this has taken the form of computer based studies and the use of the internet; however the experiences of the Eritrea programme identified a similar situation to that of India. Unlike developed countries where computers are in every household, this is not the case in Eritrea or India and if there are computers within the household, the principle users

are the male members and children in education. In Eritrea a special room was populated with all the equipment required for their educational experiences, which was not possible in the State of Madhya Pradesh due to the fiscal and geographical limitations. Johnson et al (2007) also highlighted the need to understand the education and health systems of the country to enhance a successful outcome. Hence, the importance of the situational analysis to illuminate the academic and professional knowledge levels of the ANMs.

4.3 Distance learning materials development:

A plethora of literature on the use of distance learning material is available. A preliminary search identified vast numbers of published works both national and international. Within the developed world there are many institutions offering "on-line" courses. Bridging the gap between the continents is something that has appealed to many, with some new cyber institutions evolving to provide courses in health related topics to less developed countries (www.Peoples-Uni.org 2009).

Models for the designing of distance learning materials are available; such as the Analysis Design Development Implementation Evaluation (ADDIE) model, which follows a similar format to Rowntree (1994) and contains ten core elements (Dick, et al2001). This model has been considered to be rigid (Akbulut 2007) but does offer all the elements for designing educational materials. Its application appears to be linked with computer based educational programmes, although its application to the designing of any teaching materials is evident. Rowntree's model is less specific and therefore less rigid. Both offer similar guidance; Rowntree's model is used for the designing phase of the distance learning materials. However, the model design suggests that the ADDIE design model is cyclical and offers multiple evaluation points throughout the development of the educational programme and therefore greater guidance.

Rowntree's model (1994) outlines the development of distance learning materials and includes: understanding the potential students, realistic application of the resources available, developing the distance learning package and finally implementation and evaluation.

The initial phase of this study following the situational analysis is the development of the teaching/learning materials to be used. The literature related to the development of distance learning programmes has guided this development.

Authors who offer some understanding of the process have been involved in the development of pre-registration distance learning modules in developed countries with good internet access (Morrow, et al2007, Laidlow et al 2003, Hesketh et al 200,1 Carr

1999). However there is much to be learnt from the experience of others. Laidlow et al (2003) and Hesketh et al (2001) offer some insights into the development of distance learning modules for the medical profession. They identify that there are several areas for consideration. Laidlaw et al offers an insight into the learning and teaching aspects whilst Hesketh et al explores the development aspects of the materials. Hesketh et al developed seven key areas for consideration following the evaluation of the process involved in developing a distance learning programme for dentists. Using an educational "needs" assessment for the programme and assessing the attitude of the students to change was found to be essential. The everyday lives of the potential students need to be considered when developing distance learning programmes and this is supported by Rowntree's model on knowing your potential students. Course content needs to be clearly defined and evidence based with a focus on the students' needs. Like Laidlaw et al, Hesketh et al identified that the students require engagement with the learning materials ensuring that as many learning styles are accommodated as possible. They also focussed on the learning outcomes, which are clinically based. Offering practical advice within the taught component was identified as a method of changing practice. They suggested a multi-professional team approach to designing and facilitating the programme, which offers a breadth of experience to the process.

Laidlaw et al appreciated that each student has a different learning style and therefore the materials are required to incorporate different styles to maintain the student's focus. Their course was developed with experts to ensure that it meets the highest standard and offers the students an engaging focus using content enhancements. These were used to engage the students with the content and enable them to link theory to practice. Burnand and Lundgren (1994) suggested that there are two types of structure dependant on the requirements for the taught programme and the students accessing it. They suggest that highly structured materials would foster dependent students, whilst low structure encourages the students to take some responsibility for their own learning, therefore fostering independence. This demonstrates that distance learning could be described as a continuum as the underpinning philosophy is related to the delivery and pedagogy used, as demonstrated by the interchangeable use of terms such as flexible, open and distance. This differentiation of design is supported by Carnwell (1998) and Gibb (1984) and is dependent on the external factors, which influence the design and the perceived outcomes. All these authors are preparing courses for a western audience, who have gained a number of study skills throughout their formal and professional education. This may not be the case for the ANMs, who have had little formal education, which was delivered in a very

structured and traditional didactic manner. Therefore this aspect requires greater consideration when preparing educational material they will be using independently. A more structured approach which guides the study may be the best option as this helps them to achieve a positive outcome and is aligned with their traditional didactic educational approach.

Distance learning is underpinned by the concept or pedagogy of Adult learning as opposed to the pedagogy of child learning (Chapman 2000, Ayer and Smith 1998, Gibb 1984), suggesting that adults have a greater grasp of what they need from the process. This therefore suggests a continuum from pedagogy to andragogy, the principles of the first being the art of transmitting the content of what is being taught, whilst the other is the art of helping adults to learn (Pew 2007). Central to any pedagogical approach is the philosophy which underpins it. Distance learning has developed through the decades from the use of fixed content delivery via hard copy and media support to the complex multimedia technologies available today. The philosophical models used within distance learning have also changed to incorporate a much more fluid and open approach, to build networks, contacts and resources (Anderson and Dron 2011, Downes 2008). The philosophical underpinning used within this study is a cognitive-behavioural framework, which is based upon Gagne's (1965) linear and structured approach. The users of these teaching/ learning materials require structured material that guides their understanding, whilst building on their previous educational experiences. Using a strategy of linking theory to practice to enable them to apply their new knowledge to their clinical environment also needed some consideration.

The concept of learning can therefore mean different things to different people (Van Rossum and Taylor 1987, Van Rossum, et al1985) depending on their motivation and experience. Adult students use their learning to meet their personal needs from memorising facts to extending their knowledge. This supports the notion of professional development, which may impact on their personal development not just their professional, depending on that person's concept of learning.

Potentially the benefits of a self- directed method of learning are convenience and flexibility (Carnwell 2000, Moore and Kearlsy 1996, Rumble 1989), allowing students to manage home, family and work commitments. Morrow, et al(2007) discuss the use of a blended method of course delivery for student midwives. Whilst this is not a method available to the students who are participating in this study, it does offer some of the advantages of distance learning. Students found that they appreciated not having to travel to classroom led education. They had control over when they studied and fitted it around

with their other commitments (Carnwell 2000). This is supported by Gloveret al (2001) who delivered a pre-qualifying midwifery programme at a distance. This aspect requires further consideration within the proposed educational material, so that the students feel empowered to take control when they study.

Possible negativities of this type of education are related to the learner, as they have to be motivated and self-disciplined (Birk 1997) and they can feel isolated which de-motivates them (McPhee and Nohr 2000). Pew (2007) points out that motivation is one of the key components to successful outcomes and that adult education assumes that the adult is responsible for their own motivation, which underpins distance learning.

Facilitation from a distance is an area of concern and has been highlighted by many (Hewitt-Taylor 2003, Kennedy 2002, Fox et al 2001). Kennedy (2002) calculated the time spent on student/tutor contact during traditional and distance learning indicating that 29% more time was need for distant learning students than for those accessing traditional classroom teaching. This aspect is further endorsed by both Hewitt-Taylor (2003) and Fox et al (2001), if the students are to have a high quality experience.

4.4 Teaching and learning materials:

As the educational material was for a different culture and health care setting, it was important to become acquainted with both. Several visits to the Northern and Central regions of India (2004) identified that although the main aspects of health care were similar, they were also very different from state to state as outlined in chapter 3. This was supported by the anthropological studies already discussed in chapter one. Planned action was to improve the knowledge in normal midwifery through an educational method designed for the registered ANMs within the State. The decision to use normal midwifery as the focus was to build on the ANM's prior education with the express desire to update and expand that knowledge. It was apparent throughout the discussions when undertaking the situational analysis, that the basic knowledge appertaining to normal pregnancy and childbirth processes was limited.

Although post qualifying education is a professional requirement within developed countries such as the UK and has been for many years, this is not the case in India where it is new concept. The practicality of delivering traditional methods of teaching to such a vast geographically dispersed population posed another challenge. The situational analysis in 2004, proffered an insight into the challenges, which were not only within the current education and training programmes, but within the health services. Discussions with tutors and students identified a lack of resources available within their own national language

(Hindi). Students struggled to gain confidence in their midwifery skills as they were not permitted by the medical staff to practice within the clinical environment. It was also important that the educational material was not visualised as a re-training programme, as the trained ANM may find this unacceptable. The use of study material would enhance their original knowledge base and training, whilst motivating their interest in the normal process of childbirth.

A print based workbook was identified as a possible means of providing the required instruction, supported by a multimedia resource of clinical skills. Any development of teaching materials relating to maternal health would be required to take into consideration the ICM competencies (Fullerton et al 2004) for midwives (skilled birth attendant). This would support the Indian government's commitment to improve maternal health outcomes and services. As the education of the ANMs was very limited and was not applied to the practice setting, it was important to take these issues into consideration when designing the final documentation. Development of the material can be undertaken by non- Indian nationals and translated into the local language to meet the local needs.

4.5 Development of midwifery educational material:

It was identified that the trained ANMs knowledge base of the anatomy and physiology of normal childbirth was limited as contemporary resources were not available. Whilst not wanting to reproduce a whole textbook, which was based on the original ANM training programme, there was a need to refresh their knowledge. This offered the opportunity to introduce new ways of working and evidence based practice, expanding their knowledge and meeting the requirements of the ICM (2010) midwifery competencies.

Designing any teaching material requires some exploration of successful materials available within the self-directed sphere of texts. An initial assessment of other learning materials available, which were text based, as the main source of information giving was undertaken. Books for teaching anatomy and physiology were accessed and aspects of their presentation were considered. These clearly used simple terms and language within a colour coded system for activities within the text. Supporting visual aids were provided to support the text, which offered students the ability to apply the theory to the context of study.

Materials from the Open University (UK) were also sampled as these support students studying at all higher educational levels very successfully. The diverse multi-media approach offered students, with different learning experiences, the opportunity to select what they needed to achieve the learning outcome. With the results of this exploration and

taking into consideration the outcome of the situational analysis, a hard copy workbook with supporting multimedia resource (DVD) in Hindi, was considered the most efficient method to deliver the learning materials. The ANMs could read the material in their own language and play the DVD as often as they required if they have access to DVD players.

4.6 Workbook development:

Drawing on my personal professional experience of using workbooks within the educational programmes in nursing and midwifery, a print based workbook was developed to aid the students to achieve the learning outcomes for midwifery, which were based on the ICM (2010) competencies. My personal experience gave me an understanding that the workbook not only needed to develop the students' knowledge but to encourage further personal interest to explore aspects related to the topic. The content of the workbook was discussed with my partner and his contacts within the medical profession. This was an interesting meeting as they appeared to be limiting the content so it was going to be a challenge to introduce some new ways of working or to provoke the participants to reflect on the care they may have been offering.

The focus on the development of a print based workbook was made following a discussion with my collaborating Indian partner, who identified that the majority of women do not have access to the use of a computer. Therefore this limited the potential of using internet facilities, which could enhance the content of the workbook. These would also have helped with the graphic interpretation of some of the aspects of anatomy and physiology by using social networks such as U-Tube, where a number of animated films can be visualised.

Following discussions during field work in 2004 with ANMs and their educators it was apparent that there was an inability to apply theory to practice and skills rehearsal within the clinical area. Therefore helping them to apply theory to practice using normal pregnancy and childbirth as the foci, builds on their knowledge base and extends its application further, using examples from my experience in midwifery education and training in the UK, to meet the requirements of the ICM (2010) for normal childbirth practices and introducing an evidenced based approach. This also supports the concept of knowing the normal processes of childbirth before developing an understanding of any deviation from that process.

Developing learning outcomes to guide the participants, so that they are aware of their aim in undertaking the study was the next step. Information acquired through the State workshop on strengthening midwifery (curriculum group) guided the learning outcome

development. Learning outcomes need to be achievable and understandable by the participants:

- Explain the normal anatomy and physiology of the female reproductive system
- Explain the normal changes in pregnancy
- Describe normal labour and it's mechanism
- Explain the use of the partogram
- Describe infection control methods
- Explain normal post natal physiological changes
- Describe thermoregulation in the new born

With these learning outcomes the focus of the workbook covered the main anatomy and physiology of normal pregnancy and childbirth with midwifery skills, care and management. Underpinning the midwifery theory was the evidence from modern midwifery related texts on anatomy and physiology, aiming not only to refresh the NMs knowledge but to extend it, so they can understand the physical interactions of the childbirth process. The use of pictures to support the text was required to enable the students to develop a visual understanding of the anatomy and physiology but this proved to a challenge. Copyright issues often overshadowed progress, some permissions were given free of charge but other pictures were removed as copyright agreement was not given. Diagrams used within the text to illustrate the anatomy and skills were investigated for copyright, which was sought if required. Several diagrams were discarded due to the negative response by publishers to requests for inclusion in the workbook. Several publishers required remuneration for inclusion, which had not been included in the overall budget estimation, and therefore these diagrams were also not included.

Taking some ideas from other texts available, the workbook was divided into learning zones; each learning zone offered a different practice area, ensuring the associated topics were included. Four learning zones covered antenatal, labour, postnatal and neonatal practice, with each zone being further divided to cover vital aspects of anatomy, physiology, care and management. New ways of working including the WHO antenatal care package, different birthing positions, how to use the Partogram, record keeping and communication were introduced which also aimed at improving the participants' professional understanding. As this workbook was aimed at trained ANMs, it was important that the more well-known aspects were not included, such as estimating the date of delivery, so that the ANMs initial education was acknowledged and respected. However this was included at a later date following the Critical workshop with ANM teachers who reviewed the content to ensure it was relevant to the clinical practice of the ANM.

Development of any midwifery teaching and learning material require to be embedded within the ICM (2010) competencies with the underpinning principles identified within the key concepts below.

KEY MIDWIFERY CONCEPTS (ICM 2010):

There are a number of key midwifery concepts that define the unique role of midwives in promoting the health of women and childbearing families.

These include:

- partnership with women to promote self-care and the health of mothers, infants, and families;
- respect for human dignity and for women as persons with full human rights; advocacy for women so that their voices are heard;
- cultural sensitivity, including working with women and health care providers to overcome normal life events.

These principles are fundamental to enhancing care to pregnant women and are included within the workbook. Activities were designed to focus on practice and include these principles, encouraging the ANMs to review their practice and how they could improve the care offered.

Rowntree's (1994) suggestion of having a student centred approach to the design was very important as is an understanding of previous experiences and teaching strategies. An educational strategy which supports the notion that education changes the behaviour patterns of people (Tyler 1949, Quinn and Hughes 2007) required consideration, as the majority of ANMs were of a basic general educational standard developed by traditional teaching techniques of chalk and talk. Possibly due to this type of teaching method and the cultural position of these women, they had not learnt to explore further any topics of interest. Their life and professional experience may be extensive due to years of clinical practice but, their understanding of theory and its application to practice could be limited. Whilst the anatomical accuracy is important within the material, the use of clear English without complexity meant it could be easily translated into Hindi, which would therefore greatly enhance their learning experience and understanding. The use of language within the text was considered carefully as this aspect of the workbook's development was central to its successful use. Modern clinical textbooks used in this development needed to be applied in a manner that would enable understanding and aid learning.

4.7 Teaching and learning strategy

The teaching and learning strategy used has an adult learning focus. The ANMs have not had more than a basic general education and a didactic approach in their education and training. The content would be structured but with guidance to help their development to becoming less dependent as learners. The concept of the learning adult has for many years been the focus of higher education and has been based on a number of principles, which have separated it from the education of children. These are based on a set of assumptions, which required careful consideration within the Indian context.

Jarvis (1985) makes a comparison between the two well-known underpinning strategies in teaching and learning taken from Knowles (1983) which provides a framework or model for adult learning.

Figure 8 Comparison of educational Strategies

	Pedagogy	**Andragogy**
The learner	*Dependent*. Teacher directs what, when and how a subject is learned and tests that it has been learned	*Moves towards independence*. *Self-directing*. Teacher encourages and nurtures this movement
The learner's experience	*Of little worth*. Hence teaching methods are didactic	*A rich resource for learning*. Hence teaching methods include discussion, problem-solving etc.
Readiness to learn	*People learn what society expects them to,* so that the curriculum is standardized.	*People learn what they need to know,* so that learning programmes are organised around life application.
Orientation to learning	*Acquisition of subject matter*. Curriculum organized by subjects.	*Learning experiences should be based around experiences,* since people are performance centred in their learning

In professional arenas such as health care there are professional requirements to maintain and update your professional knowledge (NMC 2002). In India there appears to be no expectation of this lifelong learning approach by the Indian Nursing Council or the profession.

Indian teaching methods within general and professional education uses a didactic dependant pedagogy, which expects the students to accept what is presented as the required

knowledge to meet the required standard. It was possible to apply some aspects of both pedagogy and andragogy to the development of the workbook. From their previous experience these students learnt what they were told was important rather than seeking their own understanding. Now they would be required to extend their knowledge, which was a developmental challenge. There appeared to be a need for a directed focus in what was important to learn for professional practice and to meet the ICM guidelines. However, by encouraging the students to explore professional issues for themselves within the material, they had the opportunity to apply the theory to practice. Using questions related to practice in directed activities was designed to encourage reflection on practice, to develop an enquiring approach. This reduced the reliance on a didactic approach and encouraged a move towards a more self- directed method of learning. Taking these last two aspects of professional development into consideration, the workbook material is embedded in practice and encourages these processes of applying theory to practice using reflective type questions. Further guidance was provided by using a system of practice points for consideration related to practice. However the self-directed nature of the study material may cause some difficulties in time management and completion of the work may not be a priority for the participants when balancing their lives both at home and work.

The content of the workbook was the next consideration with the focus on the learning outcomes. Understanding the physiological processes of pregnancy enables midwives to understand the impact of pregnancy on maternal health and vice versa. Using this knowledge develops their practice in a manner that respects these changes and identifies when they are not normal. Whilst the theory related to some aspects of pregnancy and childbirth had been taught previously, its application by the ANMs to practice appears to be limited. Some compromise was required when considering the content of the workbook as the amount of student activity required to achieve a positive outcome could have an effect on student motivation. It is important that the students are not overwhelmed by the task in hand, as this is a new method of offering educational material to this group. There are some very important health issues, such as anaemia, which are related to maternal and fetal wellbeing and are common within the Indian female population and inclusion of them was necessary.

The presentation of these topics needed to be evidence based to ensure that they were accurate as inaccurate information would be dangerous if applied without critical review or used inappropriately. The presentation within the workbook was carefully considered and insights gained from available texts within the UK identified that colour and clear instructions were vital to successful use. Symbols to direct the participants to either reading

or undertaking some related work were originally used. Some aspects of the original workbook were removed without discussion by the Indian director of the NGO as they were not considered relevant. These decisions were not challenged, as cultural aspects of what is considered normal and acceptable needed to be taken into account and my Indian partner and his colleagues were the experts in this aspect. The final copy was developed into a work book (appendix 1) which is presented in colour.

The ADDIE model (Dick et al2001) proposes that there is a formative evaluation of the material which offers an opportunity to review the development and inform any changes which may be necessary. Rowntree (1991) supports this constant review of the materials. Therefore a workshop in Bhopal, India was organised by my Indian partner to assess the contents, its relevance and the user friendliness of the workbook, identifying areas for expansion or inclusion/exclusion. The group comprised mainly of ANM tutors from three schools totalling nine in number and three trained ANMs. Co-chair of this workshop with me was the State Director of the Indian Nursing Council in Madhya Pradesh, who gave some credence to the process. This enabled translation of the discussion if necessary as her English was excellent, although it was made clear by her that the use of English was an expectation of the day, as all group members had been taught in school. The tutors were divided into four groups with each group reviewing a learning zone.

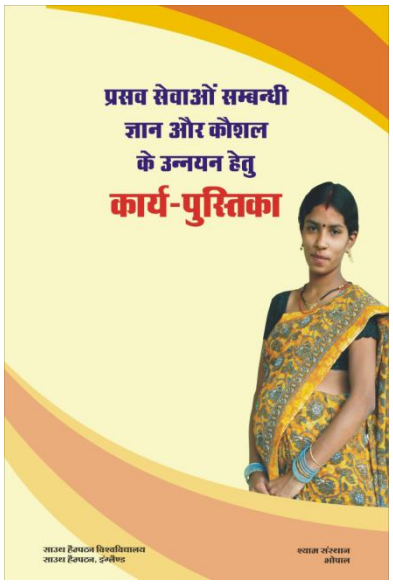
4.7 Quality assurance / formative evaluation of the programme content[2]:

[2] All Photographs are used with kind permission of those present

One ANM was attached to each group to give their perspective of the content and usability of the workbook. It did appear that the tutors in the workshop also had their own agenda, as they were encouraging inclusion of all aspects of midwifery from the pre-qualifying course. Maybe this was because they were unfamiliar with the concept of post qualifying education and its aims or because they could use this resource for their own teaching as it had been translated into Hindi. The majority of feedback was positive with the ANMs present being very encouraging. All the hard copies of the text disappeared at the end of the session although there was a request for their return.

Two midwifery teachers from two institutions in the UK reviewed the content and sequencing of the material within the workbook for accuracy and currency. One of these teachers had developed a number of distance learning materials and the other had years of experience in midwifery education. Minor changes were suggested and incorporated into the final draft. Following these amendments to the workbook, it was reviewed by the Director of Shyam Institution, an Obstetrician, who was also a member of the NGO and the printer, resulting in finalising the presentation changes and the application of colour and style. Some minor changes were required to enhance the Indian context such as changing the front cover picture to an Indian woman rather than a western woman.

Figure 9 Front cover of the Workbook for ANM



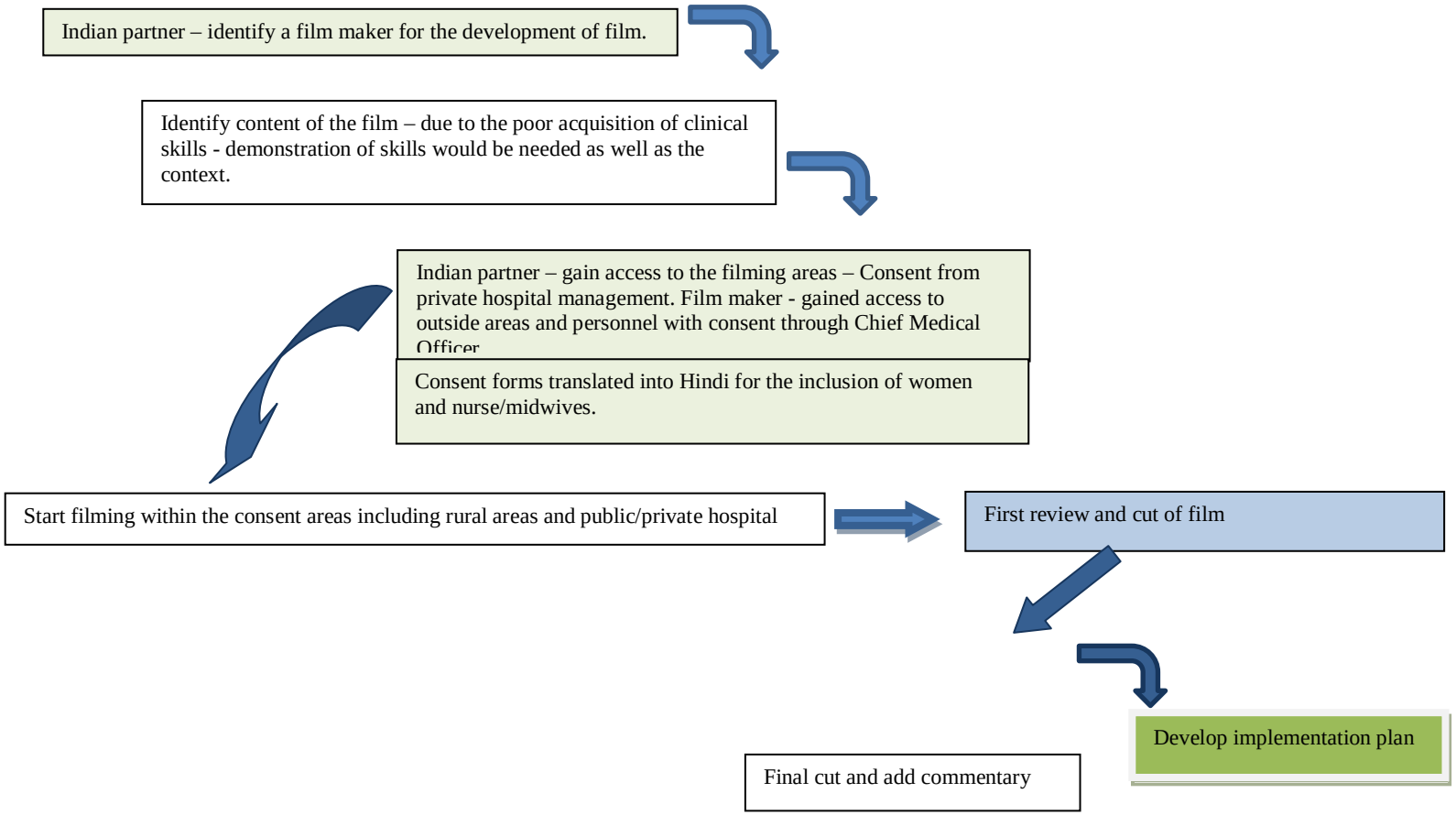
4.8 Translation of workbook text:

The original translation of the workbook was undertaken by a medical university professor in Public Health. However the use of very technical language caused some difficulties within the presentation of the workbook as it was to be used by participants who had a basic general education and was found not to be user friendly. Further translation work was required to ensure accessibility by those using the materials enabling them to understand and apply their new learning to the clinical environment. Reverse translation of the workbook was undertaken in the United Kingdom (UK) to ensure the text was a true copy (Appendix 2). This resulted in a positive feedback on the translation of the final copy.

4.9 Summary:

Action Step 1 has explored the development of the teaching and learning material within an adult learning philosophy. Using the Rowntree and ADDIE models to guide the development and informal evaluation of the content, structure and currency of the materials, the production of a final copy of the workbook was achieved. Action Step 2 continues with the development of the multimedia resource filming and production as outlined in the diagram below. This is to support the print based workbook as part of the teaching and learning strategy highlighted earlier and is explored in detail in Chapter 5.

Action Step 2: Development of a multimedia resource



Chapter 5: Development of multimedia resource.

5.1 Introduction

It was very clear following the literature review into developing and using distance learning materials that to enhance the potential learning through the use of the workbook, a visual aid was required. This is also supported by Knowles (1983), who suggests that adults learn by seeing and doing and relate their learning to what they need to know. The diagram at the end of chapter 4 identifies the actions required to fulfil this action step. When discussing this with Indian civil servants, tutorial staff and ANMs , they very strongly suggested that making a visual aid in an "Indian location" would be more acceptable to those using it. The content of the film was midwifery skills and this posed many challenges as the skills of ANMs were not at a standard that could be easily incorporated into the film.

Selection of the film maker, who had experience of making films within health care settings, was undertaken by my Indian partner. The person offered this role was someone who had produced a number of films for the State government of Madhya Pradesh. He was an experienced film maker with his own crew.

5.2 Ethical consideration for the participants:

Participation in the making of the film required the application of ethical principles eg. non-maliferance. These were considered to be the basic requirements for participants in the development of the skills video and the testing of the learning materials to ensure confidence in the process by the participants. Consent forms for participation in both the filming and using the distance learning package were developed and translated into Hindi but like others aspects of working in a different culture, trouble with their implementation started very early in this part of the development of study materials (Riessman 2005). A flexible approach to their application had to be considered as the Indian context might mean they would not be used in the original format. Riessman highlights that those being asked for consent to participate are not always the participants. Decisions may not be in the realm of women but the senior male family members, who are in powerful positions in the lives of women either personal or professional (Abhay and Revindra 2010). The use of the consent forms was abandoned as those participating were illiterate and didn't understand them therefore would not sign them. They would participate when an oral explanation of what was being requested was given. The identities of those participating in the filming

were obscured at the participants' request, although there were many who did not request to have their identity removed.

5.3 Filming

In preparation for commencing the filming Begleiter (2001) suggests that a storyboard is vital as it set out the action to guide the camera. She points out that this saves time and money. The workbook was used as a storyboard to guide the film. In discussion with the appointed film maker there were a number of points that required some additional thought before filming commenced. As a skills film which aimed to guide the participants in good practice, it was necessary to have "close up" filming of the skills themselves to demonstrate the manual dexterity required. Having discussed the purpose of the film production and the aim of the film with the director, he proceeded by ignoring the requirements and continued filming in his usual manner. Persuading him to be much more focussed did produce some results but caused some tension between us.

To support the workbook, I required the filming to take place within the community, public hospital and private clinic environments as this would help the application of "practice principles" to the clinical areas such as infection prevention. This decision caused some difficulty for my Indian partner as he was concerned about the political implications of using government facilities. An interpersonal struggle commenced between the film maker and my partner which took some time to overcome. Each location used in the film was discussed between the film maker, my Indian partner and myself. It became apparent that the two men had very different personal political views and this again resulted in causing some tension and conflict. Consent to access clinical areas was always sought from Chief Medical Officers by either the Indian partner or the film maker and myself, and was graciously granted.

As the film's target audience were ANMs, it was important to use an ANM for the lead person in the film, as this would highlight the focus on the level of clinical practice. In each location a local ANM was asked to participate in the filming.

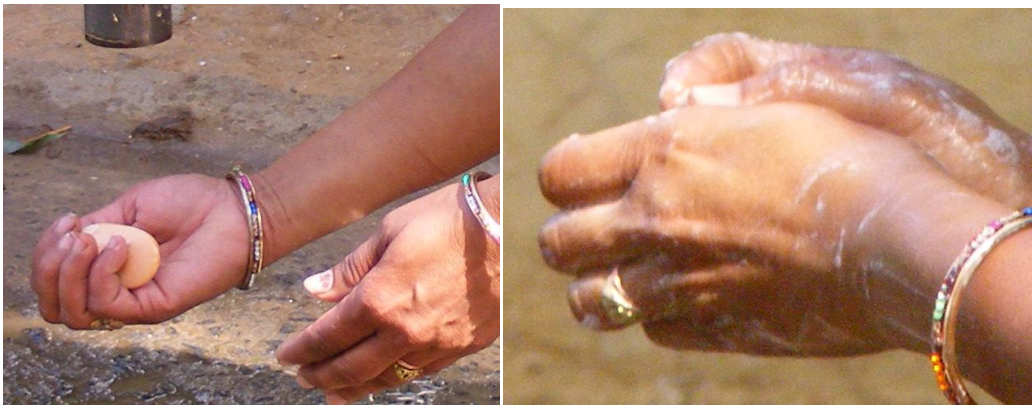
Filming commenced in the community setting of a village outside Hoshangerbad, approximately 80 kilometres to the south of Bhopal. Initially the sub-station where the ANM was situated for her clinical practice in the village was the site of filming. Here women, who had been previously asked to participate and had consented to the filming, gathered together for their antenatal care (figure 8). Each woman brought their antenatal record cards and each received an ante-natal consultation with the ANM. The filming of this activity demonstrated the skills required in antenatal care but it became evident that

palpation and listening to the fetal heart was not a routine activity and would need some additional filming to demonstrate the dextrous skills required. I considered that this activity would be achievable within the UK, which it was.

Hand washing at the pump (figure 9) gave clear instruction to the technique used and this was further demonstrated in the private clinic, to show that it is possible and necessary to ensure cleanliness in both clinical areas. Postnatal care was also filmed within the village, in a house where several women were meeting and the ANM offered advice on feeding and examined a postnatal woman.

Figure 10 Antenatal women coming for the filming of antenatal care

Figure 11 Hand washing at the hand pump



The challenges whilst filming on location were that the film maker was very clear as to what he wanted to achieve, but did not verify his understanding of what was needed for my aims. This training film was required to support the workbook and needed a specific focus

and emphasis which he didn't appear to grasp for example the postnatal examination which was filmed at a distance rather than close up.

As an outsider to the culture it was very difficult to manage these situations without causing difficulties or confusion. Aware of his creative temperament, I used an opportunity to guide the cameraman to have some close up film of the hands undertaking the skills rather than a panoramic view at a distance to include everyone and missing the reason for the film. Filming continued within the village where everyone arrived to watch. A session with the village Accredited Social Health Activist (ASHA) worker and the ANM was set in the village area where health education was discussed with the women, supporting the government's newest initiative.

Further filming, including breastfeeding, was achieved within the district hospital with kind permission of the Chief Medical Officer, where breast feeding support and education was given to women with their first babies. This hospital had been used previously by a group of Japanese clinicians, who had provided teaching on breast feeding and provided some materials for the clinical staff to use. This made access to the clinical area easier and the women were receptive to the filming. However, I was uncertain that consent was actively sought from the women, who were being asked to participate and found myself being diverted by other women, who wished to show off their newborn babies.

Infection control was the subject filmed within a private clinic as the standard was generally greater than within the government establishments, which was not high. Focussed antenatal care (WHO 2002) was also filmed in both environments as this again gives a clear message that midwifery practice is not restricted to particular clinical settings. Each aspect of the film related clearly to each of the four learning zones within the workbook.

There were clinical practice areas where the clinical skills of the ANM were found not to be at the required level following some review of the filming. Firstly the skills related to the normal delivery of a baby, which was eventually filmed at the private clinic but required a great deal of editing as the obstetrician was very used to delivering a baby with the aid of an episiotomy and the use of fundal pressure during the second stage. ANMs have not been taught to use episiotomy for delivery and it is not considered good practice for normal delivery unless fetal distress was present (Fraser and Cooper 2009). Also the attitude of the staff was not as positive toward the client as it could have been.

The use of fundal pressure at delivery was clearly evident and appeared to be common practice but due to the distress it causes to the client is not a practice that is encouraged,

although the evidence base does not identify its benefits or dangers due to the paucity of research. The literature related to the practice of fundal pressure does not identify any disadvantages to its use (Cosner 1996, Simpson and Knox 2001, Api et al 2009, Verheijenet al2009), nor does it draw any conclusions to influence practice.

Another aspect was related to the examination of the newborn baby as the ANM did not appear to understand the rationale for this. This was filmed in the UK with the kind permission of the Head of Midwifery of a teaching hospital in the South of England, the member of staff and the parents of the baby.

Palpation technique was filmed in the same midwifery unit and was to be part of the final cut but the film maker omitted it in the final copy without discussion. This was further pursued by the Director of the NGO but without success.

5.4 Editing

The rough cut of the film was sent to me for suggestions as to the content and where the cuts needed to be made. This was a time consuming process in which each minute was recorded and each aspect needed to be exactly timed to ensure the cut was at the right point. Each part of the film related to the workbook but some aspects of the film required major cutting, such as those were related to practices such as fundal pressure during delivery and the use of an episiotomy. As this editing was undertaken by the film maker in India, there were some difficulties in facilitating the suggested changes and some of the suggestions of the activities to include were lost.

Suggestions relating to the use of animation had been part of the initial discussion with the film director, who was keen to use the internet in gaining some material that would enhance his film. This presented issues with the copyright of those materials but the film director initially ignored the directive not to incorporate any animation from other sources without copyright permission. On viewing the final film it became very apparent that he had not taken my direction on this subject and had used several animations “downloaded” from internet sites. Following some internet discussion via e-mail they were finally removed. This occurred following a refusal from the publishing company on an enquiry from my Indian partner to use their material within the film with copyright agreement but without cost.

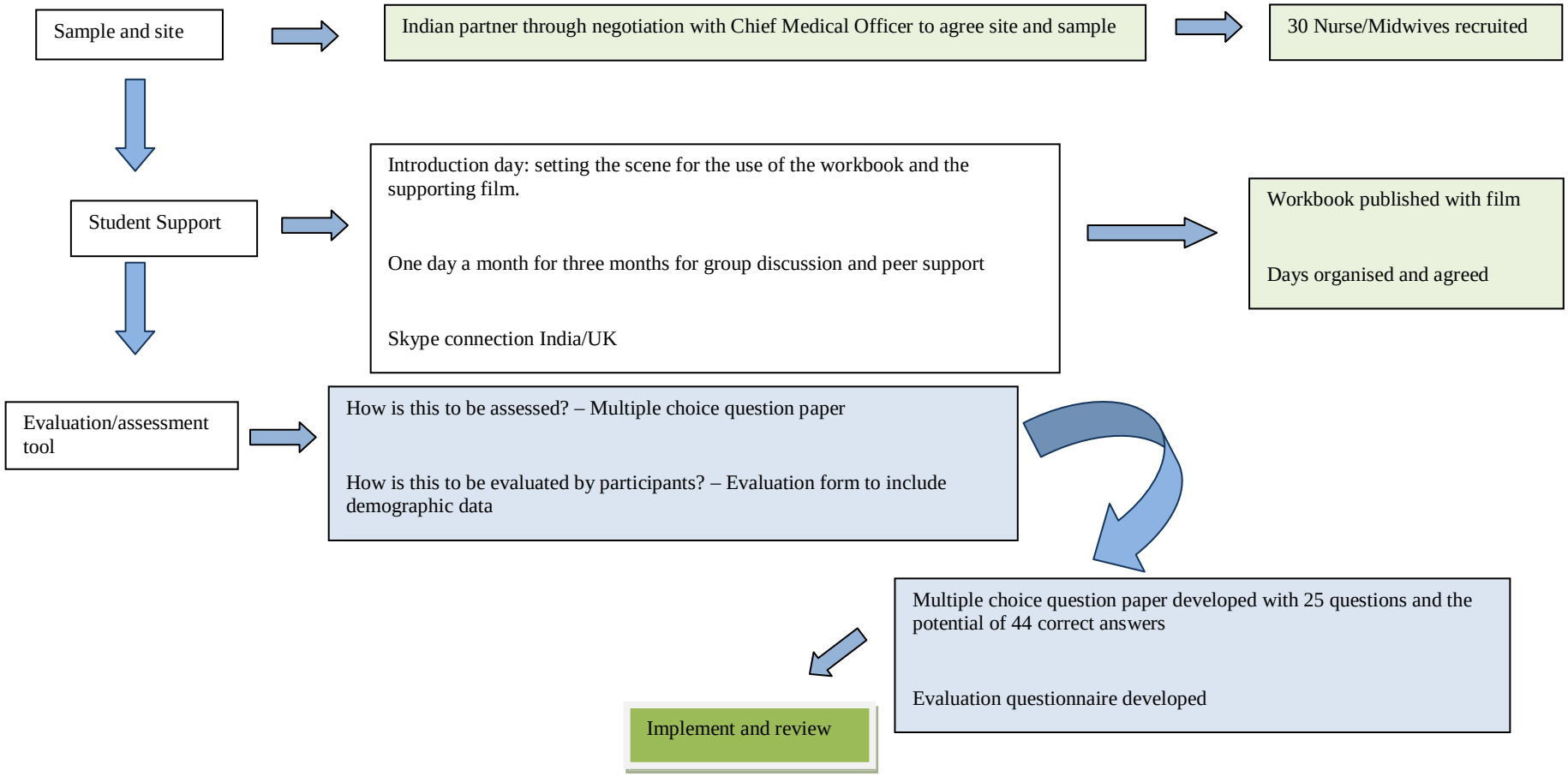
The film was further reviewed by the Director of the Shyham Institute with the Medical Officer (obstetrician) of the private hospital used in the filming and they made suggestions on the final presentation. The final copy of the film (Appendix2) was recorded with the commentary explaining the skills, linking them to the workbook activities. The film was

reviewed in the UK by two independent people, one an Indian student midwife and the other the person, who had “back” translated the workbook content. Both agreed that it reflected the content of the workbook and was instructive.

5.5 Summary:

Action Step 2 outlined the development and filming of the multimedia resource to supplement to the workbook. This was an exacting phase within the study as it required cross-continent, cross-gender and cross-cultural working. This process often caused conflict and misunderstanding, which were resolved through renegotiation between the two Indians, both of whom had personal agendas. The results produced an acceptable product, which would aid the understanding of the ANMs as they worked through the activities within the workbook. Having completed the first phase of the study the next objective was to plan the implementation. This is depicted in Action Step3 diagram and explored further in chapter 6 Step 3 Implementation planning

Implementation planning



Chapter 6 Implementation planning:

6.1 introduction

Action step 3 outlines the planning process for the implementation of the testing of the teaching and learning materials.

Aim: to test the Hypothesis:

"Engagement with self-directed educational materials will improve the basic knowledge of normal pregnancy and childbirth of ANMs".

Rowntree's final stage is the implementation of the educational materials. Planning the how, when and where to trial these educational materials incorporated aspects of the previous reconnaissance and actions including the literature review on developing and using distance learning materials. As with any trial there were many facets which would be required to sequentially unfold to make this a successful study.

6.2 Evaluation of educational material - Literature review

Evaluation of a course of study has two functions; one to inform the development and quality of the content and secondly to give summative feedback to stakeholders and investors in the programme. The evaluation of this teaching/ learning material is to supply both informal and summative evaluation (Levine 2003). Informal data is related to the quality of the materials, which had already been achieved in part, by both the workshop in Bhopal with the ANM teachers and the midwifery teachers in the UK. Evaluation by the participants to assess the effectiveness to improve their knowledge in normal pregnancy and childbirth as well as the acceptability of this method of educational delivery was the next step in the process.

Undertaking this literature review of studies which identified evaluation methods used in distance learning programmes was specifically aimed at international research reports. Initially focussing on developing countries but broadened to include developed countries due to the paucity of literature available. The time criterion for inclusion was 2000 to 2010. The literature search revealed five reports of distance educational evaluations, of which three were in developing countries and two were from developed countries. All five papers included for critiquing were identified by using a strategy of key words (distance learning

and derivatives, midwifery, evaluation, continuous professional development, developing countries) and accessing databases (CINIL, Medline, ERIC and PsyINFO).

The literature reviewed related to professional development and were accessed using the above search terms. This revealed a paucity of available literature; therefore a greater breadth to the search was required to include those which had been undertaken in developed countries. This revealed five published articles from a wide range of professional backgrounds. These consisted of a post qualifying midwifery degree programme in Malaysia (qualitative methods, Chiu 2006), post qualifying nursing modules on mental health management (quantitative and qualitative methods, Chang et al 2002), British post qualifying nursing professional development modules (qualitative methods, Cook et al 2004), general practitioner accredited professional development in the UK (qualitative methods, MacFarlane et al 2003) and vocational development in plastering in Ghana (qualitative methods Donker 2010).

The three qualitative designed studies of MacFarlane et al (2003), Cook et al (2004) and Chiu (2006) used face to face and telephone interviews with some followed up with focus group activities to evaluate new programmes developed to enhance the professional practice within the medical disciplines. Chang et al (2002) used open-ended questions within their quantitative evaluation and therefore a mixed method was used. All were seeking the perceptions of student experiences whilst Cook et al included the lecturers' perceptions within their evaluation and MacFarlane et al included interviews with medical facilitators.

Chiu (2006) used interviews and focus group activities to collect the data from a single case study of Malaysian nurses undertaking post qualifying nursing degree distance learning programme. The purpose of the evaluation of this "off shore" programme by an Australian university was to establish ways that the degree programme influenced the nurses' personal professional growth and development. Twelve nursing graduates of the distance learning programme volunteered to participate in this evaluation. Following ethics approval, semi structured interviews were conducted and analysed using Miles and Huberman's (1994) method. Themes derived from the open and axial coding of the data from the personal interviews were further explored by a focus group activity to gain a greater understanding. Chiu clearly identified that this programme enabled students to develop both personally and professionally. Chiu found that the students gained self-confidence, fulfilment and knowledge which had increased their professional practice by improving communication and professional identity. The professional development was related to the students' understanding and utilisation of research within their clinical

practice. This study appeared to be of a good standard using Guba and Lincoln's (1981) evaluative criteria to guide the development of the study, but it was using graduate nurses, whose educational level is greater than that of the participants in my study. Student expectations were met; however it was difficult to elucidate what information they had been given and the fact that the students were self-selecting may have put some bias on the outcome. This could mean that they were very keen and able students. It would have been interesting to have seen assessment results, which could have given a greater understanding of the student progression in their study skills. Using just qualitative data may not reveal the true picture as these students culturally may not criticise their teacher or the method of delivery.

Cook et al (2004) used five distance learning modules delivered by a UK university, to evaluate both the student and lecturer experiences of distance learning as a mode of delivering post qualifying education. This was part of a larger Action Research study which used this approach to evaluate the programme. The aims of this evaluation are clearly stated and the methodology used was appropriate. Ethical issues were carefully considered although there was no evidence of ethical approval, either internal or external. Their data collection methods included diary entries from lecturer and students' day to day experiences but this was limited to three students and four lecturers. Whilst this appears a small number the amount of data available through this method of data collection would have been vast. Postal questionnaires were sent to all students but the return rate was very low at 34%. This was supported by data collected from four focus group interviews, which were conducted with fifteen students and five focus activities with fifteen lecturers. These activities were with few participants in each group; however the researcher acknowledged that this would limit any discussion.

These qualitative data were analysed using open and coded methods which were then compared to the data sets from the other data sources. This identified that the students valued the opportunity to have freedom to study, when it fitted into their commitments both professional and personal. However there were skills which required further development, such as time management, decision making and independent learning skills. These challenges faced by the students are similar to those found by other authors (Chang et al 2002, Carnwell 2000).

Lecturers identified that they required different skills to develop quality materials offered in a way which engaged students and facilitated their professional development. With such a low response rate over several modules, it is difficult to draw any firm conclusions, other

than identify some of the positive comments. This study did confirm the issues of other studies such as Kennedy (2002).

MacFarlaneet al (2003) evaluated an accredited professional development programme offered to general practitioners in the UK, as part of their required professional development. Their sample group was self-selecting and participants were assigned to either face to face interviews or telephone interviews. There is no apparent rationale presented for the allocation of participants to the two interview groups. Ten face to face semi-structured interviews and eight semi-structured telephone interviews were conducted and recorded with consent. The number of facilitators interviewed was not evident in the report. There is no discussion related to ethics or ethical approval but there is evidence that consent was asked and given. As this was a professional inquiry, ethics approval may not have been required by the Management of the General Practitioners Deanery but discussion as to confidentiality, and data handling aspects, would have been expected. The analysis was undertaken by two of the researchers but no validated method was apparent although it was evident that a coding system devised by the researchers was used. Their evaluation of this pilot study was to achieve an understanding of the students' and facilitators' views of using distance learning as a method of achieving the professional requirements. They did report that the delivery of distance learning met the needs of the students. Some participants did however identify their problems with progress and facilitators' failing to support their colleagues. This was not addressed within the evaluation of the study. The participants did reveal that they were uncertain of the time required for the study and this is one aspect that the researchers could have included. Some participants did not complete their study due to time pressures, which is evident in other programmes. They concluded that distance learning with facilitation was an acceptable method for continuous professional education but issues of time and facilitation would need to be further explored in a larger cohort study. This study appeared to lack rigour and is poorly presented.

Chang et al's (2002) Australian study used an Action Research approach using a needs analysis to identify the students' needs in relation to improving their understanding and knowledge of poor mental health. The results informed the development of a distance learning programme offered to post qualifying nurses in rural and remote geography. No discussion of the ethical implications of this study or ethical approval being sought was demonstrated. The programme of study was well researched and was designed to meet the needs and challenges faced by those working in isolated environments. Chang et al incorporated a number of workshops offered locally within three regions, which enhanced

the participants' learning experiences and their understanding of some of the issues related to working with people with poor mental health. This also served to provide participants with some face to face contact with other participants and lecturers therefore addressing the issue of isolation identified by Carnwell (2000). Each workshop was evaluated and this aided the overall evaluation of the programme. External consultants developed and analysed the evaluation of the modules, reducing bias and increasing rigour in the process.

Their evaluation data collection tool was a questionnaire, using a Liket scale, posted to 303 participants and they received a 67% return rate. Whilst these gave a quantitative output indicating how the students rated the programme, open ended questions gave the opportunity to give supplementary qualitative responses. Qualitative data supported the numerical findings, giving some triangulation to the data and improving the rigour of the study. Chang et al's results identified that distance learning was an acceptable, cost effective method of delivering education to rural and remote health care workers. This study programme met the needs of the participants, as the study materials were developed in partnership with nurses requesting further education in this sphere of practice. The motivation of the students could be considered as high as their professional needs were being met. It was also planned in a manner to reduce the negativities of distance learning highlighted by other authors (McPhee and Nohr 2000, Carnwell 2000 and Pew 2007).

The only quantitative study was that undertaken in Ghana by Donkor (2010). This was a comparative study using two methods of teaching material delivery to facilitate the skills and knowledge acquisition in plastering and bricklaying. One was print based and the other used video instructional materials. The sample size was 34 using the print based instructional material and 35 participants using the video based instructional material. This sample was the complete cohort of students who registered in three institutions from three different zonal divisions in Ghana. The aims of the study are clearly stated and achievable using a comparative study. This study used both observation of the skills and a multiple choice question test paper of twenty questions to measure the students' knowledge and skill thus testing the effectiveness of the delivery method. Donkor demonstrated that the multiple choice paper (MCQ), which had one correct answer to each question, was valid and consistent by applying Cronbach alpha calculation, achieving a score of 0.84. To reduce the possible subjectivity involved in observation of skills, three observers were used and an average composite score was calculated for each participant. This well-constructed study clearly identified that the students responded more favourably to the video materials rather than those that were print based. Using descriptive statistics and parametric t-test provided results which demonstrated the video group were significantly more skilled than

those who used the print based material with a p value of 0.056. However the knowledge base of these two groups were very similar suggesting that the print based materials had a positive effect on the students understanding of the materials required for a good practical outcome. It was noted that the cost of the video based materials was high but this was outweighed by the reduced costs of supplying practical workshops, tools and the damage which could occur to the tools.

All these studies identified that distance learning was a method that could deliver effective education to a geographically dispersed groups of learners but there are several issues which need to be considered. Absence of student support as they are unable to have one to one interaction with a group of similar placed learners increases the isolation felt. These results confirm the findings of previous authors and have been taken into account during the planning of this study. The methods used within these studies were diverse from print based to multimedia including web based material. All the studies identified a positive perception from students and this includes students within several countries, not just those in the developed world. Donker's study is used to inform the assessment methods in this study as he demonstrated that the use of distance learning materials can be assessed using MCQ question paper and supports this method of assessment used within this study.

6.3 Development of assessment tools

The final stage of the planning for this study was to establish a performance test which would be applied before the implementation of the teaching and learning materials and after the ANMs had finished their course work. Donker (2010) had previously demonstrated that an MCQ paper could be used successfully. A question and answer paper was considered to be easier to distribute and not require the ANMs to write in long hand answers which required translation. A multiple choice question paper was therefore chosen to test the knowledge of the ANM. The contents of the workbook were used to guide the development of this assessment. Having one or two questions that participants should already be able to answer, such as the calculation of the expected date of delivery, was considered important so that if participants were not able to answer any question it could demoralise them.

Advantages of Multiple Choice Items

- Can be used to measure a wide variety of learning outcomes.
- Permits wide sampling and broad coverage of a content domain.
- Are reliable and efficient to score.

Disadvantages of Multiple Choice Items

- MC items are difficult to write well.
- MC items cannot measure certain types of skills (e.g., the ability to organize and express ideas in writing; conduct a scientific investigation).

(Kentucky Department of Education 2007)

Twenty five questions with a choice of answers were prepared covering topics from the workbook. The number of questions was limited as this would be a new method of assessment for the participants and any time consuming activity may cause restlessness and possible cheating. Each question had several possible answers and the ANM would be expected to indicate their answers on the answer sheet provided.

6.4 Data collection:

The data collection took three forms; initially the multiple choice question paper was administered prior to the study period, which was the pre-testing of their knowledge, followed by completion of the same paper as a post-test paper at the end of the study period. A final evaluation questionnaire with the demographic information giving an outline of the participant's social and professional information was to be completed by the participants at the end of the study. Students' opinion of the teaching/learning materials presented would also be sought (Levine 2003).

The issue of anonymity for the ANMs participating in the testing of the materials required a system of data protection. Each ANM would be given a number which they used on their personal performance answer sheet, so that each paper could be compared but without knowledge of the participant. All papers and information sheets would be kept securely within the university to meet the required standards of data protection for research.

6.5 Data analysis:

Originally each question was considered a whole entity although each one had several answers. Marks awarded for each question required some review following the pre-test paper, as the results identified that some questions had all the possible answers marked on the answer sheet which indicated that the participant was not sure of the correct answer. It was decided that each correct answer would be given a mark, so that all answers were weighted the same but if it appeared that the participant had marked all answers inappropriately because they did not know the answer, then they were not given a mark as this would bias the results. The total number of correct answers for the paper was forty four. All the answer papers were collated by my Indian partner and sent as a PDF file, making the presentation easy to follow. Further analysis of the data compared the pre and

post test results using Wilcoxon rank signed non-parametric test to identify if the outcome had significantly improved, supporting the hypothesis and not the result of chance.

Analysis of the quantitative data collected from the pre and post intervention personal performance multiple choice papers would be undertaken using descriptive statistics and Statistical Package for Social Sciences v 18 (IBM 2009). Evaluation of the distance learning material designed for ANMs is a questionnaire to identify the acceptability of this mode of academic programme delivery and would include suggested improvements that would enhance student learning. This would inform any further extension to the teaching and learning materials and mode of delivery

6.6 Programme planning

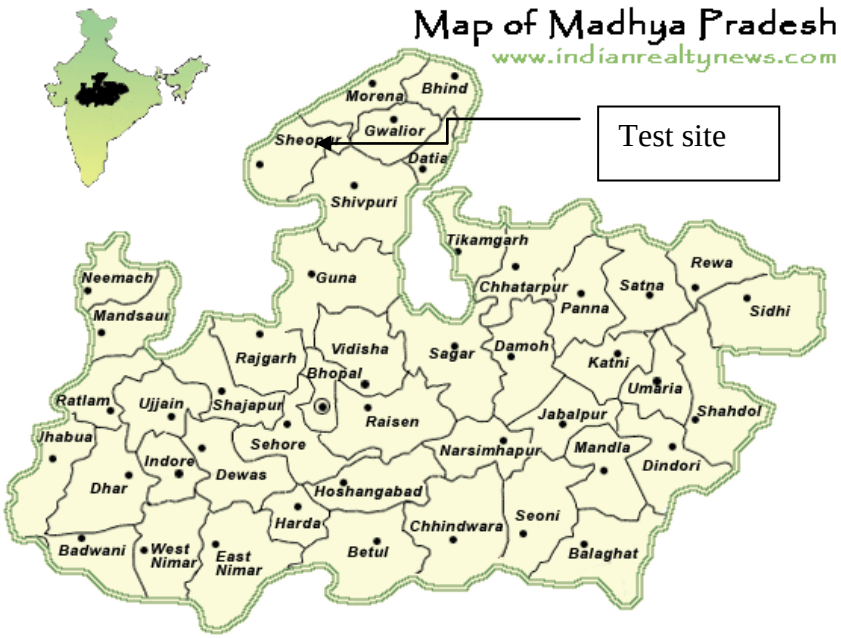
The initial timeframe for the completion of the study material by the participants was twelve weeks as this offered them time to engage with all aspects of the learning package and use their clinical practice to inform their reflection. Participant support was clearly identified within the literature (Hewitt-Taylor 2002) and was seen as fundamental to a successful outcome. Her students identified that they felt isolated, which had a great impact on their motivation and ability to sustain their studies. Our participants had not used this method of studying previously and had a number of competing demands on their time. It was therefore important to consider how their motivation could be sustained. Having set days for the whole group to meet and discuss aspects of the study package with a facilitator was one method which could achieve this. The main challenge being who would facilitate these days as logistically it could not be me as the main investigator because I travelling to India just for one day was impractical. This role was taken by my Indian partner, who knew and understood the materials and the group, although his knowledge of midwifery was very limited but growing. To support this process a “Skype” link was agreed between India and the UK during these days.

6.6.1 Study Site

Accessing the Department of Health and Family Welfare and gaining political consent had been challenging as the government had changed and the foci of their policy had shifted away from the strengthening of midwifery. The site for the testing of the distance learning materials was arranged with the Chief Medical Officer at Shivpuri (figure11). The study site was negotiated by the Director of the NGO. Using his local knowledge of the political system and personal knowledge of the Chief Medical Officer, it was agreed that this was a good site to commence the study. It also became apparent that it was a site chosen to trial

some other new methods of improving maternal health outcomes. They had developed an ambulance service, which collected women from the rural areas who required emergency hospital treatment.

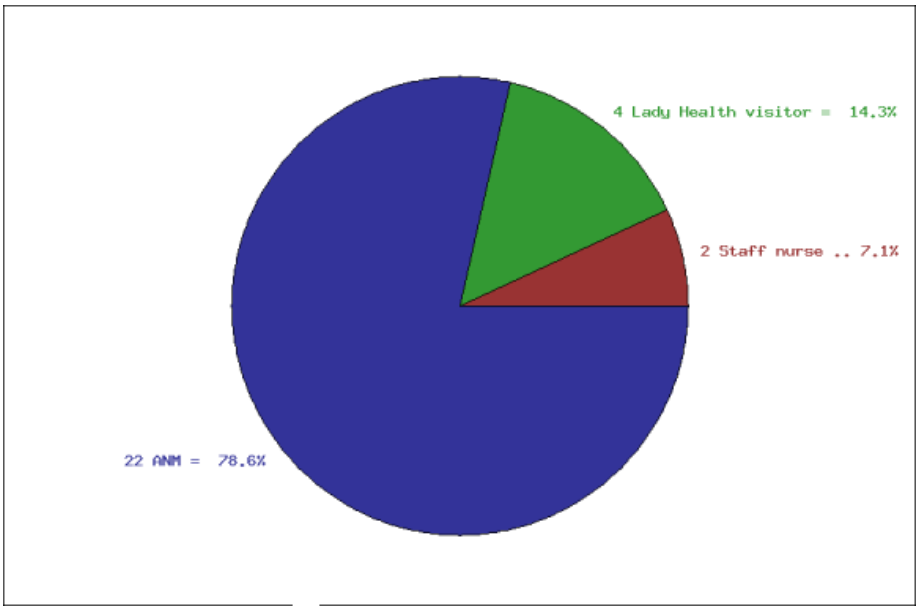
Figure 12 Map of Madhya Pradesh



6.7 Sample selection:

Original discussions with the NGO found that it was normal in India to use “blocks” where the population is approximately 15-20,000 as a focus for any preliminary studies. This would limit the sample size of ANMs to a very small number of four or five participants. Following further negotiation, the number agreed upon was thirty, which would equate to three small districts or one larger one. A convenience sample of 30 primary health care workers would be selected to participate in the study by the Chief Medical Officer of the district of Shivpuri. The group comprised of 22 ANMs, 4 Lady Health Visitors and 2 staff nurses (figure 12). The role of the Lady Health Visitor is to act as a supervisor to the ANM. She has the same training but has several years’ experience, whilst the staff nurse works within the hospital setting and has received similar training to the ANM. This offered a broader range of participants.

Figure 13 Sample of ANM participants at the beginning



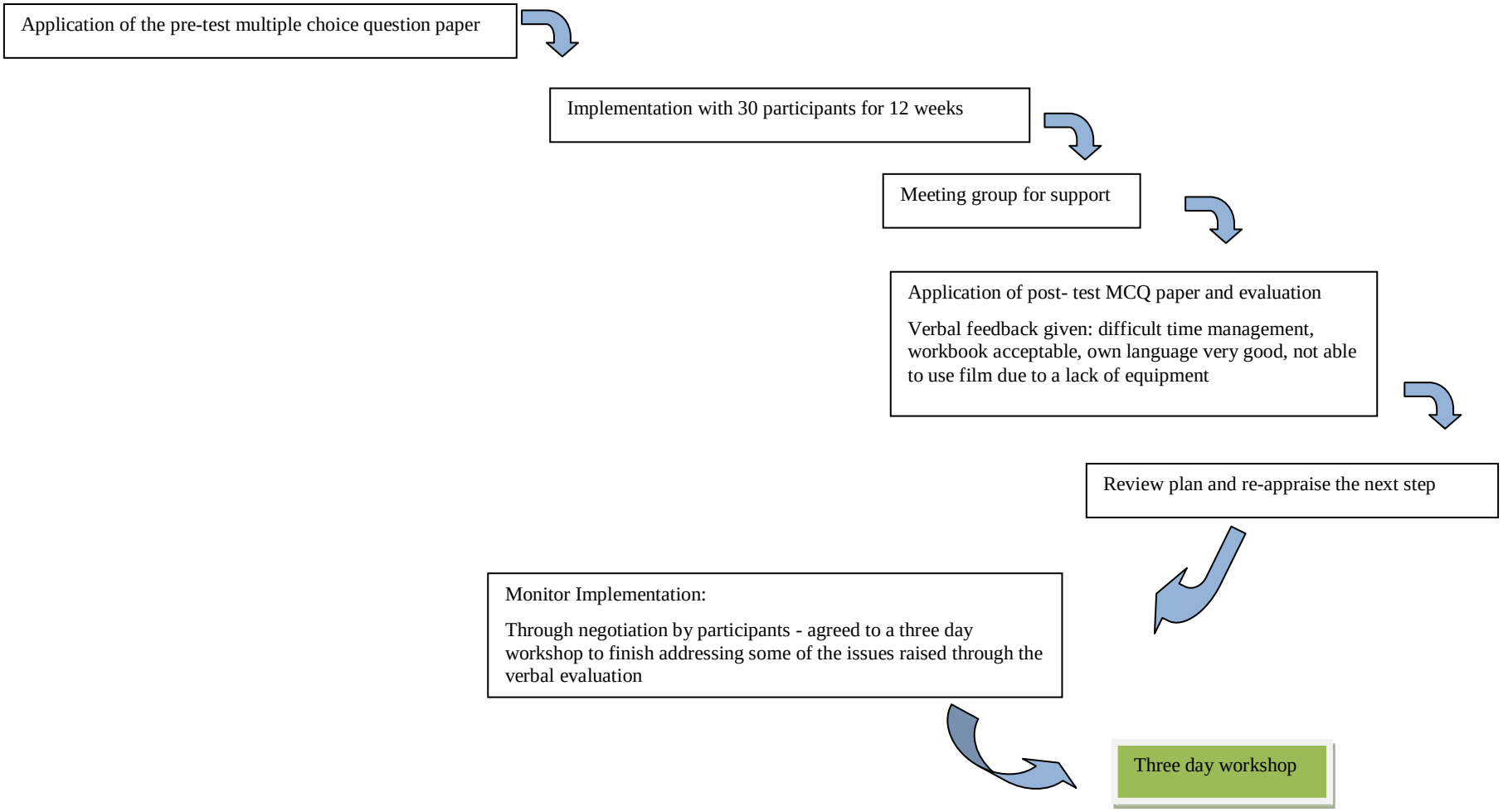
An initial day of introduction to the materials and their use was organised supported by two other days, one in each month following the start. This offered the participants an opportunity to have some time to discuss what they had been learning and some space to use the workbook. It also offered them the opportunity to meet together and learn from each other in order to reduce the feelings of isolation.

6.8 Summary:

This action step has identified that where distance learning materials have been offered in developing countries they have been well received. A review of the literature has identified that visual aids enhance the student experience. Donker (2010) demonstrated that the use of an MCQ paper was a valid method of assessing participants' knowledge. He also demonstrated that using results from the performance test results of the participants was a valid method for evaluating the educational materials' effectiveness.

The researcher designed assessment tool was developed to test personal knowledge performance before and after the study period. These results were to be compared to demonstrate any significant improvements in results. Some questions related to their present clinical practice were included in the paper, so that they had some known areas. A non- parametric test would be employed to accept or reject the hypothesis. A researcher designed evaluation tool was designed to assess the acceptability and usefulness of the educational material as judged by the participants. The diagram below identifies the actions required to complete the implementation.

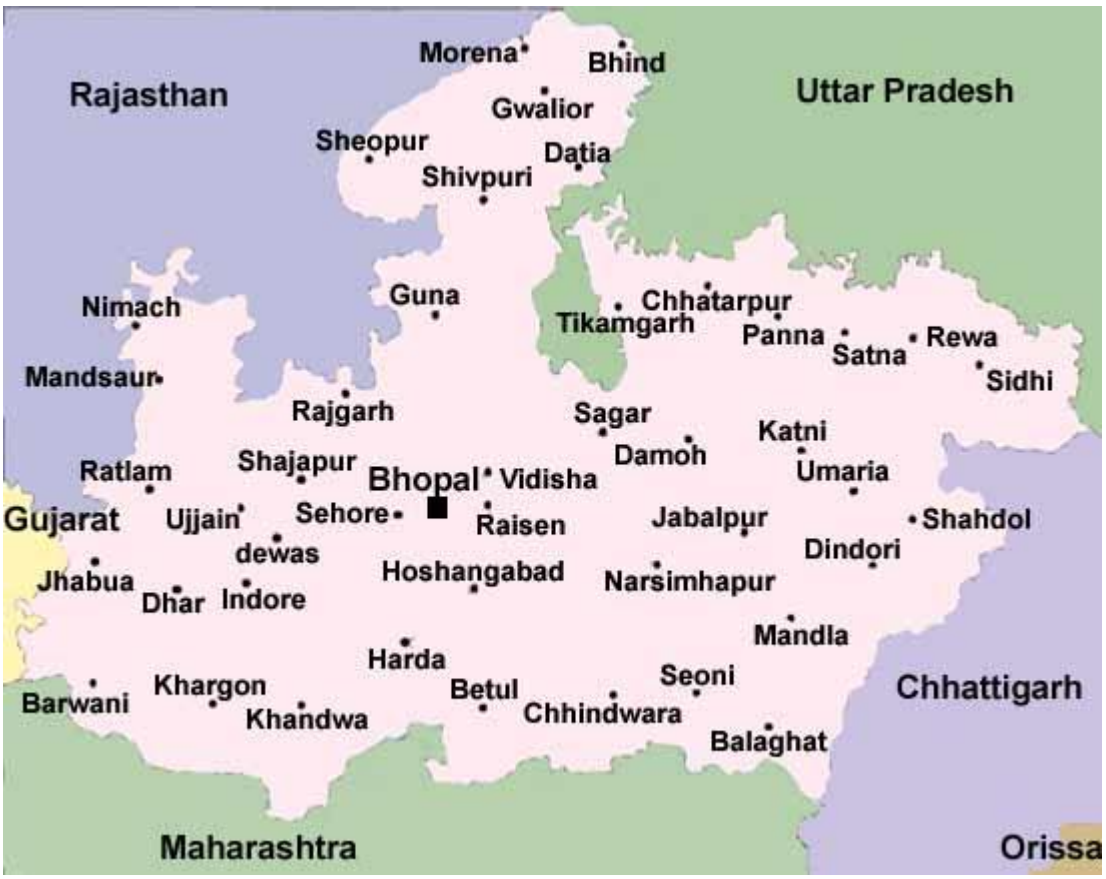
Implementation, Monitoring and review effects



Chapter 7 Implementation

Following the identified pathway for this implementation as identified in the previous chapter. Testing of the distance learning package using the multiple choice question paper commenced in December 2010 in the district of Shivpuri in Madhya Pradesh following consent by the Department of Health and Family Welfare. The District Medical officer for Shivpuri organised 30 of the ANMs in the district to attend the introduction day this group will be known as group 1 within this study.

Figure 14 Map outlining Madhya Pradesh and the areas used for the study, Bhopal, Hosangerbad and Shivpuri.



Two participants did not attend the first day which may have been their method of not giving consent to the study and may be viewed as passive resistance to a top down approach, which supports Robinson's (2006) claim that those who wish to participate will do so. The expectation to participate because you are told to, may impact on the motivation of those participants who attend.

7.1 Pre-test MCQ results:

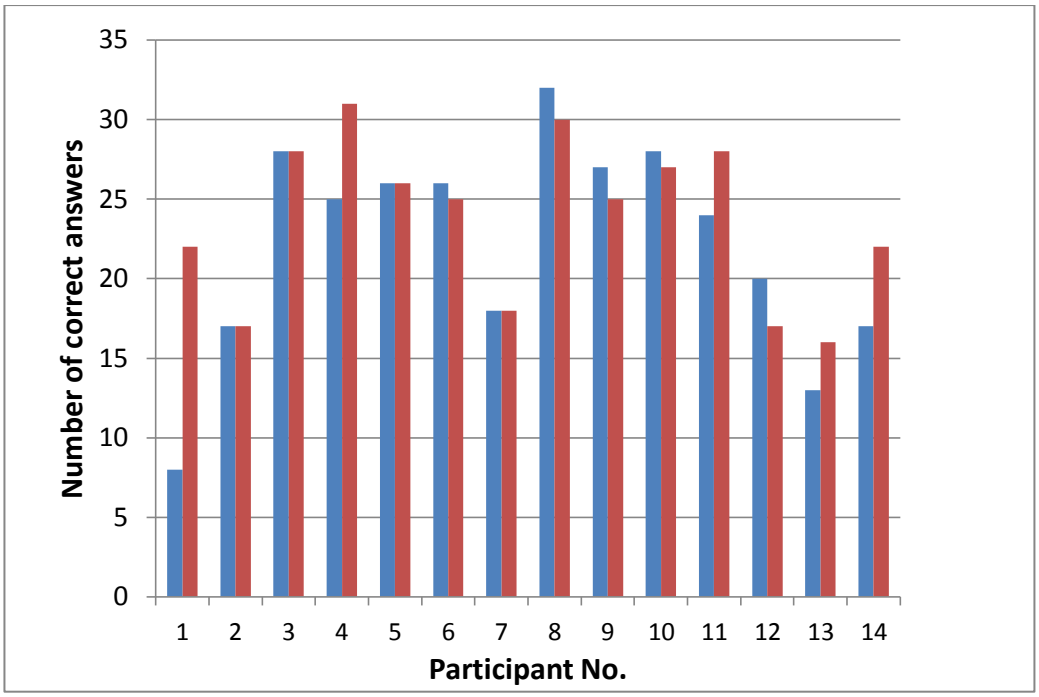
Data were collected following the pre and post intervention (studying the workbook and video), using knowledge based questions in a multiple choice question paper giving a total number of possible correct answers totalling 44. The numbers allocated to each participant for use on their answer sheets were not used but the ANMs put their name on the papers. This could be because they did not understand the principles of confidentiality or because they did not want to.

The briefing day at the beginning of the study period explained the use of the hard copy workbook and the DVD. The initial test paper was applied to the 28 participants who attended this briefing. It was then applied again at the end of a twelve week study period. At the completion of this study period only 50% (n= 14) of participants attended the final day and completed the test paper. Therefore only those participants, who completed both performance tests, were included in the analysis. Due to the sample sizes, care has been taken not to draw conclusions which are generalised but the data presentation will provide an insight into the feasibility of a further study with greater sample size. Data were analysed using the Statistical Package for Social Sciences (SPSS, IBM 2009). Descriptive statistics are used to calculate the means and standard deviations. Non-parametric comparative statistics were used to analyse the ordinal quantitative data to compare the pre and post-test performance scores. Graphical presentations of findings are used to increase the clarity across individual performance as well as the group as a whole. Using an extended association plot (Friendly 1992,1994, Meyer et al2003), data were shaded to highlight improvement, no change or a negative performance score. This was then translated into a graphical chart for greater clarity of the results: column1 equals those who have an improved score, column 2 equals those who made no change in their scores and column 3 equals those who had a negative impact following the study period. This method has been successfully used when there are small sample sizes and two dimensional data (Gobbi et al 2012).

Following the introduction to the study and the workbook and how to use the content, all participants having given verbal consent to participate completed the pre-test personal performance multiple choice question paper. The total number of correct answers totalled 44. The range of the pre-test performance scores of the group were 8 – 32, with a mean of 22 and a standard deviation of 6.73. Several answer papers revealed that all answers were marked for some questions which would suggest participants were unsure of the answer. These answers were not given a mark as this would bias the results. No question was answered completely correctly by the participants. Five questions had no correct answer

and on evaluation these questions have been reviewed to ensure they are not ambiguous and were reworded if necessary. One question related to the range of fetal heart rate monitoring during labour - it was evident that there were two different levels and as the level from the World Health Organisation (WHO) Partogram, which is being used in India, were different from the workbook, a decision to maintain the WHO levels was made and the number of correct answers adjusted accordingly.

Figure 15 Results of the pre and post test for group 1.



No conclusions can be drawn from these results other than that they do highlight the need for further educational study. Fifty per cent of the participants received a mark of twenty five per cent and just seven per cent of the participants received a mark of forty per cent. This is consistent with the view of the stake holders.

At the end of the twelve week study period the personal performance test paper was re-applied. There were fourteen participants. The post-test performance scores were ranging from 16 – 31 with a mean of 23.7 and a standard deviation of 5.09.

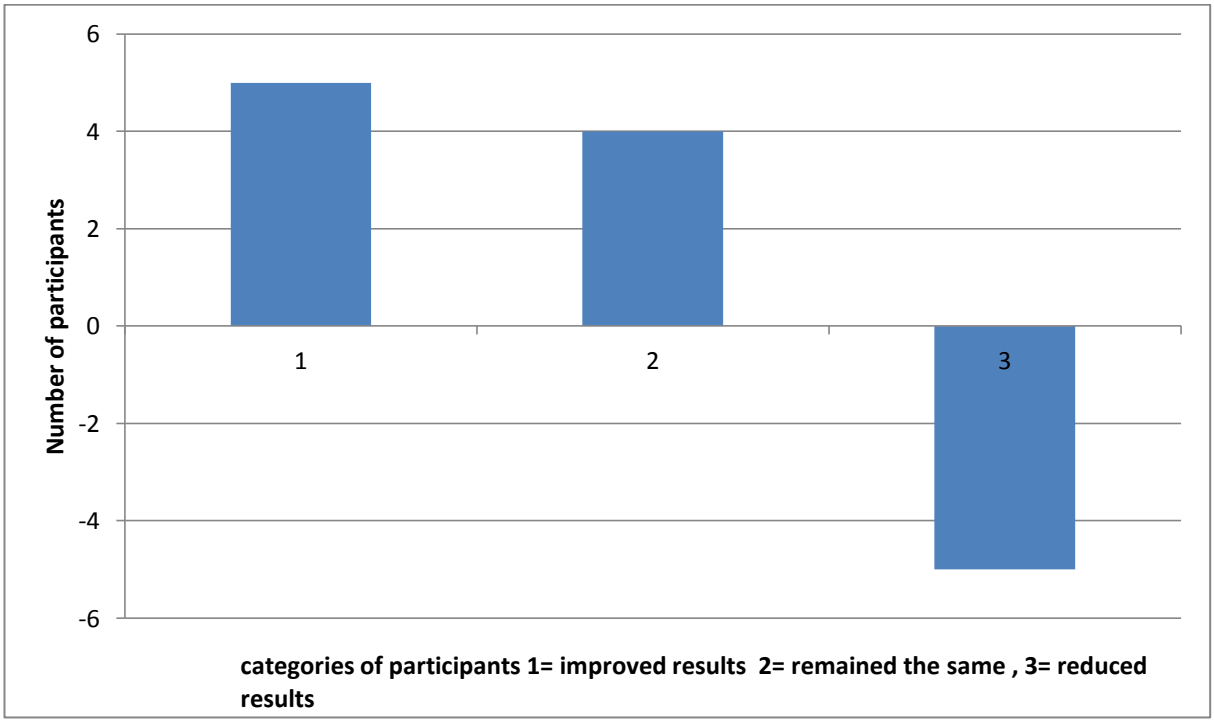
The reduction in participants finishing the study, which included the staff nurses and Lady Health Visitors, could have been for several reasons, although none were given. Work /life balance is one aspect that cannot be dismissed, although this may only represent some of the reason, as many women require permission to do extra activities outside the home. These cultural aspects could be used as an excuse by those who do not wish to participate and therefore use it as a method of passively resisting doing what they don't wish to do. Other reasons may be that they were unable to gain anything by completing the course,

either personally or professionally such as promotion, or that they would not increase their knowledge. The Lady Health Visitors may have felt that they were senior to the ANMs and therefore this was not an activity they should be sharing with them. The hospital staff nurses may have found it difficult to balance their shifts with study. It is interesting that they consisted of those with both the greatest and the lowest scores.

The end of study analysis consisted of only those who had undertaken both the pre and post intervention tests (figure 13). This bar chart demonstrates that the two test results are very similar with no significant change in the mean scores. This can be further demonstrated by the application of Wilcoxon signed ranked non parametric test via SPSS v 18, which accommodates small cohort numbers. This resulted in a non-significant outcome and therefore resulted in a "null hypothesis". Three individual results stand clear of the rest with greater improvements in their personal achievement, which suggests that given the opportunity to study the results could improve.

Using an extended association plot to clarify the number of participants who achieved an improved score, those who stayed the same and finally those who had a reduced score is demonstrated below. Column 1 (N= 5) are those participants who achieved an improved score but these scores were not significantly improved to demonstrate a significant change. Column 2 (N=4) are those participants who achieved the same score as the pre- test results and finally column 3 (N=5) are those with a reduction in their score (figure 14).

Figure 16 Extended association plot for group 1 at the end of twelve week study period



7.2 Monitoring effects of implementation and Reconnaissance: Evaluation feedback by participants:

Implementation of the study was well planned, but due to work/family difficulties during the study period, the participants found it difficult to study and participate in the three study days. During the winter months the room used for the meetings was very cold, and with no heating available, the participants did not work well or did not attend. This could be one reason for the numbers of participants to reduce to fourteen. During the final day discussion, the verbal evaluation identified a problem with the participant's ability to study the educational materials. They complained that they could not find the time due to work and family expectations and commitments, which is not dissimilar to western students (Carnwell 2000). As this was a new way of working for these participants, time management focussed on what they were familiar with and study was the added extra that they appeared not to cope with. Neither did they all have access to a DVD player to be able to use the visual aid developed to support their learning, despite our understanding that they would. All these factors contributed to a lack of engagement with the study materials, possibly a reason for the poor increase in personal results and the "null hypothesis" result returned from the Wilcoxon signed rank non-parametric test.

7.3 Revise general plan:

Through these discussions, however the participants put forward a solution and it was agreed to provide a three day workshop to cover aspects of the material not yet addressed by the participants. This would offer time for collaborative study and would provide an opportunity to view the multimedia film to support their learning. It was also proposed that I was present, so that I could facilitate the study and be available to answer midwifery related questions. As a result of this decision, it was also decided not to apply the evaluation form until the end of the three day workshop.

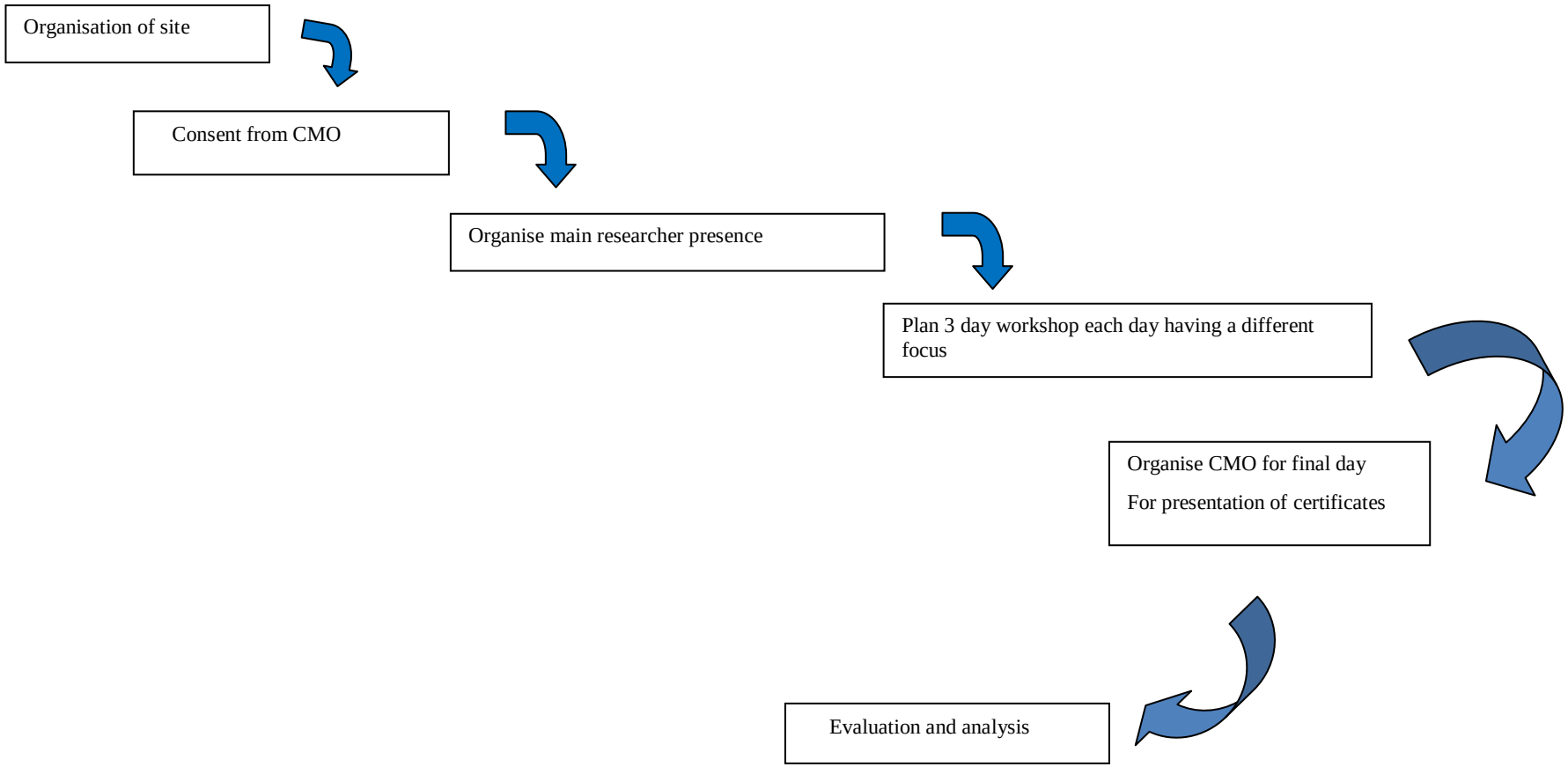
This process supports both the Action Research approach and the adult learning philosophy; demonstrating a participant centred approach. Following this reassessment of the progress and achievements of the study thus far, it was recognised that the social situation of these participants was unique and that the proposed focussed study period might result in a better outcome.

7.4 Summary:

The implementation of the teaching and learning materials revealed that the ANMs found the balancing of the work/home requirements meant that the study time was not identified

and used. Half the participants had decided not to continue which may have been caused by the lack of identified time to study at home. This may have been due to expectations of families as well as the ANMs themselves. Following a verbal evaluation of the situation it was proposed to have a focussed study period of three days. This result demonstrates that the ANMs wish to improve their knowledge but did not have the means to negotiate the time within their normal working day. Reviewing the general plan required the team to organise a three day workshop to complete the study. This is depicted in the diagram below and explored further in chapter 8

Cycle 2 Action Step 1: Three day Workshop



Chapter 8 Cycle 2: Three day Workshop

Cycle 2 follows the revision of the general plan and is a complete cycle which is diagrammatically presented in the diagram at the end of the previous chapter..

8.1 Reconnaissance:

Following the informal evaluation which identified the need for period of focussed study to enhance the learning experience of the participants, a discussion between the study partners and the Chief Medical Officer of Shivpuri agreed to the way forward. This agreement follows the philosophy of an Action Research approach, but was an unexpected outcome which had a major effect on the budget as this was an unscheduled cost.

8.2 General Planning

The workshop was designed to meet the participants' needs: A focussed time for their study, ability to access the DVD recording and to answer their questions related to the content of the educational materials. This workshop was organised in May 2011 by my Indian partner in the centre of Shivupri. The site was a hotel, which provided the participants with accommodation if required and was situated close to the district hospital. A large room was offered for the three days with electricity and chairs. The electricity supply varied but was usually available from 1100 am and with the use of a laptop and projector, the DVD recording could projected on one wall of the room. Access was also possible to the internet through a "dongle" attachment to the laptop, so animations which were previously removed from the film due to copyright were now available for viewing.

8.3 Implementation

All fourteen participants of group 1 arrived followed by an additional nineteen participants sent by the CMO (group 2), totalling thirty three participants. His rationale for sending more ANMs was that the education we were offering applied theory to practice, which his staff had not received previously during their training. These new participants were accepted because it would be culturally unacceptable to turn them away. This change did however provide an opportunity to add a comparison group to group 1. Group 2 were given the pre-test performance MCQ paper at the beginning of the first day.

Each day was planned to focus on a different aspect of midwifery care, which included the use of the WHO antenatal care programme, adapted by my partner who produced a record book to meet Indian requirements; the partogram as an assessment tool for progress in labour, and finally postnatal care. The DVD recording was played every day once the electricity was available, giving the whole group the opportunity to ask practice related questions. Through these discussions a greater understanding of their clinical challenges emerged. Lack of autonomy in making clinical decisions, the inability to gain consent from families to transfer women to hospital and their low professional status due to their gender and social caste; all added to their professional frustrations. Medical officers, who were not obstetricians and who prevented the transfer of women to hospital also caused concern. Discussions related to the rationale for using a partogram to demonstrate the lack of progress during labour were welcomed and motivated them to learn how to use it correctly, as at present they were filling out the graph after delivery. Using the partogram would mean they had clear evidence that slow labour was occurring and would improve the appropriate transfer of women to hospital.

An explanation of the workbook diagrams was requested and they were viewed via the projector prompting many questions related to the physiology of pregnancy and childbirth.

Finally, the post intervention MCQ personal performance paper was attempted by the entire group. Following this, a presentation of certificates was organised officiated by the Chief Medical Officer. The participants however, demanded that this honour should be mine as I had prepared the materials and worked with them.

Figure 17 The final group of participants

8.4 Monitoring effects of implementation: Post workshop results:

The post workshop personal performance results of the original study group are shown on the bar chart above (Figure 15). These results do show that there were improvements in scores achieved.

The results for the three papers displayed together (figure 18), show a greater number of improved scores compared to those in figure 13. However there appears to be better scores but on closer investigation there are only three participants whose score had increased significantly. Of those three was participant 2 who achieved an improved score after the three day workshop which could imply that she engaged more with the teaching materials and possibly was encouraged by her peers. Motivation has been identified as factor in attrition and retention (Galusha 1997) and the presence of the developer of the educational material may have given the participants greater motivation to learn. Respect for teachers in India is great, demonstrated by a national day for teachers. Facilitation by a midwifery teacher could have been a factor in motivating the participants, although this is not clearly demonstrated within their results

Figure 18 Results of all three performance scores for group 1 at the end of the three day workshop

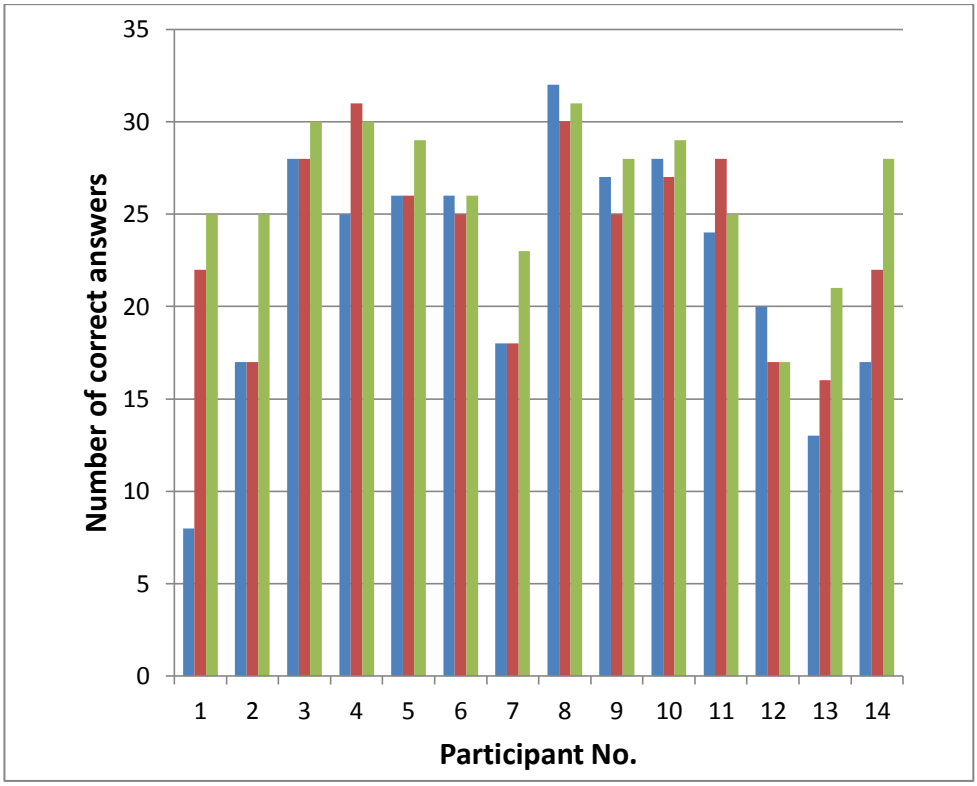


Figure 19 Group 1 personal performance scores using Extended Association plots

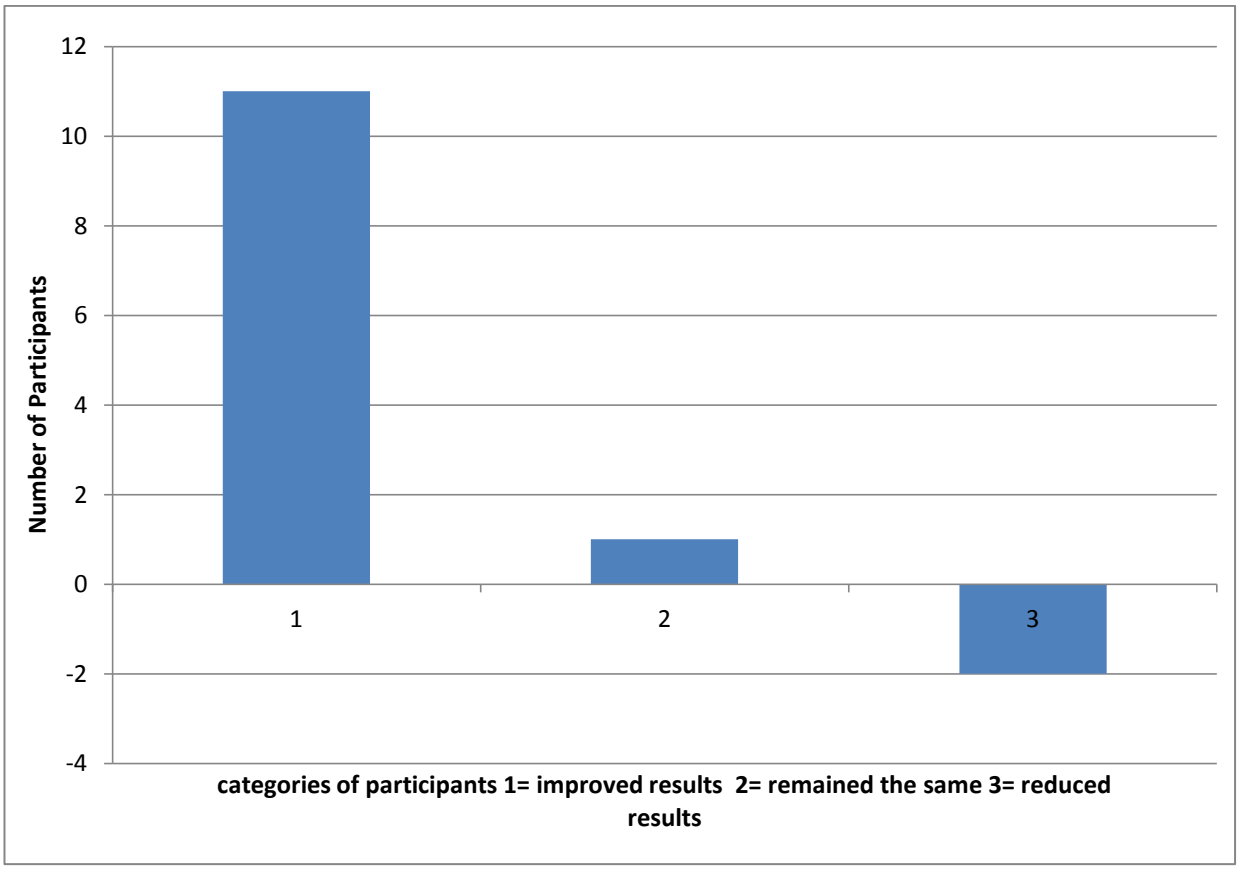


Figure 19 demonstrates that group 1 had a greater number of improved scores although the bar chart in figure 15 does show that the improvements are very limited. Viewing these two presentations of the results, it would appear that the workshop was successful. However when Wilcoxon signed ranked non-parametric statistical analysis was applied to these results, they were not significantly improved and a "null hypothesis" was maintained, suggesting that the scores could have been achieved by chance. Therefore these results could have been misrepresenting the outcome and this demonstrates that the application of statistical testing provides an objective result.

Results of group 2

Using the same marking criteria and presentation of results it is very apparent the results from group 2 demonstrate a greater increase in their personal performance outcomes. This group engaged with the materials from the beginning of the three days. Knowing that they had three days to study may have been an incentive to use the time effectively. For group 2 the pre-test scores ranged from15- 25 with a mean of 18.8 and a standard deviation of 3.18. The post workshop performance scores ranged from 17 – 31 with a mean of 25 and a standard deviation of 4.06.

The application of the Wilcoxon signed rank test proved the hypothesis correct These results identified a significant difference between the pre and post intervention performance scores from the comparison group. This is demonstrated by comparing the extended association plots for the two groups (figures 19 and 21).

Figure 20 Pre and post personal performance score results for group 2

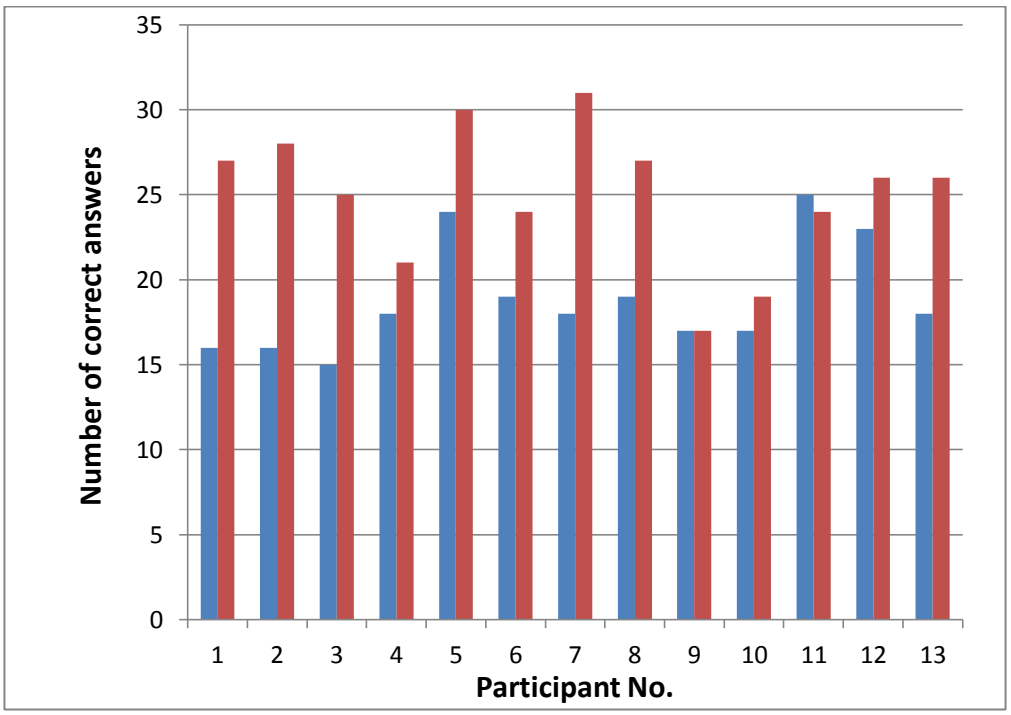
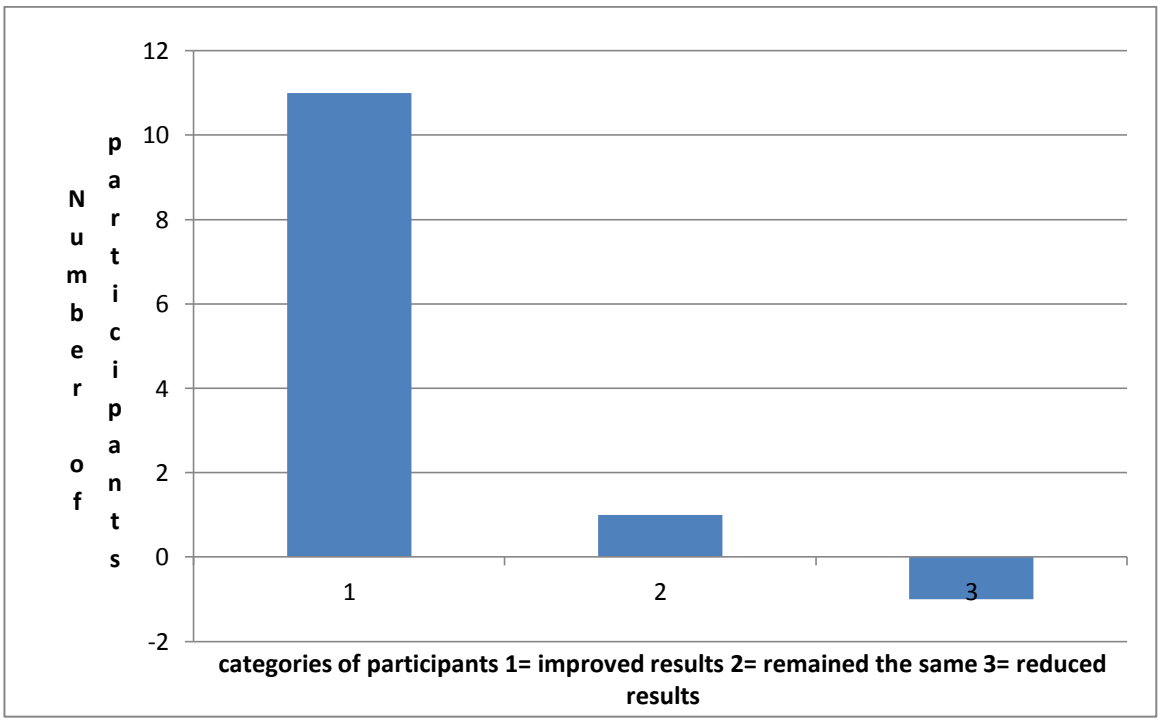


Figure 21 Group 2 achievement scores using Extended Association plot



8.5 Discussion:

Group 1 with the initial 28 participants clearly demonstrated a diversity of knowledge which produced personal performance scores from 1-33. The group, who chose not to complete the study period were possibly those who thought they knew all they needed to know, as the content was normal physiology and management of childbirth. This small group had results from 1-31 correct answers with the majority of the results from 22-28. There could have been little to motivate them to continue with the study if the content did not meet their needs. Either they felt that it was too difficult or that it would not stretch them. Those who did finish the study period produced very disappointing personal performance scores. Struggling to manage work/life expectations is an identified issue by other researchers (Carnwell 2000) and could be the de-motivating factor; however there was one participant whose performance score improved from 9% to 50% during this study period. This demonstrates that engagement with the educational materials made a difference to her knowledge base. This participant may have found self-directed learning easier than others in her group, or her success could have been due to her family supporting her and giving her the time she needed to complete the work. Time management did appear to be an issue as there appeared to be a laissez-faire attitude to starting each day during the study days.

The Indian cultural impact on the participants is difficult to identify, as the socially expected and accepted demands on their time could be used by them to provide a rationale for not engaging with the material, but it could also be the main barrier to studying. The participants did however feel empowered to negotiate a three day workshop. Whilst this is to some extent reverting back to a traditional method of providing education and one that they were familiar and comfortable with, it was used in an adult lead learning experience. This environment enabled the participants to work through the study material at their own pace and with the support of others undertaking the same task.

As previously stated each day focussed on one of the main aspects of care, offering the ANMs an opportunity to have practical demonstrations and discussion. Each morning before the electricity was made available; the ANMs were working through the workbook. A vast amount of discourse gave me the impression that they were just chatting but my Indian partner reassured me that they were discussing the material. Observing the process, it appeared to me that one person held a strategic position and held a great deal of power within the group as a whole. All the other ANM participants referred to her with questions and listened to what she had to say. I needed to ensure that this person was working in a complementary manner to the facilitation of the group. This was achieved by asking her

opinion when discussions arose and she then began to ask very practice related questions almost as a group representative. This was an opportunity to open the discussion, stimulating a positive discourse focussed on evidenced based practice ensuring safety when managing practice issues. Following this, her engagement with the workbook material and the DVD increased. Showing the DVD every day at the request of the participants was further enhanced by the showing of the animations available on social network sites such as "U-Tube" via the internet, causing much astonishment on behalf of some of the participants. The repeated view of the DVD and animation may have been a contributory factor in improving their knowledge as their observation skills were very good. This was demonstrated by questions being asked related to the use of episiotomies for childbirth which had been cut from the final film.

At the beginning of each application of the personal performance test it was explained that the participants should only mark the correct answer on the sheet. The answer sheets used by the ANMs in group 1 showed in the beginning that they were unsure of the correct answers as they marked all the answers. By the end of the study period (three day workshop) they chose their answers and there were fewer answer sheets with all answers marked. This demonstrated that there was a greater understanding and confidence in their knowledge behind the answers given and less chance applied to get the right answer.

The personal performance scores generated by the group 1 (figure 15) demonstrate that the majority of the group made a slight improvement in their scores. A comparison of these scores to those achieved at the end of the three day study period demonstrated a change. However the scores were not improved enough to make a significant difference. When the Wilcoxon signed rank non-parametric test was applied, it demonstrated that these results could have been generated by chance. Even when comparing the primary results with the final scores, the improvement was slight. It is therefore difficult to draw conclusions from this result. It could have been due to familiarity with the materials and a loss of motivation; they did not engage as enthusiastically as the comparison group had done, even though they had negotiated the three day workshop. Looking at individual scores there are three participants who made a continuing improvement from the beginning. Whilst this demonstrates that a self-directed learning experience can provide some change in the performance scores and therefore could be labelled a success, the long term effect of their educational experience of self-directed learning is difficult to predict.

Group 2, who started and finished within the three day workshop, demonstrate a significantly different outcome. Six participants declined to participate in completing the post-test paper by not being available at that time, reducing the number of group 2 to

thirteen. It appeared that these ANMs engaged with the material from the beginning and this resulted in a greater change in the final performance score as demonstrated in figures 20 and 21. Their results were significantly improved; Wilcoxon signed rank non parametric test proved that these results were not by chance. This confirmed the assumption that using a method of self-directed learning was acceptable and resulted in a positive outcome when the learning environment was supported. This demonstrated that like many students they needed the time and space to focus on the material. This may also add to their motivation to learn as Indian people value education and the presence of a teacher could have influenced their motivation.

The outcome of the comparison between the two groups highlights that these participants, using facilitated study material within an empowering environment, successfully improved their knowledge base. The impact of this upon their skills and decision making was not part of this evaluation.

8.6 Participant Evaluation:

An evaluation form had been developed by me with the aim of gaining the participants views on using the materials and what aspects they thought were helpful and those which could have been included. This form had a "Liket scale" which asked the participants to judge the usefulness of the materials on a scale from 1-5, with 5 =very good/helpful. The form was further transformed by my Indian partner as it was felt that the participants would not understand the scale and would find it difficult to apply a low score in criticism of the materials. This type of evaluation would be difficult for the participants to complete as they would not want to pass judgement on the work of those who are perceived as socially higher than themselves and would be deemed disrespectful to the teacher. It was therefore decided that asking a closed question approach would gain a better response.

Some demographic data were included in the evaluation questionnaire which was applied to all participants at the end of the three day workshop. This did not give the ability to identify the difference between the two groups limiting the value of this evaluation data. The rationale for waiting to apply this questionnaire was that the original group were those who would be participating in the three day workshop and need that extra time to form their opinion of the usefulness of the materials. It was not anticipated that there would be a greater number of participants.

All thirty three participants of the workshop completed the evaluation questionnaire (Appendix 3).. From the results presented earlier the number completing the knowledge assessment was twenty seven. The difference between these two figures is possibly

explained by a preference not to undertake the knowledge assessment. As suggested previously these women were sent to this workshop and have used their right to abstain from the test whilst participating in the educational activities. This may also suggest some passive resistance as they may not have wanted to participate but were not able to refrain totally from the activity due to possible repercussions.

This is not dissimilar to the post qualifying education in developed countries when the participants undertake the education component but do not submit the assessment work.

The results of the evaluation include some demographic information which is presented in figures22 and 23. The majority of the participants (N=23) are from the 20-30 year age range when commencing their training. This may have been the result of having to gain consent from the senior family members as it is a residential course. Those aged 35 years and over, maybe widowed and needed to become self-sufficient to support themselves and their families. All were or had been married and had children as this is the requirement of the position. However there is an even spread of midwifery experience within the group, which on observing the group, studying gave them some peer support as those with experience discussed issues with those younger than themselves.

Figure 22 Professional Demographic profile of all participants

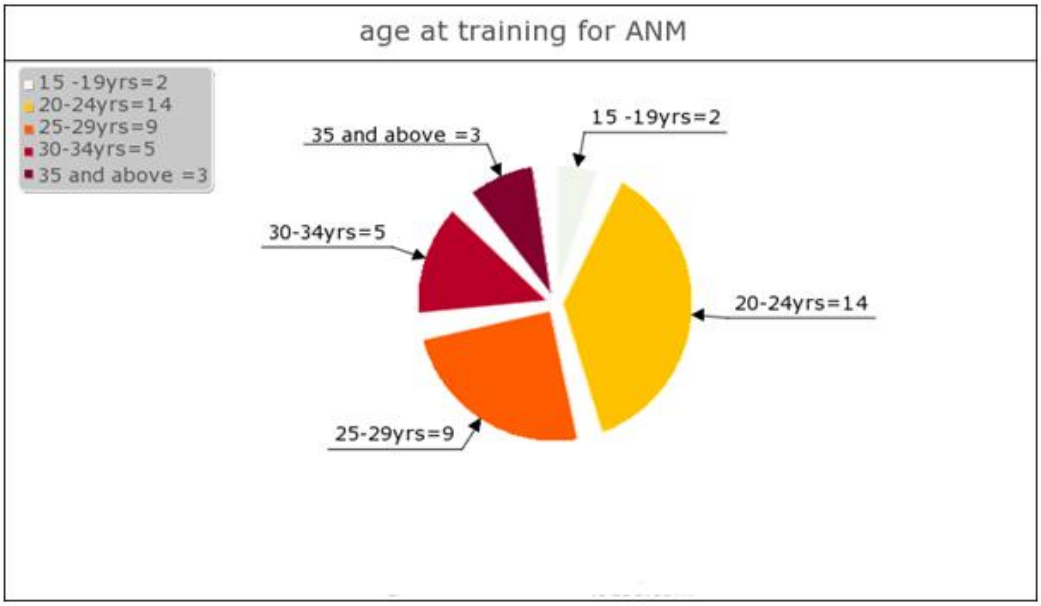
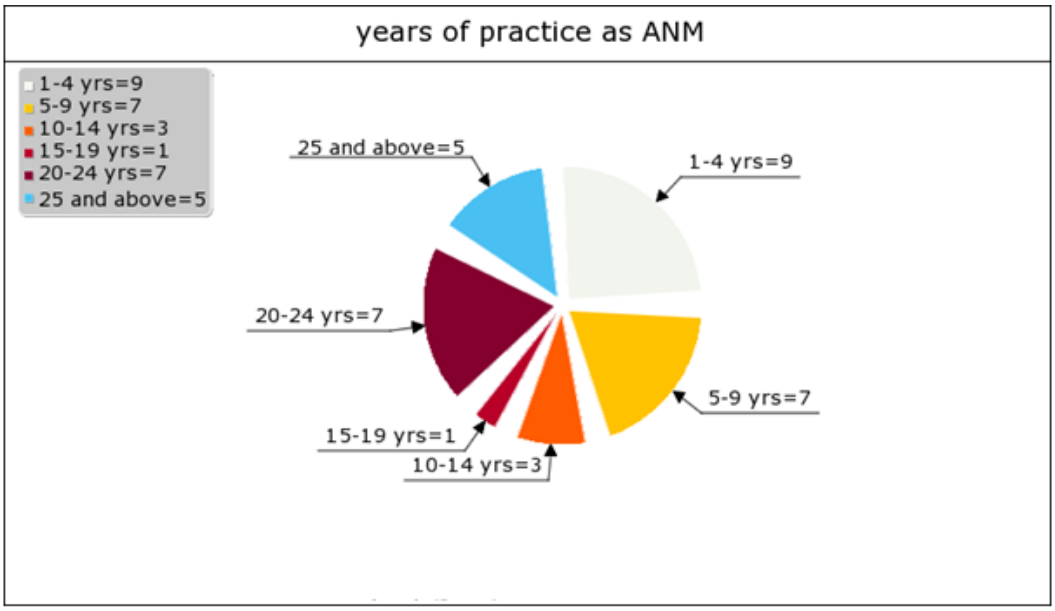


Figure 23 Participants' years of experience



The evaluation data showed that the whole group found the workbook material and the film helpful with thirty-one per cent saying they had learnt something new. Twenty seven per cent of the participants had already applied some of their new knowledge to their practice, with a small number not having had the opportunity as yet. Being able to read and understand the materials was very important to the group and was used as a method of triangulating the previous questions on reading and using the materials. A question related to the language used confirmed that they all did understand the text. Data relating to the activities within the material revealed that although they all saw the benefit in them, none had used them as there demonstrated by a non response to this question. An Antenatal record book, which was designed using the WHO ANC model, was used and found to be helpful. Three per cent found it difficult to complete but no reasons were given.

Questions related to the film identified that all participants who had seen the film found it very useful. There had been difficulties in viewing it for some participants as they had not been able to view the film at home. All wished to view the film again and it was played every day.

Finally they were asked if this type of education should be available to others and 84.8% agreed that it should. This was supported by the comments within the suggestion section of the form. Three comments were related to providing this material to all primary health care workers.

The new knowledge gained was from all areas of care and management during pregnancy, childbirth and post-delivery care of the neonate. 61% (N=20) identified the partogram as new knowledge and this included how to use this tool to identify when labour was

becoming protracted requiring specialist management. Nine comments related to physiology during pregnancy and labour demonstrated that they had engaged with the workbook material and the film demonstrating skills.

One suggestion was that the workbook should include the management of high risk pregnancy and deliveries including emergency situations, which is a possible extension to the programme.

Following a back translation of the qualitative comments it became clear that not all comments were included in the final report from the technical partner in appendix 3. These statements revealed that they appreciated being given the opportunity away from work and home commitments to complete their study. They voiced their appreciation of the literature in their own language, which they had never had before. Two participants stated that meeting with ANM from across the district meant they could discuss and share their practice experiences. Another participant liked the link between theory and practice and that the tutorial support aided their understanding.

One participant said about the workbook "*I have to keep reading as I learn something new every time I read it"* Whilst another suggested that there was not enough information within the workbook but no comment as to what they would have liked.

Another said *"Why would she do this for us?"* not in a suspicious manner but not understanding the motive for helping them in developing their knowledge and clinical practice.

Many thought that the study materials should be made available to all ANMs on a regular basis. The local medical officer expressed the desire to give it to all medical personnel who were working within obstetrics.

8.7 Summary:

Cycle two developed due to the participants negotiating a focussed study period, which inadvertently offered a comparison group to the original twelve week study group. This demonstrated that, although the study materials were intended to be undertaken by the participants within their own time and at their own pace, it transpired that this was a stage too far. As with other students they found that their time management and motivation were stretched (Carnwell 2000) with a negative impact on their ability to spend the time required to read and learn from the material provided. The three day workshop resulted in the participants using the materials and gaining a greater understanding of the process, care and management of normal childbirth. This solution to the problem of not having the time

to study demonstrated that the ANMs were keen to learn. Providing an enabling study environment resulted in a successful outcome although this was not the original plan but developed through the Action Research approach. This demonstrated that they were able to identify a solution and negotiate an outcome for themselves, revealing their growing confidence and emancipation. This also shows that they were eager to further their own professional knowledge and improve practice. The comments made verbally and on the evaluation form demonstrated they valued and were very pleased to be able to use materials in their own language. The success of this study has been achieved on several levels. The long term impact on those who have participated at every part of the development is difficult to ascertain. Teachers of ANM students now have materials in their own language to use for their own teaching. ANMs have the continued opportunity to gain new knowledge and apply it to their practice. As some of them had already applied their new knowledge to their area of practice suggests some emancipation in practice as their confidence has risen. Using a distance learning method of educational delivery has demonstrated that in India with this group, was not a viable option, even if they were eager to improve their knowledge. The impact of a three day workshop, giving the ANMs time to study, was greater than anticipated as the ANMs in group 2 demonstrated greater improvements in their knowledge. The workbook and DVD coupled with facilitation could be used by others to develop the knowledge and skills of the ANM. Resulting in a positive impact on the women in their care and whilst it is impossible to predict any statistical change in maternal mortality or morbidity, the care women receive could change for the better. In the short term if this educational tool is “rolled out” throughout Madhya Pradesh the possibility of improving the service provision would be greater.

Chapter 9: A Personal Reflection: the pervasive influence of partnership

9.1 Introduction

This, the penultimate chapter of my thesis, forms a personal reflection on the pervasive influence of partnership within this study. The chapter is neither a discussion of the findings, this has been incorporated into the preceding chapters, nor is it a conclusion which is to follow.

Throughout this study using an action research approach in a different culture and country meant that I was continuously problem solving, critically thinking and reflecting. During this process and the analysis of my contemporaneous field notes taken during meetings/interviews and fieldwork post hoc personal observations it became evident that partnership on multiple levels pervaded the whole study. The aim of my reflecting in this chapter is to provide some insight into working across continents and cultures. Whilst this is supported by evidence from the field notes, it is my interpretation of those events. Van Maanan (2011) makes it very clear that telling other people's stories, even though we may be an actor in the process, is still a personal interpretation. I thought it was important to try also to understand more thoroughly what partnership within an action research approach was so I undertook a concept analysis to identify if my reflections matched in any way the challenges which were evident within studies of a similar design (the methods used in this analysis are presented in Appendix 4).

The reader may recognise issues within this reflection of power, communication, status as well as knowledge and skills. Whilst these are important concepts they are all aspects of partnership within this study.

9.2 Partnership: a reflection

Within this study there was a technical partner, with whom I had worked previously when acting as a midwifery educational consultant to the State government. However, there were other participants who were partners, contributing through developing, quality assuring and testing the educational material. These partnerships are as important as those with the technical partner and the women who participated in the study. Although they functioned on a different level of responsibility, the study would have been impossible to achieve without them. My reflection and commentary will focus on the partnership with the

technical partner, filmmaker and the partnership with all the women who participated in the study. My role as expert and yet novice is evident within this commentary.

A partnership which is divided by distance requires both parties to trust each other in the decision making and management of the study. Knowing and working together over a period of many years gives an understanding of the other partner's skills eg. organisation, people skills, political understanding. Moss-Kanter (1994) ascertains that a productive partnership involves strategic, tactical, operational, interpersonal and cultural integration. This is a shared view of MacKintosh (1992), Arches (2001), Smith and Bryan (2005) and others, but this is a time consuming exercise which is not often practical. Working in two different countries and meeting only occasionally with the main communication via the internet has the potential for not creating the most positive of foundations. Assessing the skills and knowledge base of the required personnel is often the starting point (Lewis 1998). Having worked together on other projects in India in the same manner did give me some awareness of the social skills required to achieve a positive outcome.

My Indian technical partner is a man of high caste and an academic with an understanding of demographic surveys and has produced a plethora of publications. His interest in maternal wellbeing stemmed from the analysis of many years of data from the National Survey, which identified that the maternal mortality rate had not decreased despite many innovations from the state governments. He is the director of an NGO involved in community work, originally established by his father. Politically, he is also very involved with a family member, who is a member of the State Government and for whom he has run election campaigns for many years. Not only does he have a community conscience, which is not a commonality in India, but he is very well connected socially. His role within this study is to direct the Indian aspects of political consent, organise the participants, arrange accommodation and ensure that the paperwork was translated into Hindi.

Having spent ten years travelling to India for the academic pursuit of collaboration with the State government of Madhya Pradesh in working towards a solution to the lack of skilled birth attendants, I have gained an insight into the social structure and professional practices. This also gave me the opportunity to build a working relationship with my partner. During this time of working with the Indian partner through the consultancy and within this study, our relationship was one of personal respect and professional working. Both of us had different qualities to bring to the process, planning and implementation of the study. This previous relationship had given me some preconceived ideas related to working together. I had not until the end of the study realised the influence of gender, social status and power which would control some aspects of our working partnership.

Partnership within the context of the research and culture requires some further explanation and exploration. The literature has identified some aspects of a partnership, which are the building blocks to success.

Communication:

Communication is one of the main contributing factors in any partnership (Bablak and Thibault 2009, Arches 2001). Face to face communication was usually very difficult as it was dominated by his personality, motivation and to some degree his gender. The communication which involved the planning of the study was dominated by his political needs. His role was to ensure that the Indian aspects were arranged and followed the plan. Everything however revolved around his needs and when the time frame became difficult, he was not prepared to compromise or be flexible. Planned events, although they had been agreed well in advance, did not come to fruition until I had arrived in India. Meetings were arranged in what appeared to be an ad hoc manner. A long period of time into the study I began to realise that this was not his organisation per se but the way things happened in India. In the beginning I was frustrated as many hours were wasted as I waited for telephone calls or lifts to meetings, often to be told that the time or place had suddenly changed. This resulted in me becoming more flexible and patient. Arches (2001) clearly points out that having defined roles and expectations prevents confusion and tension within the partnership, but does not take into consideration cultural diversity. However, my perception of this was a matter of "talking past each other" (Metge and Kinloch (2001:7). There can be misunderstanding even if there is an agreed understanding.

In my first meetings with government officials I was not aware of what might happen or what was expected. No explanation of the process was ever given even by my colleagues with whom I had travelled nor my technical partner. I found myself sitting in an office that had several rows of chairs in front of a large wooden desk, behind which sat the official. People were coming and going throughout the meeting and several discussions were happening at the same time, causing me some confusion. I found myself in the front line as questions from the government minister were fired at me and an agreement to commence the study was presented. This also gave me an understanding that privacy was not an option in Indian society. The partnership developed as I stayed in India but would not develop to be more than a practical arrangement as suggested by Lewis (1998) to achieve the study outcome. We both trusted each other to provide what was needed but not enough to discuss the issues which arose throughout the study. The question here then is: Is this the way of cross cultural partnerships in research? As for me, I can only suggest that it does not have to be but in India it appears to be the case. Caste and gender appear to be the

ruling factors causing some struggle between autonomy and authority (Weiner and Zuckerman 2000) within the partnership.

Power and status:

Power relations are dictated by the social structure and are evident in all aspects of Indian life. Observing the interactions between people demonstrated to me that certain behaviour was expected. This was observed when a senior government official chastised a "subordinate" as this shows who is in control. The "subordinate" accepts the chastising but ignores it, demonstrating that to some extent it is a social game that the people act out. Hofsted (2001) suggested that where a large social divide is present between people there is less likelihood of challenge. It was evident that some of the power of the position held was used in a coercive manner, as with the issue of consent raised and discussed during the development of the multimedia resource. Some women found themselves taking part in the film because this was what they were told to do by their male family members even if they themselves had not given consent to participate. This was apparent by their body language and I was powerless to intervene as my linguistic skills were non-existent. This caused me some distress as the women were not in a position of being able to challenge this attitude. My personal lack of language skills meant I had to rely on others. In this situation, I found myself in a very difficult position, which made me feel very uncomfortable as my protestations were ignored. I felt totally disempowered and manipulated. The outcome was that I "cut" that part of the film and in situations where participants were in agreement and consented but did not want their identity to be seen, the face was blurred. In discussion these issues were not explored or addressed but were often left without explanation leaving a very powerful silence as my partner declined to discuss them.

Several other areas of conflict occurred and were dealt with by noncompliance or passive resistance. One area where this behaviour was evident was the use of animation within the film. The film maker did not want to withdraw these pieces of film which had enhanced the film being developed to support the teaching materials. Eventually, this was resolved following a flurry of e-mail communication. My partner was not supportive of my appeal to have them removed as it appeared he did not want to interfere in the other person's work. This may have occurred because I had interfered in a situation between the two men, when asked if an advance on the agreed price for the film could be obtained so that equipment could be hired. In other situations this did not occur as my partner demanded the highest level performance. In future there needed to be an agreement as to who would do the local negotiations and comply with this agreement, as this might have compromised the position of my partner but again this was never discussed.

Participation within this study as one of the main actors was very difficult. Leading the development of the materials and agreeing to the required changes was incongruent with my social position and being on the fringe. The lack of language skills isolated me further from understanding the real outworking of this study. I always felt that I was given what my partner thought I needed to know, not always what I wanted to know. This was confirmed by the back translation of the qualitative comments in the evaluation forms. The "taken for granted" understanding of what was being said was evident in retrospect on both sides but in reality was not the case in many situations. I personally found that my embedded understanding of midwifery and the status of women in the UK caused some misunderstandings, as I had taken for granted that I was understood. Clarifying the understanding of others is a necessity to ensure good communication and participation.

This study, which I felt very passionate about, was personally an extremely difficult exercise as I had to relinquish of some elements of its organisation and development to my Indian partner. He did what he felt was right but was constantly reviewing the situation, as he was concerned about any political backlash. This limited the progress in many areas of the study. Filming in an environment in which he had little control caused him anxiety and resulted in him not getting involved. He did organise the use of the learning material but this was in a political comfort zone as his extended family were political leaders within the district. His social position was very important to him and he was very aware that a wrong move could cause family dishonour. Throughout this study the honour of the family was a thread. Women did what was demanded of them so that the family was not dishonoured; in the same manner my partner was constrained by the same expectations. Unlike the women who were not in control of the decisions made, he was and this caused him great anxiety as the responsibility for the outcome was also his.

Partnership with others:

The other partnerships of great importance were with the women, who play the greatest role in caring for those who are pregnant and the pregnant women themselves. In chapter one, I have already identified the central challenges for Indian women and these are evident within the conversations I was able to have with those women I met during my reconnaissance.

The ANMs, their teachers and the women they serve gave a clear understanding of the difficulties and worries that were real to them: the fear of mortality in childbirth and the skills required to manage safe childbirth. Without this insight, the information given by people of a different caste and without a personal understanding of their difficulties, would have possibly produced a different product and outcome. Chapter 2 which outlines the

reconnaissance prior to the development of the study materials gives some insight into these meetings.

Visits to the ANM schools had to be agreed with the Director of Health and Family Welfare, and so could be viewed as biased as the best schools were chosen for me to visit. I was not aware of where the schools were located or what the quality of the education was, as this was not made available to me; preventing me from making my own selection of schools to visit. I was made aware that it was the Director who would choose as he was in control. This however did not prevent the teachers from discussing some of their worries and issues in providing a good education to their students.

The principal of the ANM school in Rajasthan was concerned that her students were not as clinically competent as they needed to be as she informed me that:

" the doctors in the hospital only allow our students to observe and not be involved in clinical skills"

This was not the case in Madhya Pradesh ANM school as the principle was delighted to inform me that:

" all our students have to undertake 20 deliveries"

This was quickly supported by a student showing her delivery records, this maybe the best student of the group but it did demonstrate that clinical opportunities where made available to the developing students.

In contrast a school in Uttar Pradesh, where the principal was a social worker and did not understand the need for practising clinical skills within a clinical setting. When asked if she had any difficulty in gaining access to clinical environments she said *" I didn't see the need for them as the student will learn what they need whilst in school."*

I began to realise that there were different models of education and that each school has different requirements and standards. These however are not monitored by the State or National Nursing Councils. The teachers in all the schools were concerned with the lack of contemporary midwifery texts and I was shown a "Myles Textbook for midwives" cica 1950 which had been translated into Hindi in 2000. This confirmed the need for all the information to be in Hindi. All the teachers were well educated, spoke English and were from a high caste family. They were very supportive of my suggestion for the development of contemporary teaching and learning materials in Hindi. It also became apparent that the selection of the students was not the responsibility of the school but of the village councils (Punchat), which could lead to favouritism in the selection rather than the best person for

the role. All students are educated for twelve years and have successfully completed their final certificate. This situation was accepted by the schools but was not necessarily what the teachers preferred. The teachers were very keen to know how the selection of students was done within the UK and said they would have liked the same opportunity even though they were surprised at the numbers applying and that the process was so rigorous.

The students were keen to show their work and showed great respect for their teachers but were not able to be critical of any aspect of their education. This could be that they were not able to make judgements due to lack of experience or it may not be acceptable to do so.

The ANMs I met within the States visits were as keen and generous with their time as the Teachers. An ANM in Uttar Pradesh was keen for me to see her ANM station which clearly lacked equipment. We discussed her practice and the possibility to extend her learning.

She said *" I have learned a lot from working within a hospital and observing suturing, which I now use in my practice. I want to learn more so that I can provide better care"*

She also informed me that her mobile phone was a great asset as she could be contacted at anytime. I was aware that not all the ANM had mobile phones, so this was not a method of communication which could be used for educational purposes at present but one which could be developed in the future.

Another ANM in Rajasthan complained

" I need more equipment, a sphyg to take blood pressures would make my work easier"

Whilst she was telling me, I saw a sphygmomanometer on the windowsill behind her. This made me aware that some of the ANM were trying to manipulate our meeting to gain more equipment as I was a foreigner and might have money. I was also informed by my technical partner that all ANMs working in the community were given equipment for the role but many lost them and they were not replaced.

Another ANM aged in her 60's, demonstrated her willingness to work in partnership with the local Dai. We walked over to the village together to see a woman who was pregnant and wished me to see the area she was working in. There was a water pump providing clean water, the houses were made of mud and open drains were running between the houses. I was introduced to the woman who invited me into her house. Clearly this would be where she would deliver her baby. This made me recognise the challenges that beset the ANM in discharging her duties to these women. As we walked back to her station she informed me that she was: *"finding work difficult, when abnormalities occur in labour, I*

try and encourage women into hospital but family objections and poor transport facilities are the main obstacles."

When discussing the possibility of more education she said: *"I would love to have more knowledge so that I can provide better care especially when things are not right".*

It is evident to me that the ANMs are exceptional observers and have generated their own knowledge from what they have seen but without the theoretical understanding or critical appraisal.

Visiting villages offered the opportunity to meet the women that received care from the ANMs. One woman informed me: *"I want to have my baby in the health facility as it is safer but that decision will be my Father – in – laws when the time of my labour comes".*

This highlighted to me that women no matter how well educated (this lady had a degree from a university), were not able to make their own health related decisions. This is supported in the review of women in India within chapter 1.

In Rajasthan, a woman in a village proudly showed me her baby asleep in her cradle. My escorts on this trip were the ANM and one of the teachers, who became animated in conversation with the couple. When I enquired as to the content of the conversation I was told that it was contraception and that men should be sterilised after having three children. This could be perceived as the use of caste power as the couple were farm workers and of a low caste, whilst the ANM teacher was of a higher caste. I did suggest that they may wish to have more children and was told that they were poor and should not have any more. There was firmness to this statement which suggested that this was "for their own good": a cruel to be kind attitude.

The ANM teachers and practitioners who kindly reviewed the workbook were as open with their comments as those in the field. This workshop principally was to ensure that the topic areas were valid for Indian practice and would extend the knowledge of the ANM. The workbook was the first translation in Hindi, which was considered as too technical by my Indian partner and resulted in another translation using commonly used language. On reflection they did not suggest that this translation was too technical, regarding the language, to me but this came later via my study partner. This group were able to understand the language and therefore may not have seen this as a technical problem for the ANM in practice. Whilst they were very clear that some of the more commonly used skills such as calculation of the date of delivery were not within the text, they did not appear to have the critical application of thinking to discuss the language.

All those I met during these meeting were respectful and very eager to discuss the issues of childbirth and ANM education, which gave me a much better understanding of the situation which was slightly different from the view of the Medical officers and government officials. Their view was expressed in terms of insignificance as the focus of this study was women.

This is supported by the exploration of the role of women in India within chapter 1, which demonstrated that women whether from high or low caste families are not considered equal and have a low status.

The success of the study was due to the partnerships with women and the organisation of the technical partner.

9.3 Partnership: an analysis

Partnership has many uses within social, political and economic environments which include business, education, political coalition, healthcare and many other areas. Partnership in business can be full partnership or percentage or even classed as silent depending on the contractual arrangements decided upon. Our understanding of this socially derived concept will be influenced by our experiences of its use.

Applying a critical approach to the concept of Partnership within an Action Research study which has a cross cultural component, would establish some criteria for use within this context. The aim of this inquiry is to identify characteristics of partnership within an Action Research approach working in the context of a cross-cultural study. Partnership within this Action Research study is an element which, within its cross cultural context, has had some interesting twists and turns. Partnership within Action Research is one of the main components and is often identified as collaboration. This inter-changeability of these two words was also found in other contexts (Carnwell and Carson 2010) which suggest that they are often confused by their use. Taylor and Le Riche (2006) in their extensive literature review identified confusion in the conceptualisation of partnership and that it is often loosely defined using different terminologies. Searching the available literature for an understanding of how partnership or collaboration occurs in Action Research offered some challenges.

As a fundamental expectation within Action Research, it is a “given” that collaboration and partnership are central to the process. These two words are used interchangeably and often only within the title. Few papers explored this aspect of the Action Research process in detail. Using the key words of Partnership, Action Research, collaboration and participatory research to search the databases (CINAHL, MEDLINE and PsycINFO) as

individual words gave an inordinate number of hits but narrowing the search to the first three words identified 178 papers. The timeline for this search was 1995-2013 to identify as many research papers as possible. Language was also a consideration in the selection as English is the researcher's only language; papers in any other language were excluded. This search only identified papers within healthcare and educational Action Research. To extend the search further the Directory of Open Access Journals (DOAJ) covering free, full text, quality controlled scientific and scholarly journals were searched offering a further ten papers. Having access to the full text enabled the selection of the most appropriate papers from this database. Papers were selected for the purpose of this inquiry but it is apparent from the paucity of papers in relation to the meaning of partnership in Action Research that a wider viewpoint was required. Not-for-profit and voluntary sector groups, who have an insight into the working of partnerships, were considered as their experience both from a national as well as an international perspective could enhance the understanding of the meaning. Each paper was read to identify the key components related to partnership working. Using a thematic approach the characteristics of partnership were identified.

The terms used within the literature are related to the development of partnerships in the business world but can be applied to research projects, and suggest collaboration.

Definitions within the literature are:

Lewis (1998) – an agreed relationship based on a set of linkages between two or more agencies.

Lorentz (1989) – Neither friends nor strangers.

Dictionary Definition:

"a relationship resembling a legal partnership and usually involving close cooperation between parties having specified and joint rights and responsibilities" (Merriam-Webster online dictionary 2013)

The definitions offered as a method of clarification have resulted in further confusion as they are required to give a broad overview of the concept rather than a defining approach. All of these definitions can be used to define a partnership within an Action Research study but the dictionary definition is the one which suggests a great level of accountability within the role. The application of this definition to this study brings into question how this work crosses cultures and languages. Rodgers (2000) advocates collecting all the information before any discussion to delineate the concept.

9.4 Discussion

The definitions quoted are suggestive of a relationship (Gallantet al 2006) between people either within organisations or independent of organisations. The involvement of people within a partnership cannot be forgotten and that a partnership evolves even if agreed as a contract between organisations. One of the main attributes is that of working together which requires the possibility of putting personal objectives to one side (Lewis 1998). Lewis also draws attention to the need to re-define the boundaries as new partnerships are agreed and that they cannot be replicated from one context to another. Theoretically partnership is within behavioural and cognitive theory as behaviours are said to be socially conditioned, culturally embedded and economically constrained (O'Brien 1995). People working together will make value judgements and perceive the partnership to be beneficial or not. The forming of a partnership may not be through mutual respect but out of a pragmatic agreement to access scarce resources such a funding or personnel (Lewis 1998). Effective partnership working has been the focus of many (Schuman and Abramson 2000, Weineret al 2000, Arches 2001, Bablak and Thibault 2007, Casey 2011, Andrews et al 2012, Howell et al 2012).

Developing effective partnerships requires commitment and takes time (Schuman and Abramson 2000, Platteel et al 2010 , Moller et al 2009, Alcorn 2011). Moller et al in their cross cultural participatory research in New Zealand describes working with tribes of Maori to gain an understanding of their culture. Sharing the research aims revealed that there were several potential stumbling blocks. As outsiders, the Maori asked the researchers what their interest was as they were uncertain of their motives. Building trust between partners takes time and effort on both sides. The relationship may start from a social perspective showing respect for the other person's culture. Cross cultural differences were highlighted by Schuman and Abrahamson (2000), who include the use of language, understanding of the research process including the literature review, data analysis, issues related to ethical management such as confidentiality and then the presentation of the findings.

MacKintosh (1992) suggests a continuum of partnership working from a synergy to an imbalance; where the cost of the partnership outweighs the benefits which results in the undermining of the research (Schuman and Abrahamson 2000). Vandermause et al (2012) advocate the use of a model of partnership which guides the process. Andrews et al (2012) devised a three dimensional model to assess the compatibility of a partnership. Their first

aspect is “Goodness of fit” and includes the partner’s suitability for the project and assumes that issues such as shared values, mutual benefits and commitment. Secondly, a compatible climate which suggests that both parties are forward thinking, flexible, honest, open minded, ethical with respect and appreciate cultural differences. Finally, it is expected that the partners have the capacity to undertake the research with an inclusive membership, although this is not explained further within the text. This does suggest that a great deal of background research on the prospective partner is required prior to any meeting.

The first objective for the partnership is to identify the infrastructure and processes by which it functions including roles and responsibilities. Not surprisingly, communication is one of the most quoted aspects of joint working within a partnership (Lewis 1998, Platteel et al Coulter 1999, Smith and Bryan 2005, Arches 2001, Anderson et al 2012). Good communication lays at the basis for all aspects of any effective partnership. It opens all parties to the possibility of equalising power and conflict resolution (Casey 2011, Andrews et al 2012), Coulter takes this through to the sharing of information, evaluation, decision making and therefore taking responsibility. Setting the parameters of a working relationship with honesty and clarity from the beginning sets the standard for respect and trust to develop and prevents the struggles between autonomy and authority (Weiner, Alexander and Zuckerman 2000). Christopher et al (2008) suggests that trust building initially happens on an interactive level by acknowledging any history either personal or institutional, listening to the community members, acknowledging expertise and being honest about expectations. An awareness of the language used within any interaction regarding those within the culture that the partnership is functioning is vital to prevent confusion and tension (Arches 2001).

Imbalances within the structure can put the achievements and partnership at risk. Self-awareness within cross cultural working enables open dialogue, mutual respect and trust to develop. However there are factors which can undermine partnership working. Bablak and Thibault (2009) make it very clear that poor planning, infrastructure, lack of mutual goals and objectives have a detrimental effect on the processes of working. This implies that cohesiveness is related to joint modes of working. Didactic partnerships have been demonstrated as being very successful (Tichen and Binnie 1998). Being able to discuss issues and make joint decisions before and after the commencement of the research appears to have a successful outcome. Tichen and Binnie, however are working together in the same environment although they have different roles and are able to spend time with the participants as well as talking through issues together. They clearly state that they

discussed the potential risks to the research before the commencement which gave them the basis for their management.

Alcorn (2001), Moller et al (2009), Vandermause et al (2012) have explored their partnerships in cross cultural research and have all identified similar attributes and consequences within the other papers. The basic characteristics relate to the setting of normative rules, good communication and infrastructure where open dialogue is encouraged so that conflict, imbalance and power issues can be jointly managed. All authors agree that it takes time and commitment to achieve effective partnership working.

All the cross-cultural studies identified have been completed within the same environment/country that the researchers and participants share. Whilst there are cultural differences to address, all are familiar with each other. The uniqueness of my study is that it is managed from a different country and this adds a different dimension to the process of partnership. Tichen and Binnie have worked on aspects of their partnership which they needed to address, which was successfully managed by spending time discussing the issues and resolving them.

9.5 Cross cultural Action Research

It is evident from the literature above that cross cultural Action Research is possible. The degree of success is difficult to extrapolate as the partnership roles are presented in a manner which does not explore all the facets of the partnerships. Using the criteria from Hart and Bond (1995) to assess the success of this study, it meets all the criteria at some level as this study does involve all their elements. It uses a problem solving approach within a social context, through collaboration with several groups to develop an educational programme for the development of ANMs to improve the care offered to pregnant women. However if the issue of emancipation is explored there is a different story to tell.

Emancipation:

Collaboration with women of higher caste status has delivered an educational package which was prescribed for the ANMs. The teachers of ANM students who evaluated the workbook content had their own agenda. They wanted the whole ANM training on pregnancy and childbirth to be included. Was this for the practicing ANMs or for them as they could use the materials in their own teaching. Some areas of the workbook had been criticised by the teachers as they were new ways of working (such as alternative positions

for delivery), but the ANMs within that group were very interested. This reaction leads me to conclude that there was more control being applied to what the ANM should know rather than being open to change. Working across the social strata constantly gave mixed messages and those who were of higher social status dictated what did and did not occur. The ANM were not totally consulted on what they needed and this may be because they didn't know what they didn't know. This inability to understand what they needed to know could possibly be addressed by an interactive working partnership. This did not occur as the partners in the study didn't see the need for including them; although I suggested their involvement could enhance the process. These social constraints inhibited the development of a meaningful partnership.

I would suggest however that those who worked through the educational material were clinically emancipated in that they had a greater understanding of the principles of care, which have been applied and are maintained (personal communication Dr Rai April 2013). They were delighted with a midwifery text in their own language, which they appeared to "own". This has been the trigger for some change within the practice of the ANM, who were not applying theory to practice or using the recommended tools in the care of women, due to a lack of knowledge and understanding.

It had been suggested by the doctors involved in the study that the medical officers, working in obstetrics should also use the workbook to improve their knowledge but this was deemed unacceptable by some as they were of higher social and educational status than the ANM. This cultural aspect of the study has contained the potential for wider application of the educational materials and has been central to some of the difficulties in the development of a broader content. Reducing the information offered for the extension of the ANMs knowledge base has been a constant challenge, as the decisions related to what the ANM needed to know were made by those who were are not of the same caste or work as an ANM.

Conclusion:

Geographical constraints and cultural misunderstandings did have a reductionist effect on this study from my perception but my technical partner, when asked, was not aware of any aspects that he would want to change. I did however come to understand my own limitations in working in this culture. As one who believes all are equal and that open access to information offers the potential for greater understanding and this will improve the care of women, I found these social constraints frustrating and very limiting.

9.6 Summary:

Partnerships, as explored in this chapter, are an inevitable element of Action Research. Using Action Research within a very complex cultural society needs to be very carefully considered; planning to incorporate all those who are to benefit from the outcomes will present challenges. Using a method which is underpinned by an individualist philosophy within a collective society or community will challenge the ability of the researchers to apply the process successfully. Working within one stratum of that society would give a greater scope for success as there would be a greater understanding of the social challenges but working across the strata offered almost impossible challenges and constraints. The impossible was not achieved but where there appeared to be a possible compromise, the almost impossible was overcome.

Future Action Researchers might find it useful to undertake a critical analysis of partnership at the commencement of their work – this was not within the scope of this study but is worthy of further explorations by others.

Chapter 10: Limitations, Contributions, Recommendations and Conclusions

This chapter offers some insights into the limitations, recommendations and conclusions to this study which are designed to help others who may wish to embark on a similar study. These are not totally conclusive but offer some direction to any planning.

10.1 Contributions:

This successful cross cultural study contributes to the understanding of the use of Action Research in a complex society. Action Research offers a flexible approach to exploring solutions to practical problems (Koshyet al 2011, Meyer 2010) and this required working on multiple levels both professionally and socially. There are few societies which have such a complex sustaining structure. Working within this structure to achieve agreement on the methods used and the number of participants calls for a unique partnership.

The contribution this study makes is to the partnership working within this social structure using an Action Research approach. Whilst there are documented studies where cross cultural working has been very successful, this is not without challenges. Being aware of the social structure and its implications will reduce the challenges significantly.

Choosing the right partner within an Action Research study is also a major contribution to its success. Partnership within this study adds to the debate regarding cross cultural studies.

It is evident that culture is a major issue in international working (Hofsted 2001), and the issues which have arisen within this study offer some insight in managing a study through to the achievement of a successful outcome. Personal self awareness and the ability to accept the need to change, aids the process negotiation and discourse vital to the study.

Professional development of health care workers in maternal health has been a focus of the WHO and Governments since the millennium development goals agreed in 2000. The emphasis on skilled attendant at birth has provided opportunities to explore different methods of improving services. Education has been a fundamental method of changing organisations, professions and services, but one which appeared to be neglected within the strategies of the Indian government. The ANMs were keen to develop their knowledge but didn't appear to understand that they had the ability to extend their own knowledge. The lack of study materials in their own language caused de-motivation to explore issues further. The study material in Hindi was a major contribution to the profession, allowing the ANMs to expand their understanding further and develop skills for practice. It has also

been made available to the teachers of ANM students to use within their own teaching. This alone has empowered them to be able to improve their teaching contribution with contemporary material.

This appears to be the first time guided self-directed materials have been offered to this level of health care providers. This has contributed to the understanding of the use of such material within this profession and culture. It has highlighted the issues of home study and the improvements made by providing an effective study environment. This was valued by the ANM as was the ability to discuss issues with their peers and a midwife teacher. The lessons learnt through this approach offer other educational providers an understanding of the issues and needs of this type of learners.

Within this study it became apparent that the use of ethical principles within a collective society was challenging. The ethical principles developed within a western society where the individual is central, cannot be applied without adaptation to collective societies. As the individual is not considered in the same manner nor has the same latitude to make their own decisions. This study adds to this discussion by presenting the issues and challenges that this society presents. Other studies have also found this to be an issue and one which has the possibility to cause research to fail in its objectives (Robinson –Pant 2005).

10.2 Limitations

This study was conducted across a vast distance both in mileage as well as cultural/ethical expectations of the partners. The main challenges of this study are associated with the distance between partners, resulting in many misunderstandings. My main personal limitation was due to the lack of language skills. If I could have participated more in the discussions by explaining the focus of the study to those who were being asked to participate, the issues related to consent may have been more ethically addressed. The filming could possibly have been more effective in demonstrating the skills from the workbook and the ANM would have had a greater understanding of the aim of the study.

Working in partnership with Indian men of high caste and social status has to some extent limited the technical outcomes of the educational materials as they have proceeded to only include what they felt was required. Although this has limited the information it does not appear to have a great effect on the outcome of the study, just reduced the potential knowledge base of the ANM.

10.2.1 Partnership:

The partnership, whilst it did achieve a positive outcome, did not function in a totally collaborative manner as my partner did not discuss or want to reveal aspects of his personal limitations related to the study. This might well have been due to his role within his family and social circle. "Playing cards close to the chest" is not just a cultural issue but one which maintains personal control and social standing. It did increase my frustration and lack of understanding related to some of the decisions made often without consultation. Undertaking a cross cultural study requires a greater personal understanding of the skills required to negotiate and work within all strata of Indian society, so that all participants can develop skills of enquiry which would enhance their professional development.

Filming the skills DVD in India also presented challenges as roles and responsibilities were not always clear. This is demonstrated by the film director's approach as his personal agenda often prevented partnership working and clarity of aim. Although the film did achieve some level of success, it could have been greatly improved by involving partners in discussion on the best way forward. There appeared to be a pride in the sole directorship of the film to the exclusion of everyone else. This individualistic focus impacted on the partnership working across the study, including the study partnership, women in the film and the crew.

10.2.2 Ethical considerations:

The ethical considerations of this study caused some challenges both personally and within a research process. The lack of understanding of the cultural expectations and acceptance of some situations caused dilemmas as it appeared that the caste system expected the women asked to participate to accept and not to challenge any aspect of their inclusion. From a western perspective the individual is central to any consideration and is expected to make his or her own decisions. In the Indian caste system this is not the case as there appeared to be a power influence not only from the family but from higher castes. Therefore the application of western cultural ethics requires some careful reconsideration. As has been discussed earlier there is a need for some flexibility within this area.

10.2.3 Study implementation:

The sample size was small following the voluntary reduction in numbers from the original 28 participants. The total numbers of participants was not within the control of the study

partnership. However the positive result from the "workshop only" group suggests that this method of educational delivery was not only acceptable but provided a medium for the ANMs to explore their practice. A larger study would verify the outcomes further and could expand the understanding of the ANMs knowledge base.

Using a multiple choice question paper to assess the ANMs increase in personal knowledge was limited to academic knowledge outcomes, in that it did provide evidence that this type of self-directed learning achieved an increase in personal performance scores, but it could not provide evidence it changed practice. Donker (2010) used a skills assessment together with a MCQ paper, which provided a more robust assessment. The geographically dispersed nature of the participants in my study made this practically impossible to do on my own. The lack of skilled midwives within the State, coupled with the lack of a competency focus of the national training, meant that there were no midwives with the knowledge or skills to assess competencies using agreed criteria.

Limitations within the health service provision infrastructure clouded the ability to offer clear guidance on the management of situations which required a medical review. A lack of professional policy related to the midwifery management of emergencies within the community would have been useful to provide guidance in the development of the workbook.

10.3 Recommendations:

10.3.1 Indian Midwifery:

Midwifery as a profession has been shown to be the one single element in reducing maternal mortality and morbidity (Koblinsky 2003, Louden 200). Indian midwifery has been neglected nationally with a lack of interest from the National Department of Health and Family welfare as well as the Indian College of Nursing. It was not until very recently the curriculum for the training of ANM was reviewed which means the curriculum being used was from the 1970's and the resources available extremely limited, demonstrating the lack of interest. The Indian College of Nursing is an accepted member of the International Congress of Midwives, even though they do not meet the standards required for membership. The ICM have a responsibility to ensure that their members are meeting these standards and therefore they should be working very closely with Indian Government and the Indian College of Nursing to ensure that the standards of education and practice are met.

The State Departments of Health and Family Welfare should take some responsibility for ensuring that the standard of education is of the highest possible. The interface between the

Government and the Indian college of Nursing requires strengthening to develop standards of education and audit all schools where this education is delivered. This can be in conjunction with the ICM which would the required global standards are met. This includes who teaches and their ability to teach, the resources available including written texts for the students and teachers in their own language. Including a continuous programme of post registration education so that new methods of care can be introduced and skills maintained.

10.3.2 New ways of working

In today's society, technology has played a major role in communication and has developed systems, which can be used to support health care workers in remote or isolated communities. Development of a recorded clinical decision making system that ANMs could use via mobile phones would enable the identification of major midwifery complications and offer management solutions. This would impact to reduce the morbidity and mortality during pregnancy and childbirth in the community. Providing images for the management of serious life threatening complications such as postpartum haemorrhage and retained placenta would give the ANM the ability to manage these when transfer to hospital is delayed or is not possible.

10.3.3 This study:

This study was successful but not conclusively as the results only demonstrated partial success in one group, therefore it requires further enquiry into the use of self-directed materials with the ANMs. Future studies using two different educational deliveries, with one group being self directed at home and the other with a focussed ring fenced time within an enabling environment. The evaluation suggested that all ANMs should have the opportunity to use this material. However a larger sample with a follow up study to enquire into the impact it may have on practice is required. Using a focussed study period to enable the ANM to use the self -directed materials coupled with facilitation so that questions can be answered would give a conclusive outcome.

Once the further study has been undertaken it requires some consideration to extend it further to rolling out to other states. Facilitators would need to be those with the skills required to support the study process giving the central control to the participants without reverting back to a traditional didactic teaching method.

10.3.4 Action Research

Using an Action Research approach in a cross cultural study requires the researchers to have very clear strategies of how to meet the cultural requirements of the study. This

included reviewing their own belief and value systems as they will be personally challenged. Personal development in the diplomacy skills required to work within a culture is advisable prior to any cross cultural study development.

Working with a problem solving approach requires detailed planning and this includes having agreed roles and responsibilities. Reviewing these on a regular basis will help with the communication, rigour and fluidity of the study process.

10.3.5 Ethics

Exploring the potential cultural challenges to any ethical situation prior to the study enables some understanding of the situation and possible areas of collaboration to achieve a positive outcome. Being prepared to change to meet the needs of the participants without compromising the ethical principles expected, may mean accepting ways of working which are outside the traditional methods. Exploring the issues of consent and confidentiality with the study group will help to ensure that the study is within the normal social boundaries of the culture.

10.3.6 Partnership

Participating in this type of research process, demands attention to detail in every aspect of the planning and implementation, without assumptions being made by either side (Taylor and Le Riche 2006). Clear objectives, roles and responsibilities outlined from the beginning will enable a positive conclusion of the study. It is very clear from the concept analysis and the literature that the responsibilities of each partner are clear and if not then failure will ensue (Schumman and Abrahamson 2000). Choosing a study partner needs to have some careful consideration and needs to have the basis of some joint aims or goals but this requires time (Platteel et al 2010). It is suggested that taking the time to initially work on the partnership will improve the potential study outcome.

10.4 Conclusion to the study:

This study was the culmination of ten years collaborative work with the State Government of Madhya Pradesh to improve midwifery services. It followed the unsuccessful change in legislation to adopt a midwifery education and registration programme, which would have offered the health services a skilled midwifery practitioner. The option to develop an educational programme for the improvement of knowledge and associated skills for the ANMs was adopted. An Action Research approach was used to critically analyse the possibility of using a distance learning method of programme delivery. A situational analysis offered an insight into the midwifery services, educational standards and needs of the ANMs. Educational material was developed which included multimedia supportive

film which was scrutinised by Indian ANM tutors, some ANMs and two British Midwife teachers to ensure currency. These educational materials were successfully tested in Shivpuri district of Madhya Pradesh.

The results of this show some success in improving the personal test results of the participants but require further testing to be conclusive. These participants, like many within western society, struggled with managing their time to include study. Their solution to this challenge was to have some "ring fenced" time and an environment to study which would result in an improved level of knowledge. This culminated in a three day workshop so that all participants could view the multimedia resource and use the workbook, joined by a second group who arrived to participate in this study and who demonstrated that combining the self directed element of the workbook and facilitation resulted in improved personal result in the knowledge test. These participants suggested in their evaluation that all ANMs receive the same educational opportunities.

Using an Action Research approach for this study proved to be successful but encountered some challenges which could have resulted in a negative outcome, if they had not been managed with compromise and respect within the study partnership.

Appendices

Appendix One: Work book

प्रसव सेवाओं सम्बन्धी ज्ञान और कौशल के उन्नयन हेतु

कार्य-पुस्तिका

• लेखक •

मैरी फॉस

साउथ हैम्प्टन विश्वविद्यालय
साउथ हैम्प्टन, इंग्लैंड

• अनुवाद •

डॉ बृजेन्द्र मिश्रा

गांधी चिकित्सा महाविद्यालय
भोपाल, मध्यप्रदेश

• फिल्मांकन •

सुनिल शुक्ल

समवेत
भोपाल, मध्यप्रदेश

• सम्पादन •

डॉ वन्दना चौरसिया

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भोपाल, मध्यप्रदेश

डॉ आलोक रंजन

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भोपाल, मध्यप्रदेश

अगस्त 2010

प्रसव सेवाओं सम्बन्धी ज्ञान और कौशल के उन्नयन हेतु कार्य-पुस्तिका

ISBN 10 : 81-902592-7-X
ISBN 13 : 978-81-902592-7-9

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अनुक्रमाणिका

- प्रस्तावना -

यह कार्य-पुस्तिका स्वास्थ्य कार्यकर्ताओं के प्रसव सेवाओं सम्बन्धी ज्ञान और कौशल के उन्नयन के उद्देश्य से तैयार की गयी है ताकि वे उच्च गुणवत्ता वाली प्रसव सम्बन्धी सेवायें प्रदान कर सकें। इस कार्य-पुस्तिका के साथ एक फिल्म भी तैयार की गयी है जो आपके प्रसव सम्बन्धी सेवाओं के कौशल के विकास में विशेष रूप से सहायक होगी। आपसे अपेक्षा है कि इस कार्य-पुस्तिका का अपनी दैनिक गतिविधियों में नियमित रूप से उपयोग करें। आपसे यह भी अनुरोध है कि इस कार्य-पुस्तिका के साथ संलग्न फिल्म को आप अवश्य देखें और फिल्म में दिखाई गयी विधियों का अपने दैनिक कार्यों में उपयोग करें। यह अभ्यास आपके सेवा कौशल के विकास के लिये आवश्यक है।

इस कार्य-पुस्तिका और इसके साथ संलग्न फिल्म को तैयार करने में विभिन्न संस्थाओं और व्यक्तियों ने परोक्ष या अपरोक्ष रूप से अपना सहयोग प्रदान किया है। हम इन संस्थाओं और व्यक्तियों के आभारी हैं । हम विशेष रूप से उन महिलाओं के प्रति कृतज्ञ हैं जिन्होंने इस कार्य-पुस्तिका को तैयार करने में अपना अमूल्य सहयोग दिया।

- आभार -

- साउथ हैम्प्टन विश्वविद्यालय, इंग्लैंड
- जेम्स ट्यूडरफाउण्डेशन, इंग्लैंड
- वारडेट नर्सिंग ट्रस्ट, इंग्लैंड
- एसोसिएशन ऑफकानवैल्थ यूनिवर्सिटीज् क्वालिटी ऑफ लाइफ ट्रैवल ग्राण्ट, इंग्लैंड
- अर्पाच्युनिटीज एण्ड च्वाइसेज् प्रोजेक्ट, साउथ हैम्प्टन विश्वविद्यालय, इंग्लैंड
- वात्सल्य नर्सिंग होम, भोपाल
- समवेत, भोपाल
- विश्व स्वास्थ्य संगठन
- रॉयल कालेज ऑफ नर्सिंग, इंग्लैंड
- नर्सिंग एण्ड मिडवाइफरी काउंसिल, इंग्लैंड
- ग्रेस्टोन नेट इंक, एटलांटा, जार्जिया, अमेरिका
- चाइल्ड बर्थ कनेक्शन

- भूमिका -

यह कार्य-पुस्तिका प्रसव और प्रसव से सम्बन्धित 'प्रसव पूर्व' एवं 'प्रसव पश्चात' सेवाओं से सम्बन्धित आपकी जानकारी और कौशल को अद्यतन बनाने के उद्देश्य से तैयार की गयी है। इस कार्य-पुस्तिका के माध्यम से आप महिलाओं को उच्च गुणवत्ता वाली बेहतर प्रसव सम्बन्धी सेवायें प्रदान कर सकेंगी।

इस कार्य-पुस्तिका के चार भाग हैं। पुस्तिका का प्रत्येक भाग प्रसव प्रक्रिया की एक विशेष अवस्था से सम्बन्धित है।

- कार्य-पुस्तिका के प्रथम भाग में स्त्री के जनन अंगों की संरचना व उनकी कार्यकी के बारे में बताया गया है। रक्त संचरण तंत्र से सम्बन्धित जानकारी भी इस भाग में दी गई है। साथ ही प्रसव पूर्व परिचर्या के बारे में भी इस भाग में विस्तार से बताया गया है।
- कार्य-पुस्तिका के दूसरे भाग में सामान्य प्रसव की कार्यकी और सामान्य प्रसव के प्रबन्धन की प्रक्रिया का विस्तार से वर्णन किया गया है।
- कार्य-पुस्तिका का तीसरा भाग प्रमुख रूप से परप्यूरियम से सम्बन्धित है। साथ ही कार्य-पुस्तिका के इस भाग में स्तनपान व दो जन्मों के बीच समुचित अंतराल रखने इत्यादि विषयों पर विस्तार से चर्चा की गयी है।
- कार्य-पुस्तिका का चौथा और अंतिम भाग नवजात शिशु की देखभाल से सम्बन्धित है।

इस कार्य-पुस्तिका के उपयोग से आप प्रसव से सम्बन्धित विभिन्न अवस्थाओं में स्त्री के शरीर में होने वाली सामान्य प्रक्रियाओं को समझ सकेंगी। आप यह भी समझ सकेंगी कि प्रसव की विभिन्न अवस्थाओं में महिला के शरीर में क्या परिवर्तन होते हैं।

प्रसव प्रक्रिया एक सामान्य प्रक्रिया है फिर भी गर्भवती महिला की समुचित देखभाल आवश्यक होती है। कुछ असामान्य प्रसव भी होते हैं। असामान्य प्रसव स्थिति की समय रहते पहचान की जाना अत्यन्त महत्वपूर्ण है। इस कार्य-पुस्तिका के माध्यम से आप यह भी पहचान कर सकेंगी कि कब कोई प्रसव स्थिति असामान्य हो रही है। प्रसव से सम्बन्धित मृत्यु को रोकने के लिए असामान्य प्रसव की समय रहते पहचान बहुत जरूरी है।

आशा है कि यह कार्यपुस्तिका आप के कार्य में सहायक होगी। आप से अपेक्षा है कि आप अपनी दैनिक गतिविधियों में इस कार्य-पुस्तिका का नियमित रूप से उपयोग करें। आपकी दैनिक गतिविधियों में उठने वाली शंकाओं व प्रश्नों के समाधान करने का भी हमने इस कार्य-पुस्तिका में प्रयास किया है।

प्रसव प्रक्रिया से सम्बन्धित तकनीकी कौशल को विकसित करने के लिये हमने एक फिल्म भी तैयार की है जो इस कार्य-पुस्तिका के साथ संलग्न है। यह आपके तकनीकी कौशल में वृद्धि में विशेष रूप से सहायक होगी।

इस कार्य-पुस्तिका में आपसे कुछ महत्वपूर्ण कार्यों को करने की भी अपेक्षा की गयी है। कृपया अपनी नियमित गतिविधियों में इन प्रायोगिक विधियों को अवश्य करें। यह फिल्म आपके ज्ञानवर्धन और कौशल वृद्धि में विशेष रूप से सहायक होगी।

इस कार्य-पुस्तिका में तीन प्रकार के संकेतकों का उपयोग किया गया है जो कि आपके लिए महत्वपूर्ण हैं।

इस संकेत से तात्पर्य है कि आप दिये गये विषय को ध्यान से पढ़ें। यह गतिविधि के पहले या बाद में हो सकता है जिससे कि आप अपनी जानकारी को तरोताजा कर सकें। आप सुनिश्चित करें कि आपके पास समय है और सीखने के लिये आपके आसपास आरामदायक माहौल है।

इस संकेत से तात्पर्य है कि आपको कोई गतिविधि करनी है।

इस संकेत से तात्पर्य है कि आपको प्रश्न में दिये गये महत्वपूर्ण मुद्दों के बारे में लिखना है।

प्रशिक्षण क्षेत्र के कई साहसिक अनुभवों में से पहले अनुभव के लिये हमारी शुभकामनाएँ।

इस कार्य-पुस्तिका को पूरा करने के लिये कोई निर्धारित समय सीमा नहीं हैं। फिर भी अनुमान है कि अपनी नियमित गतिविधियों के साथ-साथ आप इस कार्य-पुस्तिका को लगभग तीन माह में पूरी कर सकेंगे। अपेक्षा यह है कि आप इस कार्यपुस्तिका को अपनी नियमित गतिविधियों के साथ ही पूरा करें। कार्य-पुस्तिका को पढ़ने और संलग्न फिल्म को देखने के लिये आप थोड़ा सा समय निकालें और कार्य-पुस्तिका से प्राप्त जानकारी और कौशल का नियमित गतिविधयों में यथा संभव उपयोग करें। प्रसव प्रक्रिया से सम्बन्धित आपके ज्ञान वर्धन और कौशल वृद्धि के लिये यह अत्यन्त महत्वपूर्ण है।

भाग - 1 : गर्भावस्था

1. स्त्री के प्रजनन अंग
2. हृदय और रक्त संचरण
3. प्रसव पूर्व परिचर्या
4. सम्प्रेषण
5. हाथों का स्वच्छता
6. अभिलेखन (Record Keeping)

कार्य-पुस्तिका के इस भाग को पूरा करने पर आप

- स्त्री के प्रजनन अंगों और रक्त संचरण में गर्भावस्था के कारण होने वाले परिवर्तनों का वर्णन कर सकेंगे।
- सामान्य गर्भावस्था की कार्यकी का वर्णन कर सकेंगे।
- प्रसवपूर्व परिचर्या का उद्देश्य बतला सकेंगे।
- हाथ धोने, टटोल कर जाँच करने (Palpation) व सम्प्रेषण कौशल विकसित कर सकेंगे।
- प्रसव से सम्बन्धित अभिलेखन कर सकेंगे।

प्रजनन अंग

स्त्री के प्रजनन अंग नियमानुसार हैं :-

1. श्रोणि (Pelvis)
2. गर्भाशय (Uterus)
3. आँवल (Placenta)
4. योनि (Vagina)
5. सर्विक्स (Cervics)

इन अंगों का विवरण नीचे दिया गया है। इन अंगों की संरचना के बारें में जानकारी यह पता लगाने में सहायक होती है कि प्रसव प्रक्रिया सामान्य है अथवा नहीं।

श्रोणि

श्रोणि (Pelvis) अस्थियों का एक छल्ला (Ring) होती है, जिसके कुछ विशिष्ट कार्य होते हैं। यह चार अनियमित आकार की अस्थियों से बनी होती है। श्रोणि के सामने और बगल का हिस्सा इन्नॉमिनेट नाम की अस्थियों से बनता है और पिछला हिस्सा सैक्रम और कॉसिक्स नाम की अस्थियों से बनता है।

इन्नॉमिनेट अस्थि तीन अस्थियों के जुड़ने से बनती है। यह अस्थियां हैं: इलियम, इस्चियम और प्यूबिस।

इलियम, सबसे बड़ी होती है। यह चपटी तश्तरी की तरह का इलियक क्रेस्ट बनाती है। ऐसिटाबुलम (नितंब के जोड़ का प्याला) का 2/5 हिस्सा भी इसी अस्थि द्वारा बनता है।

इस्चियम इन्नॉमिनेट अस्थि का निचला भाग होती है और ऐसिटाबुलम (नितंब के जोड़ का प्याला) का 2/5 हिस्सा भी इसी अस्थि द्वारा बनता है। यह प्यूबिस से अगले हिस्से में आकर जुड़ जाती है।

प्यूबिस इन्नॉमिनेट अस्थि का तीसरा भाग है। दो प्यूबिस अस्थियां आगे आ कर जुड़ जाती है और इस जोड़ को सिंफाइसिस प्यूबिस कहा जाता है।

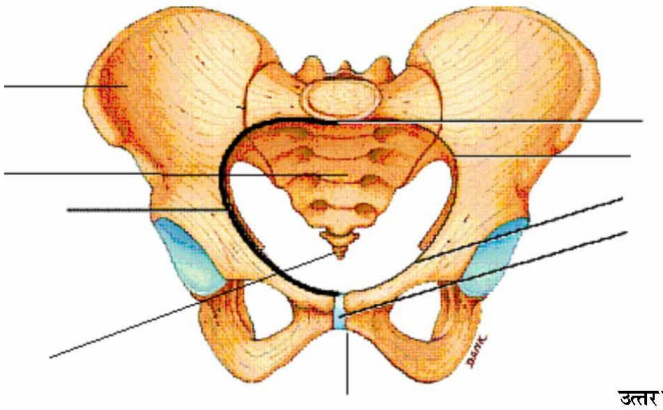
सैक्रम एक तिकोनी अस्थि है जो कि स्पाइन से सैक्रल प्रोमोन्ट्री पर जुड़ती है यह घूमी हुई होती है और इस तरह जनन पथ का भाग बनती है। यह जनन प्रक्रिया में मदद करती है।

कॉसिक्स श्रोणि की सबसे छोटी अस्थि होती है और यह सैक्रम के निचले अंतिम भाग से सैक्रोकॉक्सीजियल जोड़ पर जुड़ती है। यह चार आपस में जुड़ी कशेरुकाओं (Vertibrates) से बनती है।

श्रोणि के निम्न कार्य होते हैं :-

- जांघों को शरीर से जोड़ना।
- श्रोणि के अंदर अवस्थित अंगों को सुरक्षित रखना।
- श्रोणि तल (Pelvic Floor) पर पेशियों को जोड़े रखना।
- गुरुत्वाकर्षण को मेरुदण्ड से गुजारते हुए संतुलन बनाए रखना।

श्रोणि के इस चित्र को नामांकित करें



उत्तर पृष्ठ 32 पर देखें

5

सामान्य प्रसव के संदर्भ में श्रोणि के तीन भाग महत्वपूर्ण होते हैं

- मुहाना (The Brim/Inlet)
- गुहा (The Cavity)
- निर्गम पथ (The Outlet)

श्रोणि के यह तीन भाग जन्म पथ से सम्बन्धित होते हैं जिससे होते हुए शिशु जन्म लेता है। प्रसव की असामान्य प्रगति को श्रोणि के इन भागों में हो रहे परिवर्तनों से पता लगाया जा सकता है।

मुहाना श्रोणि का वह भाग है जहाँ प्रथम बार गर्भवती (Primi Gravida) महिलाओं में शिशु का सिर आकर ठहरता है या इंगेज होता है। एक बार से अधिक गर्भवती महिलाओं के यह जरुरी नहीं है कि शिशु का सिर प्रथम बार गर्भवती महिलाओं की तरह ही इंगेज हो। एक बार से अधिक गर्भवती महिलाओं में शिशु का सिर प्रसव की प्रक्रिया आरंभ होने पर ही इंगेज होता है। यदि शिशु का सिर गर्भावस्था पूरी होने पर भी इंगेज नहीं होता (हड्डी के अंदर नहीं घसता) तो प्रसव में जटिलता की सम्भावनाऐं बढ़ जाती हैं।

श्रोणि गुहा के दो भाग होते हैं अगला भाग सिंफाइसिस प्यूबिस और पिछला भाग सैक्रम कहलाता है। सैक्रम की सतह आगे की तरफ अवतल (Concave) होती है यह अवतल सतह प्रसव के समय शिशु के सिर को आगे बढ़ने के लिये दिशा देती है।

निर्गमपथ मे अस्थि और पेशियां दोनों होते हैं। इसका अग्र-पश्च व्यास 13 से.मी होता है जो प्रसव की प्रगति में सहायक होता है। जो पेशियां श्रोणि गुहा का फर्श बनाती हैं वे अस्थियों से लिगामेंट के द्वारा जुड़ी होती हैं। यह पेशियां शिशु के सिर को सही दिशा में घूमने में मदद करती हैं।

श्रोणि तीन प्रकार की होती है जो अपने आकार के अनुरूप परिभाषित की जाती हैं :

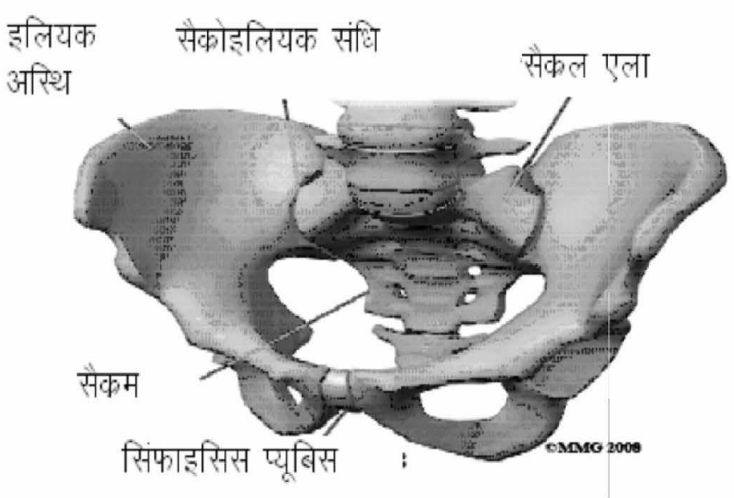
स्त्रियोचित (Gynaecoid) श्रोणि : यह शिशु जन्म के लिये आदर्श होती है। इस प्रकार की श्रोणि के तीनों भाग के व्यास इतने बड़े होते हैं कि शिशु उनमें से आसानी से निकल जाता है।

पुरुषोचित (Android) श्रोणि : इसका मुहाना हृदयाकार होता है जिससे कि ऑसिपुटो-पोस्टीरियर स्थिति वाले शिशु के जन्म में मदद मिलती है।

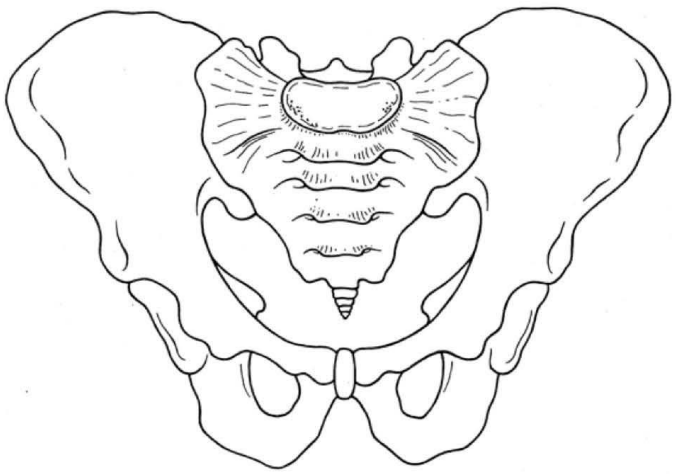
एंथ्रोपॉएड (Anthropoid) श्रोणि : इस प्रकार की श्रोणि का पश्च-अग्र व्यास आड़े (Transverse) व्यास से अधिक होता है। इस प्रकार की श्रोणि पर्याप्त रूप से बड़ी होती है जिसके कारण शिशु की अग्र स्थिति (Anterior Position) होने पर भी सामान्य प्रसव हो सकता है।

प्लैटिपेलॉयड (Platypelloid) श्रोणि : इस प्रकार की श्रोणि का मुहाना किडनी या गुर्दे के आकार का होता है इस प्रकार की श्रोणि का पश्च-अग्र व्यास कम होता है जिसके कारण प्रसव में कठिनाई होती है।

दो विभिन्न तरह की श्रोणियां



गायनोकायड



एंड्रायड

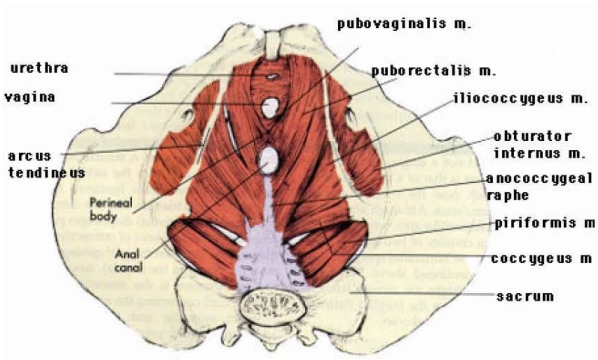
अभ्यास बिंदुः

श्रोणि के आकार का प्रसव प्रक्रिया पर पड़ने वाले प्रभाव के बारे में विचार करें। क्या गर्भावस्था के समय कोई ऐसे संकेत मिलते हैं जिससे आप यह कह सकते हैं कि श्रोणि के आकार के कारण प्रसव के समय कठिनाई हो सकती है?

श्रोणि का आधार

श्रोणि के आधार पर अवस्थित पेशियां श्रोणि की अस्थियों से जुड़ी होती हैं और श्रोणि में अवस्थित अंगों को यथा स्थित रखने में सहायक होती है। यह पेशियां नाली के आकार की होती हैं और श्रोणि के निर्गम पथ को ढांक कर रखती हैं। इन पेशियों में से मूत्र द्वार, रेक्टम और जनन पथ बाहर आते हैं। यह पेशियां जनन प्रक्रिया में सहायक होती हैं। यदि प्रजनन प्रक्रिया में इन पेशियों को नुकसान पहुंचता है तो उसका महिला के स्वास्थ्य पर दूरगामी प्रभाव पड़ता है।

नीचे दिये गये चित्र में उन पेशियों को पहचान की गयी है जो जनन तंत्र को मजबूती प्रदान करती हैं। श्रोणि पर जुड़ी होने के कारण यह पेशियां जनन अंगों को आधार प्रदान करती हैं। साथ ही वे मल-मूत्र त्याग प्रक्रिया के नियंत्रण में भी सहायक होती हैं। इन पेशियों को नुकसान पहुंचने पर मल-मूत्र त्याग की प्रक्रिया पर नियंत्रण प्रभावित होता है जिससे मल-मूत्र त्याग अनियंत्रित (**Incontinence**) हो जाता है।



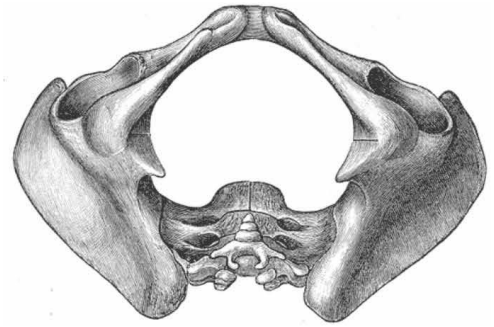
श्रोणि आधार की गहराई में अवस्थित पेशियां

यह पेशियां श्रोणि के निर्गम पथ को ढांक कर रखती हैं और सतही पेशियों के पीछे होती हैं। यह सभी पेशियां कॉसिक्स से जुड़ी होने के कारण काक्सीजियस पेशियां कहलाती हैं। यह पेशियां श्रोणि के आधार को एक गुलेल नुमा आकार देती हैं जो कि प्रसव के समय शिशु के सामान्य मूवमेंट में मदद पहुंचाता है। इन पेशियां को एपीसियोटॉमी व जटिल प्रसव के समय नुकसान पहुंच सकता है जिसके कारण मल-मूत्र त्याग में कठिनाई आ सकती है।

यह पेशियां निचली उदर गुहा के अंगों जैसे मूत्राशय, गर्भाशय, और आंतों को सहारा और आधार प्रदान करने के साथ-साथ पेट के अंदर दबाव को रोकती हैं जिससे कि खांसी या उल्टी के समय अपने आप से मूत्र त्याग नहीं होता है।

- प्यूबोकॉक्सीजियस पेशी – यह पेशी U के आकार की होती है और यह प्यूबिस के दाहिनी ओर से जुड़ कर योनि के आसपास एक फंदा बना कर बांई प्यूबिस से जुड़ जाती है।
- इस्चियोकॉक्सीजियस पेशी – इस पेशी के तंतु इस्चियल स्पाइन से निकल कर कॉसिक्स के ऊपरी किनारों और सैक्रम की निचली सीमाओं तक फैले रहते हैं।
- इलियो कॉक्सीजियल पेशियां – यह पेशियां कासिक्स से दोनों तरफ जा कर इलियक अस्थि की अंदर की सीमाओं पर जुड़ जाती हैं।

रंगीन पेंसिलों का प्रयोग करते हुऐ श्रोणि के नीचे दिए चित्र में गहराई पर स्थित पेशियों को बनाऐं। मदद के लिये अन्य अंगों को भी बनाना न भूलें ।



अभ्यास बिंदु :

इन पेशियों को नुकसान पहुंचने पर महिला के स्वास्थ्य पर किस प्रकार से नुकसान पहुंचता है इस पर विचार करें।

गर्भाशय

जब महिला गर्भवती नहीं होती है तब गर्भाशय और उसके सहयोगी अंग श्रोणि गुहा में अवस्थित रहते हैं। गर्भाशय का दो तिहाई हिस्सा मुख्य भाग होता है जो एक सकरे सर्विक्स में जा कर खत्म होता है। सर्विक्स योनि में उभार के रुप में निकला होता है। गर्भाशय और सर्विक्स के बीच में इस्थमस होता है जो गर्भावस्था के समय गर्भाशय के निचले हिस्से के रुप में विकसित हो जाता है ।

गर्भाशय में तीन परतें होती हैं जो क्रमश: एंडोमीट्रियम, मायोमीट्रियम और पेरीमीट्रियम कहलाती हैं। एंडोमीट्रियम वह परत है जो मासिक चक्र के समय बदलती रहती है और निषेचित अंडे के आरोपण के लिये तैयार होती है। गर्भावस्था के समय यही परत डेसीड्युआ कहलाती है और प्रसव के बाद लोकिया के नाम से गर्भाशय से बाहर आ जाती है।

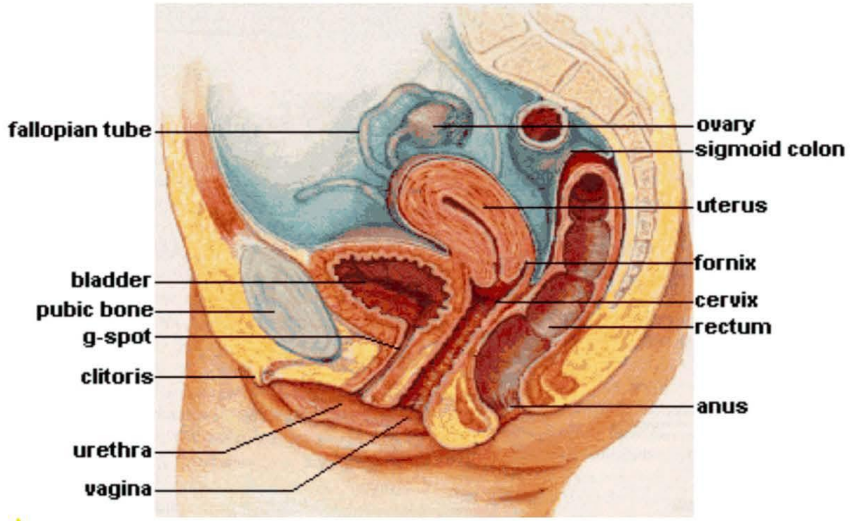
मायोमीट्रियम तीन पेशियों से बनता है जो कि गर्भावस्था के समय और स्पष्ट हो जाती हैं। प्रथम प्रकार की पेशियां लम्बवत पेशियां होती हैं जो प्रसव के समय फैलती और सिकुड़ती हैं। दूसरे प्रकार की पेशियां तिरछी पेशियां होती हैं जो शिशु को गर्भाशय से निकलने में मदद करती हैं। तीसरी प्रकार की पेशियां वर्तुल पेशियां होती हैं जो गर्भाशय की अंदरुनी परत बनाती हैं और सर्विक्स के फैलने में मदद पहुंचाती हैं।

पेरीमीट्रियम बाहरी परत होती है जो कि गर्भाशय के ऊपर फैली होती है। यह परत गर्भाशय को पूरी तरह नहीं ढांकती परन्तु गर्भाशय के आगे और पीछे झुक कर थैलियां (**Pouches**) बनाती है।

पृष्ठ 10 पर दिये गये चित्र में गर्भाशय और उससे सम्बन्धित संरचनाओं की स्थिति दर्शायी गई है। गर्भावस्था के समय इन संरचनाओं की पारस्परिक समीपता इनके कार्य को प्रभावित करती है।

अभ्यास बिंदु :

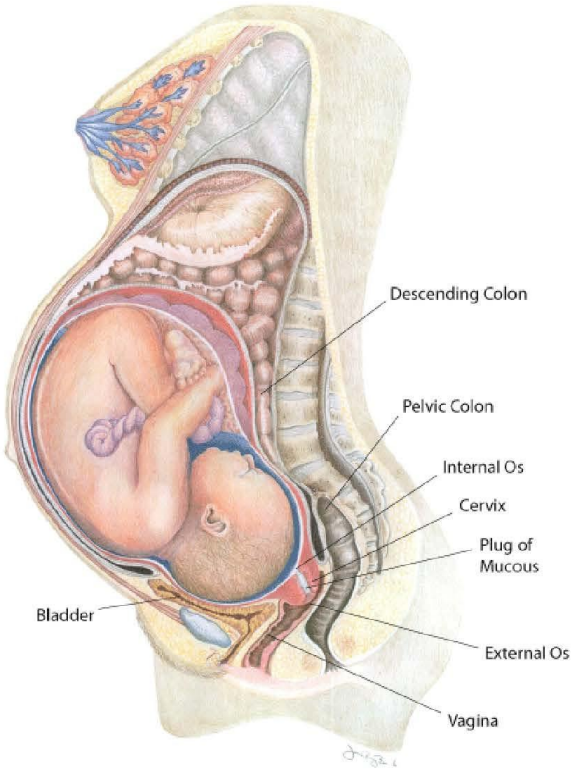
गर्भावस्था में गर्भाशय और उसके सहयोगी संरचनाओ पर होने वाले प्रभाव पर विचार करें।



गर्भावस्था

गर्भावस्था के लगभग बारहवें सप्ताह के आसपास गर्भाशय का विकास होने के कारण इसे सिंफाइसिस प्यूबिस के एकदम ऊपर टटोल कर अनुभव किया जा सकता है। इस समय यह उदर गुहा का अंग बन जाता है। गर्भावस्था के बारहवें सप्ताह के बाद गर्भाशय के फंडस की ऊंचाई टटोल कर भ्रूण की प्रगति का आकलन किया जा सकता है। गर्भावस्था के 20वें सप्ताह पर गर्भाशय की ऊंचाई नाभि तक पहुंच जाती है। गर्भावस्था के 36 वें सप्ताह में गर्भाशय की ऊंचाई जीफिर्स्टनम तक पहुंच जाती है । गर्भाशय का आकार कई अन्य कारणों जैसे गर्भ संख्या (Parity) और भ्रूण की स्थिति पर भी निर्भर करता है।

जब गर्भावस्था 20-30 सप्ताह के आसपास होती है तब गर्भाशय का निचला हिस्सा विकसित होने लगता है। गर्भावस्था के 36वें सप्ताह में श्रोणि के आधार की संरचनाऐं कोमल होने लगती हैं। प्रथम बार गर्भवती महिलाओं में इसी समय शिशु का सिर इंगेज होना आरंभ हो जाता है।



अभ्यास बिंदु :

गर्भवती महिला को सामान्य कार्यकलाप में गर्भावस्था के कारण अनुभव होने वाली कठिनाइयों पर विचार करें। आप इस समय महिला को क्या सलाह देंगे ?

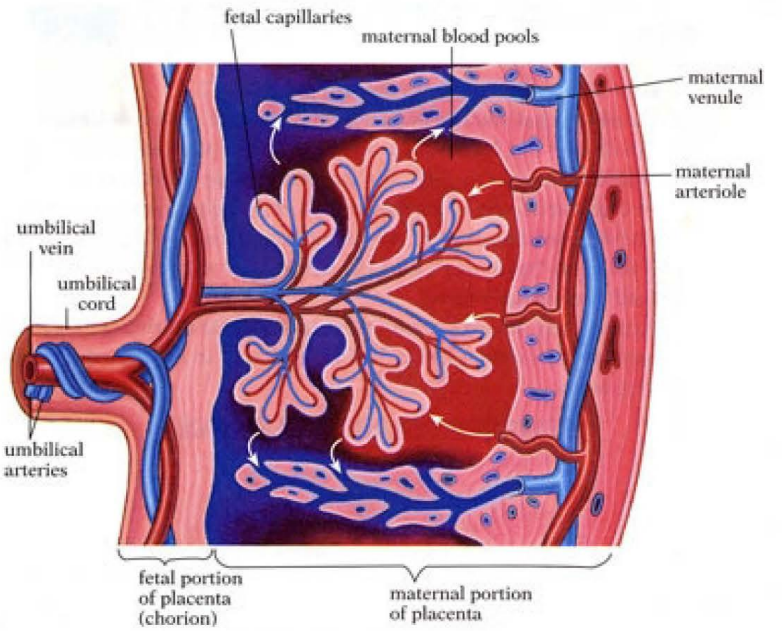
गर्भावस्था में हारमोन्स के प्रभाव से डेसीड्युआ (ऐंडोमीट्रियम) में परिवर्तन होने लगते हैं। यह परत मासिक चक्र के अंत में मोटी हो कर रक्तवाहिकाओं से भर जाती और इस तरह यह निषेचित अंडे के आरोपण (Implantation) के लिये तैयार हो जाती है। यह वातावरण भ्रूण के विकास में तब तक मदद करता है, जब तक कि आंवल (Placenta) काम करने योग्य नहीं हो जाती।

मायोमीट्रियम गर्भाशय की मुख्य पेशीय परत है। यह प्रसव के समय एक महत्वपूर्ण भूमिका अदा करती है। इसके तंतु गर्भावस्था की अवधि के बढ़ने के साथ-साथ बढ़ते और खिंचते जाते हैं जिसके कारण वे आसानी से पहचाने जा सकते हैं। यह तंतु तीन परतों - आंतरिक, मध्य और बाह्य परतों में होते हैं। प्रत्येक परत में तंतु अलग-अलग ढंग से गठित होते हैं।

गर्भावस्था के दौरान पेरीमीट्रियम गर्भाशय को बिना किसी रुकावट के बढ़ने में मदद करती है। इस कार्य के अलावा इसकी अन्य कोई भूमिका नहीं है। गर्भावस्था न होने पर यह परत ढीले रूप से गर्भाशय के चारों ओर चिपकी रहती है।

आंवल (The Placenta)

गर्भावस्था के दूसरे सप्ताह से प्राइमरी कोरियॉनिक विलाई विकसित होने लगती हैं और बाद में यह बढ़ कर आंवल की विलाई बन जाती हैं। विलाई उंगलियों के आकार की संरचनाऐं होती हैं जो कि ऐंडोमीट्रियम पर आच्छादित होती है। गर्भावस्था के तीसरे सप्ताह तक इम्ब्रियॉनिक सैक स्टेम विलाई के द्वारा ऐंडोमीट्रियम से जुड़ जाता है। स्टेम विलाई के बगल से ब्रांच विलाई विकसित होती हैं जिसके द्वारा भ्रूण को पोषण पदार्थ प्राप्त होते हैं और गैसों व अन्य त्याज्य पदार्थों की निकासी होती है।



परिपक्व आंवल

पूर्ण गर्भावस्था के समय आंवल लगभग 20 से.मी. व्यास वाली एक चपटी थाली की तरह होती है जो बीच में लगभग 2.5 से.मी. मोटी होती है। इसकी दो स्पष्ट सतहें होती हैं, मातृ सतह और भ्रूण सतह।

भ्रूण सतह एम्नियॉन से ढंकी होती है और उसमें रक्त वाहिकाऐं दिखाई देती हैं। इसके विपरीत मातृ सतह गहरे लाल रंग की होती है। इसमें लगभग 16-20 हिस्से होते हैं जो काटीलीडन कहलाते हैं। भ्रूण सतह और मातृ सतह के सल्काई के द्वारा एक दूसरे से अलग अलग विभाजित होती हैं।

गर्भावस्था के समय आंवल के कार्य बताइये

आंवल के कार्य

1.

2.

3.

4.

5.

उत्तर पृष्ठ 32 पर देखें

हारमोन्स का उत्सर्जन

आंवल (Placenta) में दो प्रकार के हारमोन उत्सर्जित होते हैं - प्रोटीन व स्टेरॉयड। प्रोटीन हारमोन्स में ह्यूमन प्लेसेण्टल लैक्टोजन (HPL) प्रमुख हैं जबकि आस्ट्रजन और प्राजेस्टेरान प्रमुख स्टेरायड हैं।

एच.सी.जी. हारमोन ट्रोफोब्लास्ट से निकलता है। इसकी उपस्थिति गर्भाधान के 9 दिन के बाद से ही पता चल जाती है। यह सीधे अंडाशय को प्रभावित करता है और वहां स्टेरायड उत्पादन को उत्तेजित करता है ताकि गर्भावस्था को बनाये रखने के लिए आवश्यक प्लेसेन्टल हारमोन्स का समुचित उत्पादन होने लगे।

एच.पी.एल. प्रारंभ में इसका उत्सर्जन सिंसीयोट्रोफोब्लास्ट से होता है और बाद में आंवल इसे उत्सर्जित करता है। यह हारमोन कार्बोहाड्रेट चय-अपचय प्रक्रिया (Metabolism) को बढ़ाता है अतः इसको शिशु के विकास में सहायक माना जाता है। महिलाओं में इंसुलिन की कमी होने से कार्बोहाड्रेट चय-अपचय प्रक्रिया प्रभावित हो सकती है क्योंकि एचपीएल इंसुलिन की कार्यशीलता को कम कर देता है। ऐसी स्थिति में इंसुलिन की अधिक मात्रा की आवश्यकता होती है।

इस्ट्रोजन और प्रोजेस्टीरोन : आंवल द्वारा उत्पादित स्टेरायड हारमोन्स हैं। पृष्ठ 9 पर इनके गर्भावस्था पर प्रभाव का पुनरावलोकन करें।

द्रव्य स्थानांतरण

गर्भाशय में शिशु के शारीरिक व मानसिक विकास की आवश्यकतायें मां से पूरी होती हैं। इसी प्रकार सभी उत्सर्जनीय त्याज्य पदार्थ (Waste Products) भी मां के माध्यम से हटाये जाते हैं। इन प्रक्रियाओं में प्लेसेंटल विलाई व माँ के रक्त संचरण तंत्र की भूमिका प्रमुख होती है। शिशु के विकास में लगने वाले सभी पदार्थ आसान और छोटी

संरचनाओं में बदले जाते हैं ताकि शिशु का अपरिपक्व तंत्र इनका उपयोग आसानी से कर सके।

श्वसन

शिशु को जीवित रहने के लिए ऑक्सीजन की आवश्यकता होती है। अतः गैसों की अदलाबदली भी उतनी ही महत्वपूर्ण है जितनी कि चय-अपचय प्रक्रिया। शिशु को ऑक्सीजन देने में मां व बच्चे के रक्त में हीमोग्लोबिन का अंतर महत्वपूर्ण है। मां के रक्त में आक्सीजन की मात्रा काफी अधिक होती है जो शिशु के विकसित हो रहे रक्त संचरण तंत्र में उपस्थित लाल रक्त कोशिकाओं में स्थानान्तरित होती है। शिशु के रक्त में लाल रक्त कोशिकाओं की संख्या काफी कम होती है। परन्तु शिशु के लाल रक्त कण मां की तुलना में ज्यादा आक्सीजन ले सकते हैं। यदि शिशु के लाल रक्त कण मां के शरीर में उपलब्ध आक्सीजन की मात्रा से अधिक आक्सीजन लेते हैं तो यह गंभीर समस्या होती है । यदि मां में रक्त की कमी हो तो भ्रूण का समुचित विकास नहीं होता है। इस प्रकार के शिशु जन्म के समय कमजोर होते हैं।

श्वसन प्रक्रिया में CO_2 उत्सर्जित होती है जिसका आदान प्रदान मां के हीमोग्लोबिन के स्थान पर लिपिड के माध्यम से होता है। इसी प्रकार चय अपचय के अन्य उत्पाद जैसे यूरिया, बिलुरूबीन इत्यादि आँवल के माध्यम से हटाये जाते हैं।

अभ्यास बिंदु :

मां के शरीर में यदि आयरन की कमी हो तो आयरन की कमी का शिशु के विकास पर होने वाले प्रभाव पर विचार करें।

सुरक्षा (Protection)

आंवल की झिल्ली भ्रूण की काफी हद तक संक्रमण से सुरक्षा करती है। ऐसे बहुत ही कम बैक्टीरिया होते हैं जो आंवल की झिल्ली को भेद कर भ्रूण तक पहुंच पाते हैं। इनमें टी.बी. और सिफलिस के बैक्टीरिया प्रमुख हैं। बहुत सूक्ष्म होने के कारण वायरस भी झिल्ली को भेद कर विकसित हो रहे शिशु में असमान्यताऐं पैदा कर सकते हैं। मां द्वारा ली जा रही दवायें भी इस झिल्ली को पार कर शिशु के विकास को प्रभावित कर सकती हैं।

अभ्यास बिंदु :

आपको यह जानना आवश्यक है कि कौन सी दवायें गर्भावस्था व भ्रूण को प्रभावित कर सकती हैं।

योनि

योनि तंतुओं और पेशियों से बनी एक नली है जो भग (Vulva) से प्रारंभ होकर 80° का कोण बनाते हुऐ गर्भाशय तक जाती है। इसे श्रोणि आधार की पेशियों का आधार मिलता है। योनि के ऊपरी छोर पर सर्विक्स होता है जो बाहर की ओर निकला होता है। योनि की आगे की दीवार लगभग 7 से.मी. और पीछे की लगभग 9 से.मी. लंबी होती है। योनि की अंदर की सतह स्ट्रेटीफाइड स्क्वैमस एपीथीलियम से बनी होती है जिसमें कुछ में ग्लाइकोजन होता है। योनि की कोशिकाऐं निरन्तर टूट कर झड़ती रहती हैं जिससे ग्लाइकोजन उत्सर्जित होता रहता है। यह ग्लाइकोजन प्राकृतिक बैक्टीरिया (Doderlein's Baciliius) की उपस्थिति में लैक्टिक एसिड में परिवर्तित हो जाता है। लैक्टिक ऐसिड के कारण योनि का वातावरण अम्लीय (4.5 ph) बना रहता है जिसके कारण योनि में किसी प्रकार के संक्रमण की सम्भावना कम हो जाती है।

वैस्कुलर कनेक्टिव टिश्यू की एक परत में रक्त वाहिकाऐं, तंत्रिकाऐं, लसीका इत्यादि रहती हैं। यह टिश्यू पेशीय तंतुओं से लिपटा रहता है। इस पेशीय परत को फेशिया ढांके रहता है। इस परत में भी कई परतें होती हैं जो रुज कहलाती हैं। यह परत अपनी इस संरचना के कारण आवश्यकता पड़ने पर फैल सकती हैं।

आपके विचार से योनि के क्या कार्य होते हैं?

1. .....

2. .....

3. .....

उत्तर पृष्ठ 32 पर देखें

सर्विक्स

सर्विक्स गर्भाशय का ही एक भाग है परन्तु इसकी संरचना अलग होती है। जहां पर गर्भाशय की एंडोमीट्रियम सर्विक्स की कॉलमनर एपीथीलियम से मिलती है वह हिस्सा इस्थमस कहलाता है। इस्थमस गर्भावस्था की दूसरी तिमाही में खिंच कर गर्भाशय का निचला हिस्सा (Lower Segment) बन जाता है। सर्विक्स मोटी खोखली नली के आकार का होता है। सर्विक्स के दो द्वार होते हैं एक गर्भाशय में खुलता है जिसे इंटरनल ऑस कहते हैं। दूसरा योनि में खुलता है। जिसे एक्सटर्नल आस कहते हैं। सर्विक्स की कालमनर एपीभीलियम से श्लेष्मा (म्यूकस) निकलता है जिसकी डेन्सिटी हारमोन में परिवर्तन के साथ बदलती रहती है।

गर्भावस्था में हारमोन परिवर्तन (Harmonal Changes in Pregnancy)

गर्भावस्था में कई प्रकार के हारमोन परिवर्तन होते हैं। इन परिवर्तनों को समझना सुरक्षित प्रसव के लिये अत्यन्त महत्वपूर्ण है। स्त्री के शरीर में मासिक चक्र को निर्धारित करने के लिये आवश्यक हारमोन दो ग्रंथियों - हाइपोथैलेमस और पिट्यूटरी से उत्सर्जित होते हैं। इन दोनों ग्रंथियों का आपसी तालमेल रक्त और तंत्रिकाओं के माध्यम से होता है। पिट्यूटरी ग्रंथि के अग्र खंड का हाइपोथैलेमस से तंत्रिका के माध्यम से कोई संबंध नहीं होता पर इस ग्रंथि के पश्च खंड की तंत्रिका हाइपोथैलेमस में ही समाप्त होती है। पिट्यूटरी ग्रंथि के अग्र खंड में पांच तरह के हारमोन उत्सर्जित करने वाली कोशिकाऐं होती हैं। यह कोशिकाऐं हाइपोथेलेमस से प्राप्त संकेतों के अनुसार हारमोन उत्सर्जित करती है जो अंडाशय चक्र की नियमितता को नियंत्रित करती है।

पिट्यूटरी ग्रंथि के अग्र खण्ड से निम्न हारमोन उत्सर्जित होते हैं जो प्रजनन को नियंत्रित करते हैं -

- फॉलिकल स्टीमुलेटिंग हारमोन : यह अंडाशय के अंदर अण्डे के विकसित होने में मदद करता है।
- ल्यूटिनाइजिंग हारमोन : यह कॉर्पस ल्यूटियम को प्राजेस्टीरॉन में परिवर्तित करने में सहायक है।
- एड्रीनोकॉर्टिकोट्राफिक हारमोन
- प्रोलेक्टिन हारमोन : यह होरमोन दुग्ध स्राव के समय आस्ट्रोजन उत्सर्जित नहीं होने देता।

उपरोक्त हारमोन अंडाशय में फॉलिकल को अंडे के उत्सर्जन और उसे मुक्त करने के लिये प्रेरित करते हैं। वहीं पर अंडाशय इस्ट्रोजन और प्रोजेस्टीरोन के उत्पादन के लिये उत्तरदायी होता है । शरीर का स्वयं का एक प्रतिक्रिया तंत्र होता है जो रक्त के स्तर को एक सीमा के अंदर बनाये रखता है। यदि रक्त का स्तर इस सीमा के बाहर जाता है तो हाइपोथैलामस से प्राप्त संकेत या तो हारमोन के उत्सर्जन को कम करने को प्रेरित करते हैं या फिर उसका उत्सर्जन रोकते हैं।

मासिक चक्र की तीन अवस्थाऐं होती हैं आप अपने पूर्व ज्ञान के आधार पर बताऐं कि किस अवस्था में किस हारमोन का क्या प्रभाव होता है?

रक्तस्त्राव अवस्था- 1 से 5 दिन

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रिजनरेशन या प्रोलिफरेशन अवस्था - अवस्था - 6 से 14 दिन

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स्त्रावी (Secretory)अवस्था- 15 से 28 दिन

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उत्तर पृष्ठ 33 पर देखें

अभ्यास बिंदु :

उपरोक्त सूचनाओं के आधार पर गर्भ कैसे ठहरता है, गर्भावस्थाओं के बीच अंतर कैसे लाया जाय और गर्भधारण को कैसे रोका जाए जैसे विषयों महिलाओं को बतलायें जिससे वे स्वयं समझ सकें और अन्य महिलाओं को भी समझा सकें कि उनका शरीर किस तरह कार्य करता है।

इस्ट्रोजन और प्रोजेस्टीरोन

इन हारमोन्स की महिला के शारीरिक और मानसिक विकास में प्रमुख भूमिका है। इस्ट्रोजन महिला के विकास में निम्नानुसार सहायक होता है

- शरीर का स्त्रियोचित विकास।
- स्तनों एवं चूचकों का विकास।
- भग, योनि और गर्भाशय का विकास।
- फॉलिकल स्टीमुलेटिंग हारमोन्स का फीड बैक पद्धति से नियमन।

दूसरी ओर प्रोजेस्टीरोन के निम्न कार्य हैं

- स्त्रावी एंडोमीट्रियम का विकास। एंडोमीट्रियम में रक्त प्रवाह बढ़ जाता है और उससे ग्लाइकोजन का स्त्राव होता है। इस प्रकार प्रोजेस्टीरोन एंडोमीट्रियम को निषेचित अंडे के आरोपण के लिये तैयार करता है।
- मासिक चक्र प्रारम्भ होने से पहले स्तन के एल्वीओलर ऊतकों (Tissue) का विकास।
- अंडे के उत्सर्जन (Ovulation) के बाद शरीर के तापमान में 0.5°से. की वृद्धि।

गर्भाशय के सिकुड़ने की योग्यता इन दो हारमोन्स के परस्पर संतुलन पर निर्भर करती है। इस्ट्रोजन मायोमीट्रियम को मोटा कर देता है और पेशियों को संकुचन के लिये प्रेरित करता है जबकि प्रोजेस्टीरोन पेशी तंतुओं (Muscle fibers) की उत्तेजन क्षमता को कम करता है।

गर्भावस्था के समय इस्ट्रोजन और प्रोजेस्टीरोन के कार्य

इस्ट्रोजन

गर्भावस्था के समय इस्ट्रोजन का मुख्य कार्य शरीर के ऊतकों की वृद्धि को प्रेरित करना होता है। गर्भावस्था के समय इसे मुख्यत: गर्भाशय में देखा जा सकता है। गर्भावस्था के साथ साथ गर्भाशय के पेशीय ऊतकों का बढ़ना भी आवश्यक होता है। इस्ट्रोजन की आवश्यकता गर्भाशय के अलावा स्तनों के बढ़ने में भी होती है।

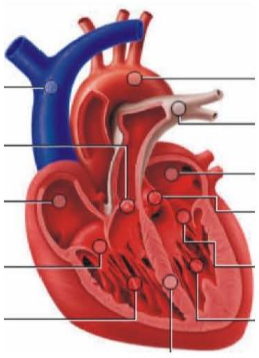
प्रोजेस्टीरोन

प्रोजेस्टीरोन रिलेक्सिन के साथ मिल कर गर्भाशय की स्मूथ पेशियों की संकुचन क्षमता को निम्न स्तर पर बनाये रखता है। यह भ्रूण के विकास और गर्भ को बनाये रखने के लिये आवश्यक है। गर्भावस्था के समय प्रोजेस्टरीन के कारण कब्ज, पेट के ऊपरी हिस्से में जलन (Heart burn) एवं पांव की नसों में फूलापन (Vericose vein) जैसी समस्याऐं उत्पन्न हो सकती हैं।

हृदय और रक्त संचरण तंत्र

गर्भावस्था में महिला गर्भ में पल रहे शिशु की सभी आवश्यकताओं की पूर्ति महिला के रक्त संचरण तंत्र से होती है। अत: सुरक्षित प्रसव सुनिश्चित करने के लिये यह आवश्यक है कि गर्भावस्था में महिला के रक्त संचरण तंत्र का नियमित परीक्षण किया जाय। इस संदर्भ में महिला के रक्त संचरण तंत्र की प्रमुख बातें जानना आवश्यक है।

हृदय के चित्र को नामांकित करें



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रक्त संचरण तंत्र के दो मुख्य घटक होते हैं। प्रथम हृदय है जो सबसे महत्वपूर्ण घटक है और जो रक्त को शरीर के विभिन्न हिस्सों में भेजने के लिये पंप की तरह कार्य करता है। रक्त संचरण तंत्र का दूसरा घटक रक्त वाहनियां हैं जिनके माध्यम से रक्त पूरे शरीर में प्रवाहित होता है।

हृदय में चार कक्ष होते हैं। इन कक्षों के बीच में वाल्व होते हैं जो रक्त को उसी दिशा में वापस जाने से रोकते हैं जिस दिशा से वह आया था। हृदय की पेशियों के प्रत्येक संकुचन के साथ रक्त हृदय के दायें भाग से पल्मोनरी धमनी के द्वारा फेफड़ों तक जाता है। फेफड़ों में इस रक्त का ऑक्सीकरण होता है। यह ऑक्सीकृत रक्त पल्मोनरी शिराओं के माध्यम से हृदय के बांये निलय (Ventricle) में आकर महाधमनी के द्वारा शरीर के अन्य भागों में भेज दिया जाता है। हृदय की रक्त को पंप करने की शक्ति आंतरिक और बाह्य कारकों पर निर्भर करती है। हृदय के अंदर एक विद्युतीय संवहन तंत्र होता है जो कि हृदय को 40-60 संकुचन प्रति मिनट की दर से संकुचित कराता रहता है। इसके अतिरिक्त आटोनामिक नर्वस तंत्र, हारमोन्स, एड्रिनलीन, तापमान और दवाओं के प्रभाव से भी हृदय की संकुचन शक्ति प्रभावित होती है। सामान्यतया हृदय 60-80 धड़कन प्रति मिनट की दर से धड़कता है। हृदय जिस दबाव से महाधमनी में रक्त को भेजता है उसे व्यक्ति का रक्तचाप ले कर नापा जा सकता है। रक्त वाहिकाऐं रक्त को ऊतकों तक पहुंचाती हैं और फिर उसे हृदय तक अगले चक्र के लिये वापस लाती हैं। रक्त वाहिकाओं की तीन परतें होती हैं -

1. रक्त वाहिका की अंदरुनी परत या ट्यूनिका इंटिमा आधार झिल्ली (Base Membrane) पर चपटे एपीथीलियल कोशिकाओं की बनी होती है। रक्त केशिकाओं में मात्र यही एक परत होती है।

2. रक्त वाहिका की बीच वाली परत या ट्यूनिका मीडिया स्मूथ पेशी तंतु तथा लचकदार (Elastic) ऊतको से बनी होती है। इस परत की मोटाई इस बात पर निर्भर करती है कि रक्त वाहिका किस जगह पर है और उसके अंदर का रक्त दबाव क्या है। धमनियों में यह परत शिराओं की परत की अपेक्षा अधिक मोटी होती है।

3. रक्त वाहिका की बाहरी परत ट्यूनिका एडवेंटीशिया तंतुमय (Fibrous) कनेक्टिव ऊतक होती है जिसमें कोलेजन और फाइब्रोब्लास्ट होते हैं।

हृदय से निकलने वाली धमनियों का व्यास 2.5 से.मी. तक होता है। जैसे जैसे धमनियां हृदय से दूर होती जाती हैं वे सकरी होती जाती हैं। धमनिकाओं (Arterioles) का व्यास 0.3 से.मी तक ही होता है।

शिराऐं रक्त को हृदय की ओर वापस लाती हैं। जैसे जैसे शिरायें हृदय के पास आती हैं उनकी संख्या कम होती जाती है और उनका आकार बढ़ता जाता है। पांवों की शिराओं मे एपीथीलियम की मुड़ावदार कप जैसी संरचनाऐं होती हैं जिन्हें वाल्व कहते हैं। यह वाल्व रक्त को वापस आने से रोकता हैं। रक्त का अधिकतम हिस्सा शिराओं में ही रहता है।

कृपया निम्न प्रश्नों के उत्तर दें

1. हृदय का मुख्य कार्य क्या है ?
2. हृदय में कितने कक्ष होते हैं और उनके क्या नाम हैं?
3. शरीर से किस रक्त वाहिका से रक्त हृदय में वापस आता है?
4. हृदय के दायें अलिंद (Atrium) और निलय (Ventricle) के बीच में बने वाल्व का नाम बताइये ?
5. दांये निलय (Ventricle) से रक्त कहां भेजा जाता है? यह रक्त आक्सीकृत होता है या अनाक्सीकृत ?
6. हृदय के बांये भाग में रक्त किस रक्त वाहिका से आता है?
7. बांये निलय (Ventricle) से रक्त कहां और किस रक्तवाहिका के द्वारा भेजा जाता है?
8. उपरोक्त प्रश्न में नामित रक्त वाहिका में रक्तचाप कैसे नापा जाता है?
9. रक्तचाप को हृदय की संकुचन और आराम की अवस्था में किन नामों के अंतर्गत नापा जाता है?
10. सामान्य रक्तचाप क्या होता है?

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रक्तचाप का नापना

गर्भवती महिला का नियमित रूप से रक्तचाप नापना बहुत महत्वपूर्ण है। रक्तचाप नापने से आप यह पता लगा सकते हैं कि महिला गर्भावस्था के पहले से ही उच्च रक्तचाप से पीड़ित है या उसे गर्भावस्था के दौरान उच्च रक्तचाप विकसित हुआ है। दोनों ही परिस्थितियों में रक्तचाप को नियंत्रित किये जाने के उपाय जरूरी हैं। रक्तचाप अक्सर बदलता रहता है। वयस्कों में सामान्य रक्तचाप 60/100 से 90/120 के बीच रहता है । गर्भावस्था मे रक्तचाप पर हारमोन्स के कारण कई प्रभाव होते हैं। गर्भावस्था की दूसरी तिमाही के समय प्रोजेस्टीरोन हारमोन के प्रभाव से रक्तचाप अक्सर कम हो जाता है पर धीरे धीरे यह सामान्य हो जाता है।

रक्तचाप नापने का प्रशिक्षण सभी स्वास्थ्य कार्यकर्ताओं को आधारभूत प्रशिक्षण के समय दिया जाता है। फिर भी देखा गया है कि सभी गर्भवती महिलाओं के रक्तचाप की नियमित रूप से जाँच नहीं की जाती।

कृपया विचार करें की सभी गर्भवती महिलाओं का रक्तचाप नियमित रूप से नापने में क्या व्यवहारिक कठिनाइयाँ आती हैं।

इन प्रश्नों पर विचार करते समय उन तरीकों के बारे में सोचें जिनसे यह बाधाऐं दूर हो सकती हों।

अभ्यास बिंदु :

गर्भवती महिला के रक्तचाप का अभिलेख रखने से आप यह जान सकेंगी कि कब और कौन सी महिला उच्च रक्तचाप से पीड़ित हो गई। सुरक्षित प्रसव की दृष्टि से यह जानकारी अत्यन्त महत्वपूर्ण है।

रक्त की संरचना

रक्त प्लाज्मा, प्लेटलेट और रक्त कोशिकाओं से मिलकर बनता है।

प्लाज्मा

- प्लाज्मा एक द्रव है जो रक्त कोशिकाओं को और अन्य पदार्थों को शरीर में एक स्थान से दूसरे स्थान पर ले जाता है।
- यह पीले रंग का होता है और इसमें अधिकतर पानी होता है।

प्लेटलेट

- प्लेटलेट कोशिकाओं के टुकड़े होते हैं।
- रक्तवाहिकाओं को हानि या चोट पहुंचने पर प्लेटलेट क्लॉट बना कर रक्त का शरीर से बाहर निकलना बंद कर देती हैं।

रक्त कोशिकायें

- रक्त कोशिकाऐं सफेद और लाल होती हैं।
- लाल कोशिकाओं में केंद्रक (Nucleus) नहीं होते और यह अवतल सतह वाली तश्तरियों जैसी होती हैं।
- इनमें एक पदार्थ हीमोग्लोबीन होता है जो ऑक्सीजन को शरीर के सभी हिस्सों में पहुंचाने का कार्य करता है।
- सफेद कोशिकाओं में बड़ा केंद्रक (Nucleus) होता है और यह लाल रक्त कोशिकाओं से बड़ी होती हैं। यह दो तरह की होती हैं-फैगोसाइट और लिम्फोसाइट। नाम की तरह इनका आकार भी अलग अलग होता है। इनका मुख्य कार्य संक्रमण से लड़ना होता है।

N O T E S

N O T E S

गर्भावस्था के समय रक्त में निम्न परिवर्तन होते हैं

प्लाज्मा

- प्लाज्मा लगभग 40 प्रतिशत तक बढ़ जाता है।
- यह वृद्धि गर्भावस्था की पहली दो तिमाहियों में होती है।
- प्लाज्मा में वृद्धि वाहिकाओं में फैलाव, चयापचय में परिवर्तन, भ्रूण का विकास और मां के वजन में वृद्धि के कारण होती है।

प्लेटलेट

- प्लेटलेट की संख्या पूर्ण गर्भवती महिला में कुछ हो जाती है परन्तु यह संख्या सामान्य महिलाओं की प्लेटलेट संख्या के आसपास ही रहती है।
- रक्त के जमने की प्रवृत्ति गर्भावस्था की अवधि के साथ साथ बढ़ती जाती है यह अधिकतम प्रसव के समय होती है।
- प्लेटलेट का कार्य प्रसव के बाद रक्त को जमा देना होता है।

रक्त कोशिका

- लाल रक्त कोशिकायें गर्भावस्था की दूसरी तिमाही के आसपास बढ़ना आरंभ करती हैं और गर्भावस्था की तीसरी तिमाही तक इनकी संख्या अधिकतम हो जाती है।
- लाल कोशिकाओं की संख्या में वृद्धि के कारण गर्भावस्था में आयरन की पूर्ति में 30 प्रतिशत की वृद्धि होती है।
- सफेद कोशिकाओं की संख्या भी बढ़ती है पर यह वृद्धि गर्भ धारण के कारण होती है।

अभ्यास बिंदु :

रक्त की जांच के परिणामों का विश्लेषण करते समय आपको गर्भावस्था में होने वाले उपरोक्त परिवर्तनो को ध्यान में रखना चाहिये।

रक्त की कमी

रक्त की कमी गर्भावस्था में होने वाली एक आम समस्या है। रक्त की कमी के कारण स्त्रियाँ बीमार रहती हैं और उनकी मृत्यु भी हो सकती है। विश्व स्वास्थ्य संगठन के अनुसार किसी व्यक्ति में हीमोग्लोबीन की मात्रा 11 ग्रा/100 मि. ली. से कम होती है तो उसे रक्त की कमी होती है। रक्त की कमी को तीन स्तरों में बांटा गया है - साधारण (Moderate) रक्ताल्पता (हीमोग्लोबीन स्तर 7-10.9 ग्रा/100 मिली) ,गंभीर(Severe) रक्ताल्पता (4-6.9 ग्रा/100 मिली) और अति गंभीर(Very Severe) रक्ताल्पता (4 ग्रा/100 मिली से कम)।

रक्त की कमी से पीड़ित महिलाओं में गर्भावस्था के प्रारंभ में तो कोई परेशानी नहीं होती परन्तु जैसे जैसे गर्भ की अवधि बढ़ती जाती है वे थकान महसूस करने लगती हैं और उनके लिये सामान्य कामकाज करना भी कठिन होता जाता है। यदि गर्भावस्था के दौरान रक्त की कमी को दूर न किया गया तो प्रसव के समय थोड़ी सी रक्त हानि भी उनके लिये गंभीर हो जाती है जिससे महिला की मृत्यु भी हो सकती है।

रक्त की जांच करने का प्रशिक्षण आपको आधारभूत प्रशिक्षण के समय दिया गया होगा। आपके पास रक्त की जाँच हेतु आवश्यक उपकरण भी होंगे। सामान्य रूप से रक्त की कमी के निम्न लक्षण होते हैं -

रक्ताल्पता के लक्षण

- आंखों की झिल्लियों और नाखूनों में पीलापन
- थकावट और सुस्ती
- शक्तिहीनता
- गंभीर प्रकरणों में धड़कन

जिन महिलाओं में रक्त की कमी होती है उन्हें रक्त की कमी दूर करने के लिये आयरन की पूरक मात्रा दिया जाना जरूरी है। गर्भवती महिलाओं के रक्त की जाँच जितनी जल्दी हो सके उतनी जल्दी कर लेनी चाहिए और रक्त की कमी पाये जाने पर तत्काल आयरन की पूरक मात्रा देना शुरू कर देना चाहिए। रक्त की कमी और उनके परिणामों के बारे में महिला और उसके परिवार के सदस्यों को अवश्य बताना चाहिये और उन्हें रक्त की कमी दूर करने के लिये आवश्यक उपचार करने के लिये प्रेरित करना चाहिये। रक्त की कमी का निदान रक्ताल्पता के लक्षणों के आधार पर नहीं करना चाहिये। निदान के पूर्व रक्त की जाँच आवश्यक है। कभी कभी रक्त की कमी आयरन की कमी के कारण नहीं होती। ऐसी स्थिति में पूरक आयरन देने से रक्त की कमी दूर नहीं होगी। मलेरिया और पेट में कीड़ों के कारण भी रक्त की कमी हो जाती है। महिला में रक्त की कमी होने पर उससे मलेरिया के बारे में अवश्य पूछें और मलेरिया की जाँच करायें। साथ ही पेट के कीड़ों को मारने की दवा भी सभी गर्भवती महिलाओं को अवश्य देनी चाहिये।

महिला के स्वास्थ्य का सीधा संबंध महिला के भोजन से होता है। अच्छे भोजन का महिला के स्वास्थ्य और होने वाले शिशु पर निश्चित ही अच्छा प्रभाव पड़ता है।

गर्भवती महिला को दिन में कई बार भोजन करना चाहिए (क्यों)

विचार करें कि आप महिला को किस तरह अच्छा भोजन करने के लिये प्रोत्साहित कर सकती हैं जिससे कि जब वह अगली बार गर्भवती हो तो उसका स्वास्थ्य बेहतर रहे।

अभ्यास बिंदु :

अपर्याप्त भोजन के कारण होने वाली रक्त की कमी को पहचानने के लिये आवश्यक जांच जरूरी है। रक्त की कमी के विभिन्न कारणों के प्रति हमेशा सतर्क रहें।

प्रसवपूर्व परिचर्या

सुरक्षित प्रसव की दृष्टि से प्रसवपूर्व परिचर्या अत्यन्त महत्वपूर्ण है। प्रसव पूर्व परिचर्या से उन कारणों का पता लगता है जिनके कारण सामान्य गर्भावस्था होते हुए भी प्रसव के समय असामान्य स्थितियां उत्पन्न हो जाती हैं।

प्रसवपूर्व परिचर्या के दो पहलू हैं। पहला पहलू सामान्य जांच और प्रश्नों के माध्यम से गर्भवती महिला के स्वास्थ्य के बारे में जानकारी प्राप्त करना है। इस कार्य में आपको दक्ष होना चाहिये ताकि आप यह निर्णय ले सकें कि गर्भ सामान्य है या नहीं। यदि गर्भ असामान्य है तो महिला को रिफर कर देना चाहिये।

प्रसवपूर्व परिचर्या का दूसरा पक्ष गर्भवती महिला से सम्बन्धित है। आपको महिला को प्रोत्साहित करना चाहिये कि वह आपसे गर्भ, गर्भावस्था, प्रसव और शिशु की देखभाल से सम्बन्धित जानकारी प्राप्त करे और तदनुसार व्यवहार करे।

प्रसवपूर्व परिचर्या चिकित्सालय, क्लीनिक या गर्भवती महिला के घर पर की जा सकती है। चूंकि सुरक्षित प्रसव सुनिश्चित करने में प्रसव पूर्व परिचर्या अत्यन्त महत्वपूर्ण है अत: यह जरूरी है कि गर्भवती महिलाओं की शीघ्रताशीघ्र पहचान की जाय और प्रसवपूर्व परिचर्या प्रारम्भ की जाय। यहाँ पर यह महत्वपूर्ण है कि प्रथम परिचर्या महिला के घर पर भी की जा सकती है। तत्पश्चात् गर्भवती महिला को क्लीनिक या अस्पताल आने के लिये प्रेरित करना चाहिये ताकि उसकी सभी प्रकार की जांच की जा सके।

N O T E S

N O T E S

प्रसवपूर्व परिचर्या के प्रमुख बिन्दु निम्नानुसार हैं –

1. गर्भवती महिला की पहचान – यह महत्वपूर्ण है कि गर्भवती महिला की पहचान शीघ्रताशीघ्र की जाय।
2. गर्भवती महिला का पंजीकरण – गर्भवती महिला के पंजीकरण के समय महिला के प्रसव इतिहास के बारे में विस्तार से जानकारी प्राप्त करना चाहिये। सुरक्षित प्रसव की दृष्टि से यह महत्वपूर्ण है कि गर्भवती महिला का पंजीकरण गर्भ के प्रथम तीन माह में अवश्य हो जाय।
3. गर्भवती महिला से जब पहली बार सम्पर्क करें तब उसके रक्त की जांच अवश्य करें और देखें कि उसे खून की कमी तो नहीं है। यदि महिला में खून की कमी है तो उसे पूरक आयरन (IFA Tablet या सीरप) अवश्य दें।
4. प्रत्येक गर्भवती महिला को गर्भावस्था में खान-पान के बारे में सलाह अवश्य दें। खान पान का सीधा सम्बन्ध महिला के स्वास्थ्य से और होने वाले बच्चे के स्वास्थ्य से होता है। खान पान की सलाह का सबसे महत्वपूर्ण बिन्दु यह है कि गर्भवती महिला को भूखा नहीं रहना चाहिये और उसे नियमित अंतराल पर खाते रहना चाहिये।
5. गर्भवती महिला के खानपान के बारे में महिला के पति और परिवार के अन्य बुजुर्ग सदस्यों को भी नियमित रूप से सलाह दें।
6. गर्भवती महिला का वजन व ऊँचाई नापें जिसको कि आप महिला का बाडी मॉस इण्डेक्स (BMI) निकाल सकें। यदि महिला का बाडी मॉस इण्डेक्स 18 से कम है तो वह कुपोषित है। ऐसी महिलाओं के खान पान पर विशेष ध्यान दिये जाने की आवश्यकता है ताकि प्रसव सुरक्षित हो सके।
7. प्रथम भेंट में गर्भवती महिला को पर्याप्त समय दें और उसका विश्वास अर्जित करें। महिला को गर्भावस्था और प्रसव के लिये मानसिक रूप से तैयार करें।
8. गर्भवती महिला के पति और उसके परिजनों से चर्चा करें और प्रसव की तैयारी के बारे में बतायें। सुरक्षित प्रसव में महिला के परिवार की भूमिका अत्यन्त महत्वपूर्ण होती है ।
9. महिला के मूत्र की जाँच करें। मूत्र में प्रोटीन है तो महिला को प्रि-एक्सलेंप्सिया की सम्भावना बढ़ जाती है।
10. गर्भवती महिला से दूसरी भेंट प्रथम भेंट के कम से कम एक माह पश्चात की जानी चाहिये। दूसरी भेंट के लिये महिला को चिकित्सालय या क्लीनिक आने के लिये प्रेरित करना चाहिये ताकि उसका भलीभांति परीक्षण किया जा सके।
11. गर्भवती महिला से दूसरी बार भेंट में वे सभी जाँच करें जो प्रथम भेंट के समय की गयीं थी। इससे आपको गर्भवती महिला के स्वास्थ्य के बारे में अद्यतन जानकारी मिल सकेगी।
12. गर्भवती महिला के गर्भ की जाँच करें और देखें की शिशु की प्रगति संतोषजनक है कि नहीं। शिशु की प्रगति की जाँच गर्भवती महिला के पेट को ऊपर से टटोलकर की जा सकती है। इस जाँच की विधि आगे बतायी गयी है।
13. यह देखें कि महिला में कोई खतरे के लक्षण तो नहीं हैं। यदि महिला में किसी प्रकार के खतरे के लक्षण दिखलायी देते हैं तो उसे रिफर करें।
14. महिला की तीसरी जाँच दूसरी जाँच के कम से कम एक माह के पश्चात करें। तीसरी जाँच में भी पहली और दूसरी जाँच में किये गये परीक्षणों को दोहरायें। साथ ही
    - प्रसव हेतु आवश्यक तैयारियों के बारे में महिला को परामर्श दें।
    - नवजात शिशु की देखभाल के बारे में बतायें।
    - स्तनपान के बारे में सलाह दें। स्तनपान शिशु जन्म के तुरन्त पश्चात प्रारम्भ किया जाना चाहिये।
    - प्रसव पश्चात परिचर्या की जानकारी दें। प्रसव पश्चात माँ और बच्चे के स्वास्थ्य के संदर्भ में परिवार नियोजन के महत्व को समझायें।

पेट के ऊपर से टटोल कर जांच (Palpation)

पेट को ऊपर से टटोल कर जांच करना एक तकनीकी कौशल है। इस जाँच में कुशल होने में कुछ समय लगता है। यह जाँच गर्भ में शिशु के प्रस्तुतिकरण, उसकी स्थिति और शिशु की वृद्धि जानने के लिये अत्यंत महत्वपूर्ण है। इस तकनीक से प्रसव के समय आने वाली किसी जटिलता की संभावना का पता भी चल सकता है।

पेट के ऊपर से टटोल कर जांच करने के लिये निम्न उपकरणों की आवश्यकता होती है।

- गर्भाशय की ऊंचाई को नापने का फीता (**Measuring Tape**)
- फीटल स्टेथोस्कोप (**Fetal Stethoscope**)

इस कौशल को सीखने से पहले कई पक्षों को समझना होगा

- प्रेक्षण **(Observation)**
- टटोल कर जांच करना **(Palpation)**
- स्टेथोस्कोप से सुनना **(Auscultation)**

जाँच करने से पहले महिला को कहें कि वह मूत्र त्याग करे। मूत्राशय भरा होने पर यदि आप शिशु की स्थिति को जांचना चाहेंगे तो महिला को भरे मूत्राशय के दबने के कारण तकलीफ होगी। महिला को जांच टेबल पर लिटायें। उसे पूरी तरह चित्त लेटने के लिये न कहें क्योंकि इससे उसे तकलीफ होगी और उसे चक्कर भी आ सकता है।

अभ्यास बिंदु

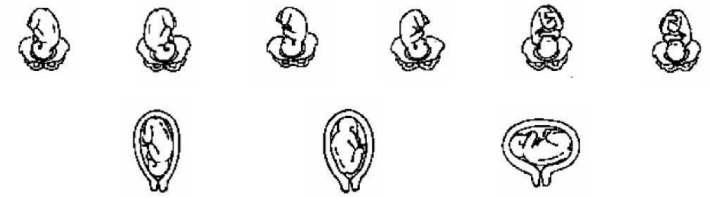
महिला की जाँच के पहले और बाद में अपने हाथ अवश्य धोऐं (हाथ धोने की विधि आगे बताई गई है)

जाँच करते समय निम्न बातों का ध्यान रखें

पहली बार गर्भवती होने वाली महिला के पेट का आकार उन महिलाओं के पेट के आकार से अलग होता है जो पहले भी गर्भवती हो चुकी हैं। पेट में चाकू के घाव के निशानों से पहले की गई शल्य चिकित्सा के बारे में पता लग सकता है। स्त्री रोगों के कारण जो शल्य चिकित्सा होती है उससे जो घाव के निशान बनते हैं वे गर्भाशय की वृद्धि के साथ खिंचते हैं और उनमें दर्द हो सकता है। पेट के निचले हिस्से में बने स्ट्रेच मार्क या निशान देखने से पता चल सकता है कि महिला पहले भी गर्भवती हो चुकी है।

गर्भवती महिला के पेट को टटोल कर जांच करने से शिशु की वृद्धि का पता चलता है। सिंफाइसिस प्यूबिस और गर्भाशय के फंडस के बीच की ऊंचाई फीते से नापें। आप फंडस को टटोलने का कार्य हाथों से जोर से दबाकर न करें। ऐसा करने से शिशु श्रोणि में चला जाएगा और आपकी नाप गलत हो जाएगी। सामान्य रूप से एक सप्ताह में सिंफाइसिस प्यूबिस और फंड्स के बीच की ऊँचाई में एक से.मी. की वृद्धि होती है। यदि यह वृद्धि बहुत कम या बहुत ज्यादा है तो महिला को चिकित्सक के पास राय के लिये भेजें।

गर्भाशय को एक ओर से एक हाथ से टटोल कर देखें और दूसरी तरफ से दूसरे हाथ से सहारा दें। ऐसा करने से आपको या तो शिशु की पीठ अनुभव होगी या फिर उसके पांव या हाथ। शिशु की पीठ की तरफ का हिस्सा कड़ा और चिकना महसूस होता है। यह स्थिति शिशु की हृदय के धड़कन सुनने में सहायक होती है। पेट को टटोलने से यह भी पता चलता है कि शिशु गर्भाशय में सीधा है या आड़ा। यदि शिशु 36 सप्ताह की गर्भावस्था पर या बाद मे भी आड़ा है तो गर्भवती महिला को रिफर करें क्योंकि यह अवरुद्ध प्रसव (**Obstruction in Labour**) का प्रकरण हो सकता है।

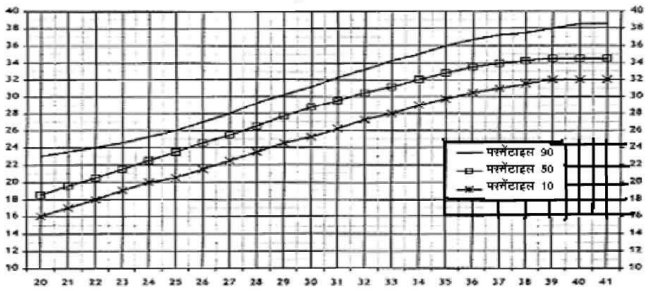


महिला के पेट को टटोल कर आप यह भी पता कर सकते हैं कि शिशु का कौन सा भाग श्रोणि की तरफ प्रस्तुत (**Presenting Part**) है। महिला को पीठ के बल लेटने को कहें, उसके दोनों घुटने मोड़ कर रखें और उसे पेट की पेशियां ढीली रखने को कहें। तत्पश्चात दोनों हाथों को सिंफाइसिस प्यूबिस के ऊपर इस प्रकार रखें कि हाथों की उंगलियां सिंफाइसिस प्यूबिस की ओर हों। उंगलियों को पेट में धीमे धीमे गड़ायें। यदि शिशु का प्रस्तुत भाग सिर होगा तो यह गोल और कड़ा होगा पर यदि प्रस्तुत भाग नितंब (**Breach**) होंगे तो वे अनुभव करने में अपेक्षाकृत मुलायम होंगे।

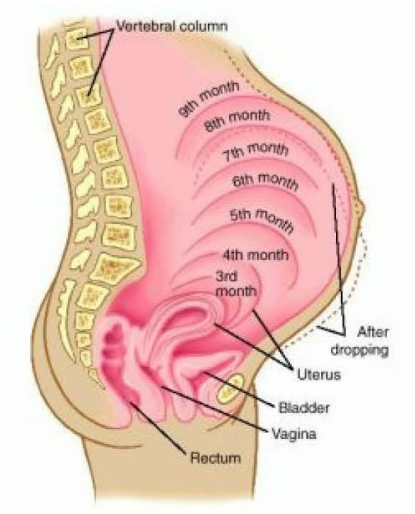
यदि शिशु के प्रस्तुतिकरण के बारे में आपको कुछ अनिश्चितता लगती है तो महिला से पूछें कि वह शिशु का हिलना डुलना कहां तक महसूस करती है। इससे आपको यह संकेत मिलेगा कि शिशु के पांव श्रोणि के ऊपर हैं या फंडस को छू रहे हैं। यदि आप शिशु के सिर का कड़ा भाग मां की पसलियों के नीचे अनुभव करते हैं तो यह नितंब प्रस्तुतिकरण (**Breach Presentation**) है। यदि महिला की गर्भावस्था पूर्ण अवधि की है और नितम्ब प्रस्तुतिकरण है तो उसे रिफर करना आवश्यक है।

आगे दिये गये चार्ट में आप फंडस की नाप नियमित रूप से लिखें। इससे आपको शिशु की सामान्य और प्राकृतिक वृद्धि जानने में मदद मिलेगी।

गर्भावस्था की अवधि के अनुसार गर्भाशय की ऊँचाई (सेमी में)



गर्भावस्था की अवधि



स्टेथोस्कोप से शिशु के हृदय की धड़कन सुनना (Auscultation)

शिशु के हृदय की धड़कनें सुनाई देने का मतलब यह है कि शिशु स्वस्थ है। यदि धड़कनें नहीं सुनाई दे रहीं हैं तो पहले यह सुनिश्चित करें कि आप धड़कन सुनने की कोशिश सही जगह पर कर रहे हैं। फीटल स्टेथोस्कोप को पेट के ऊपर उस जगह पर रखना चाहिये जिसके नीचे शिशु का कंधा है। आप टटोल कर कंधे की स्थिति पता कर सकते हैं। शिशु की धड़कनें सुनते समय महिला की नाड़ी (**Pulse**) अवश्य गिनें। शिशु के हृदय की गति 110 से 160 प्रति मिनट के बीच होनी चाहिये। यदि आप शिशु के हृदय की घड़कन नहीं सुन पा रहे हैं तो महिला को रिफर करें। यदि शिशु के हृदय की घड़कन महिला के हृदय की घड़कन से धीमी है तो सम्भव है कि भ्रूण संकट (**Fetal Distress**) की स्थिति हो। इस स्थिति में आप महिला को तत्काल रिफर करें ताकि आपरेशन कर शिशु को बचाया जा सके।

अभ्यास बिंदु

यह महत्वपूर्ण है कि आप किस परिस्थिति में महिला को कहाँ रिफर करें। आप कैसे सुनिश्चित करेंगे कि महिला उपचार हेतु सही जगह जा रही है।

सम्प्रेषण (Communication)

प्रसव पूर्व परिचर्या में गर्भवती महिला और उसके परिजनों के साथ निरंतर बातचीत करना अत्यन्त प्रभावकारी होता है। इस संवाद से आप महिला और उसके परिजनों का विश्वास अर्जित कर सकते हैं। इसके लिये आपको सम्प्रेषण कौशल विकसित करने की आवश्यकता है।

सम्प्रेषण कला

सम्प्रेषण कला का मुख्य उद्देश्य है कि आप अपनी बातचीत की शैली से सामने वाले व्यक्ति को कितना प्रभावित कर सकते हैं। आपका बातचीत का तरीका ऐसा होना चाहिये कि सामने वाला व्यक्ति आपकी बातों की गम्भीरता को समझे और आपकी सलाह पर विश्वास करे।

गर्भवती महिला और उसके परिवारजनों से बात करते समय आपको निम्न महत्वपूर्ण बातों का विशेष ध्यान रखना चाहिये

- गर्भवती महिला और उसके परिजनों से सरल अपनत्व से भरी भाषा का प्रयोग करें। कठिन अथवा तकनीकी भाषा का प्रयोग न करें।
- आप अपनी बात संक्षिप्त में परन्तु स्पष्ट रूप से करें। गोलमोल भाषा का प्रयोग न करें।
- गर्भावस्था व प्रसव से सम्बन्धित प्रचलित परम्पराओं का सीधे विरोध न करें। इन परम्पराओं और सुरक्षित प्रसव हेतु आवश्यक उपायों के बीच सामन्जस्य स्थापित करने का प्रयास करें।
- गर्भवती महिला और उसके परिजनों की बातें ध्यान से और धैर्य पूर्वक सुनें। उनको अपनी बात कहने का पूरा अवसर दें। महत्वपूर्ण यह है कि गर्भवती महिला और उसके परिजन क्या कहते हैं और उनके प्रश्नों का आप कितना समाधान कर पाते है।
- अपने विचारों और बातों को गर्भवती महिला और उनके परिजनों पर थोपने का प्रयास न करें। उनको विश्वास में लेकर ही अपनी बात कहें।
- गर्भवती महिला और उनके परिजनों को पूरा सम्मान दें। यदि आप उनको सम्मान देंगे तो वे भी आपका आदर करेंगे।
- गर्भवती महिला और उनके परिजनों को किसी प्रकार के भ्रम में न रखें। उनसे सदैव स्पष्ट बात करें।

सम्प्रेषण कला का एक अत्यन्त महत्वपूर्ण अंग प्रश्न पूछना है। प्रश्न पूछने के प्रमुख रूप से दो तरीके होते हैं

- पहले तरीके में प्रश्न इस प्रकार पूछे जाते हैं कि गर्भवती महिला या उनके परिजन विस्तार से अपनी बात कह सकें।

इस प्रकार के प्रश्न विस्तृत उत्तरापेक्षी प्रश्न कहलाते हैं।

- दूसरे तरीके में प्रश्न इस प्रकार पूछे जाते हैं कि गर्भवती महिला या उनके परिजन केवल में ''हाँ'' या ''न'' में ही उत्तर दें। इस प्रकार के प्रश्न संक्षिप्त उत्तरापेक्षी प्रश्न कहलाते हैं।

आपको गर्भवती महिला से सामान्य रूप में विस्तृत उत्तरापेक्षी प्रश्न पूछने चाहिये। इस प्रकार के प्रश्नों से आपके और गर्भवती महिला के बीच समझ और विश्वास पैदा होता है।

केवल विशेष परिस्थितियों में ही गर्भवती महिला और उनके परजनों से हाँ या न में बात करें।

अच्छे संप्रेषण का मूलभूत सिद्धान्त अच्छी तहजीब है। गर्भवती महिला और उनके परिजनों के साथ अच्छे संबंध रखने के लिये निम्न बातों का ध्यान रखें :-

- स्पष्ट रूप से अपना परिचय दें और बतायें कि आप क्या करती हैं।
- गर्भवती महिला और उसके परिजनों को रिश्ते की भाषा जैसे दीदी, भाई साहब, दादा, दादी इत्यादि से सम्बोधित करें।
- वार्तालाप को सामान्य बनाने का प्रयास करें।
- यह सुनिश्चित करें कि गर्भवती महिला और उसके परिजन यह समझ गये हैं कि उन्हें क्या करना है, कहाँ जाना है और वहाँ क्या मिलेगा।

1. यदि आप स्वयं गर्भवती होतीं तो आप स्वास्थ कार्यकर्ता में किन गुणों को देखना चाहती हैं, उन गुणों पर विचार करें जो आप उसमें देखना चाहती हैं।
2. क्या आप अपनी जरुरतें पूरी कर लेती हैं?
3. आपके विचार से अच्छे संप्रेषण के अवरोधक क्या हैं?
4. आप इनमें से कुछ अवरोधकों को कैसे दूर कर सकते हैं जिससे कि आपका संप्रेषण और प्रभावी हो सके?

गैर संवादी सम्प्रेषण

गैर संवादी संप्रेषण का अर्थ में आँखों-आँखों में बात करने से है। आप गर्भवती महिला की आँखों से और उसकी भाव भंगिमा से उसके बारे में जान सकते हैं। इसी प्रकार आपकी भाव भंगिमा आपके महिला के प्रति व्यवहार को दिखलाती है। गर्भवती महिला के प्रति आपकी भाव भंगिमा सहयोग की होना चाहिए। आपकी आँखों में अपनत्व झलकना चाहिये। आपके हावभाव इस प्रकार होने चाहिये कि महिलायें आप पर विश्वास कर सकें।

गर्भवती महिला की आँखों में झांकें। उसे समझने का प्रयास करें। परम्परागत परिवेश में महिलायें आँखों-आँखों में बहुत कुछ कह जाती हैं। आंखों से कही बातों को समझें। इससे आप गर्भवती महिला का विश्वास जीत सकेंगी।

- ऐसी स्थिति पर विचार करें जहां गैर संवादी संप्रेषण और संवादी संप्रेषण से मिले संदेशों में भिन्नता है।
- आपकी ऐसी स्थिति में क्या प्रतिक्रिया होगी ?

- क्या आप ऐसी स्थिति को बेहतर तरीके से निपटा सकते थे ?
- आप अपने संप्रेषण कौशल को किस तरह बेहतर बना सकते हैं।

अभ्यास बिंदु

संप्रेषण गर्भवती महिला से सम्बन्धित अनुभवों में वृद्धि के साथ साथ आपको उच्च कोटि की सेवाऐं देने योग्य बना सकता है।

हाथों की स्वच्छता

गर्भवती महिला की जांच करते समय तथा प्रसव के समय या प्रसव पश्चात् बच्चे की देखभाल करते समय हाथों की स्वच्छता बहुत महत्वपूर्ण है। प्रसव से सम्बन्धित सभी गतिविधियों में हाथों को साफ रखने से महिला और बच्चे का जीवन बचाया जा सकता है। संक्रमण और मृत्यु की सम्भावना कम करने में हाथ की स्वच्छता की महत्ता की बात सबसे पहले 19 वीं शताब्दी के एक स्त्री रोग विशेषज्ञ द्वारा की गयी थी। हाथों को स्वच्छ रखना संक्रमण को रोकने की सबसे पहली और सबसे प्रभावी विधि है । यह एक आसान और सुरक्षित तरीका है। हाथ स्वच्छ रखने के लिये हाथों को विधिपूर्वक साफ करना जरूरी है। इस विधि का नियमित रूप से अभ्यास किया जाना चाहिये।

हाथ साफ करने के लिये आपको निम्न वस्तुओं की आवश्यकता होगी –

पानी

साबुन

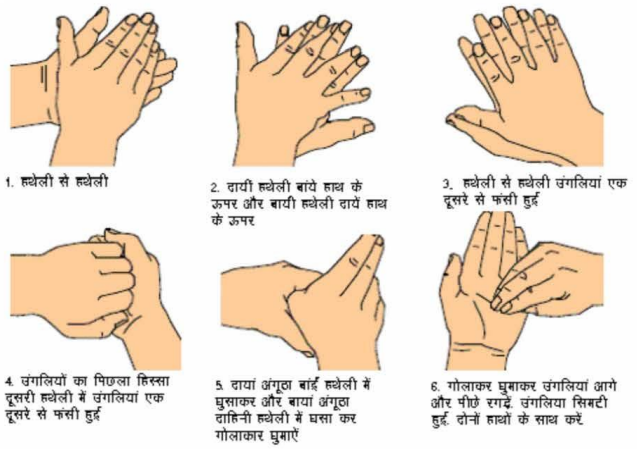
तौलिया

साबुन और साफ तौलिये को सदैव अपने बैग में रखें ताकि आप प्रसव से सम्बन्धित कोई भी सेवा देने के पूर्व हाथ अवश्य धो सकें।

हाथ धोने के लिये निम्न विधि का प्रयाग करें

- घड़ी व गहने इत्यादि उतार दें।
- परिवार के किसी सदस्य से कहें कि वह आपके हाथों पर पानी डालें।
- हाथों को गीला कर साबुन लगायें।
- झाग बनाने के लिये पर्याप्त साबुन का प्रयोग करें।
- हाथों और कलाइयों को नीचे की तरफ रख कर उनकी सभी खुली सतहों को चित्र के अनुसार जोर से रगड़ें :

1. हथेली से हथेली, दायीं हथेली से बांये हाथ के पिछली तरफ और और बांयीं हथेली से दायें हाथ के पीछे की तरफ रगड़ें।
2. हथेली से हथेली उंगलियां बीच में फंसी हुई पहले हथेलियां रगड़ें फिर उंगलियां रगड़ें।
3. एक हाथ की उंगलियां को दूसरे हाथ की हथेली से रगड़ें।
4. उंगलियां एक दूसरे से अटकी हुई उंगलियों के पीछे का हिस्सा हथेलियों से रगड़ें फिर दूसरे हाथ के साथ ऐसा ही करें।



5. हथेली के अंदर अंगूठा घुसा कर सीधे और उलटे घुमायें।

6. हथेली पर दूसरे हाथ की उंगलियों को एक जुट कर आगे पीछे रगड़ें। ऐसा दोनों हाथों में करें।

याद रखें गर्भावस्था, प्रसव और प्रसव पश्चात महिला और बच्चे को किसी भी प्रकार के संक्रमण से रोकने के लिये आपके हाथों की स्वच्छता अत्यन्त महत्वपूर्ण है। किसी भी प्रकार की प्रसव सम्बन्धी सेवा देने से पूर्व उपरोक्त विधि के अनुसार अपने हाथ अवश्य साफ करें।

अभिलेखन

आपके द्वारा दी गयी सभी प्रसव सम्बन्धी सेवाओं का पूरा लेखा जोखा रखना आपके लिये बहुत जरूरी है। इस जानकारी से आप न केवल गर्भवती महिला की भली भांति देखभाल कर सकती हैं वरन आप अपनी सेवाओं की गुणवत्ता भी बनाये रख सकती हैं। आपके द्वारा रखी गयी जानकारी आपके ज्ञान और अनुभव को भी बढ़ाती है।

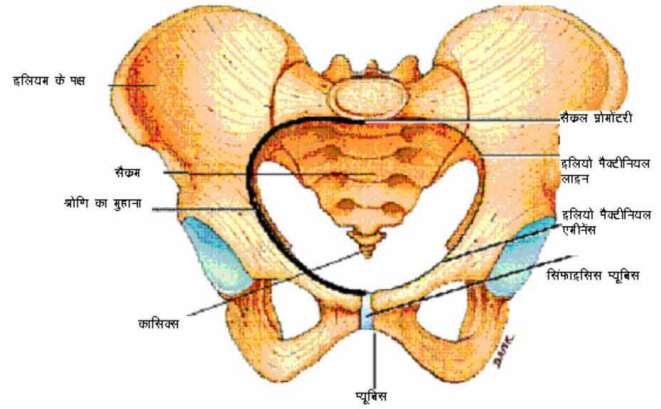
आपके द्वारा दी जाने वाली प्रसव से सम्बन्धित सेवाओं का जानकारी रखने के लिये एक पत्रक तैयार किया गया है जो कि इस कार्यपुस्तिका के साथ संलग्न है। कृपया आपके द्वारा दी गयी सभी सेवाओं का विवरण इस पत्रक में नियमित रूप से भरें।

याद रखें

- अच्छा अभिलेखन अच्छी प्रैक्टिस का परिचायक होता है।
- अभिलेखन अच्छे संप्रेषण का कार्य भी करता है।
- अभिलेख में पूरी सूचनाऐं होने से पूर्व परिचर्या जारी रह सकती है।
- क्लीनिकल परिचर्या में उच्च स्तर का संवर्धन करता है।
- दी गई परिचर्या का व्यावसायिक दृष्टिकोण से पुनरावलोकन किया जा सकता है जिससे कि अच्छी परिचर्या में आ रही कठिनाईयों की पहचान कर उनको दूर किया जा सकता है और परिचर्या के अच्छे प्रयासों को लोगों की निगाह में लाकर उनको उदाहरण की तरह भी प्रस्तुत किया जा सकता है।

भाग 1 के उत्तर

श्रोणि पृष्ठ 5 के उत्तर



अभ्यास बिंदु : संभव हैं आपको ज्ञात हो कि उन महिलाओं में जिनका यह पहला बच्चा है भ्रूण अग्र स्थिति (Anterior) न हो कर पश्च स्थिति (Posterior) हो और भ्रूण का सिर अभी तक इंगेज न हुआ हो । प्रसव के दौरान सिर के श्रोणि में उतरने की गतिविधि की निगरानी किया जाना आवश्यक है क्योंकि छोटी या सकरी श्रोणियों में अवरोध की स्थिति बन सकती है।

पृष्ठ 12 के उत्तर

आंवल (Placenta) के कार्य

1. हारमोन उत्पादन
2. द्रव्य स्थानांतरण – मां और भ्रूण के बीच
3. श्वसन – गैसों की अदला बदली
4. पोषण – शिशु को पोषक पदार्थों का उनके सबसे सादे रुप में स्थानांतरण
5. उत्सर्जन – त्याज्य पदार्थों की निकासी
6. सुरक्षा – कुछ संक्रमणों के विरुद्ध अवरोधक

पृष्ठ 14 के उत्तर(योनि के कार्य)

1. मासिक रक्त के निकलने के लिये रास्ता
2. यौन क्रिया
3. शिशु जन्म

पृष्ठ 15 के उत्तर

दिन 1-5 कार्पस ल्यूटियम विखंडित होता है

प्रोजेस्टीरोन का स्तर कम होता है

मासिक रक्त स्त्राव

रक्त हानि 0- 80 मि.ली.

दिन 6-14 इस्ट्रोजन का स्तर बढ़ता है

मायोमीट्रियम की परत मोटी होती है

रक्त वाहिकाओं की पुनः वृद्धि होती है

ग्लाइकोजन संग्रहित होता है

ओव्हेल्यूशन होता है

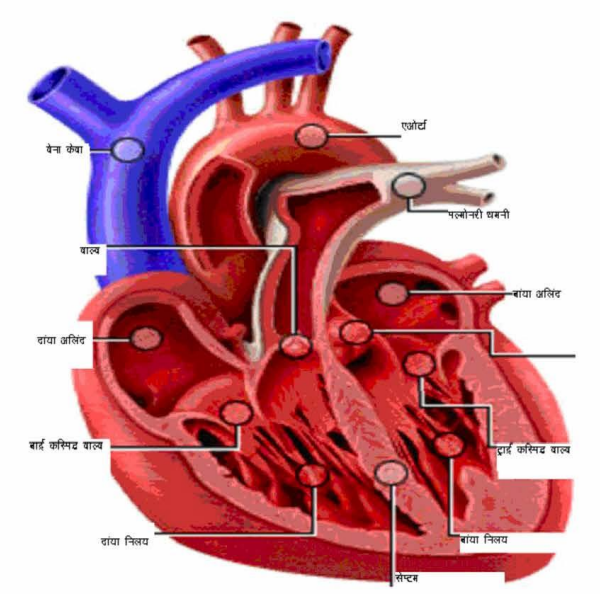
दिन 15-28 एंडोमीट्रियम रक्तवाहिका मय हो जाती है

धमनियां घुमावदार हो जाती हैं

एंडोमीट्रियम और मोटी हो जाती है

एंडोमीट्रियम तहदार या परत दार हो जाती है और आरोपण के लिये तैयार होती है

पृष्ठ 16 का उत्तर



पृष्ठ 17 के उत्तर

1 रक्त को शरीर में पहुंचाना

2 4 कक्ष

3 शिरायें (veins)

4 बाई कस्पिड

5 फेफड़ों की ओर

6 आक्सीजन रहित (de-oxygenated)

7 पल्मोनरी धमनियां

8 ट्राई कस्पिड

9 द बाडी थ्रू द एओर्टा

10 रक्तचाप माप कर

11 डॉयस्टोलिक एवं सिस्टोलिक

12 इसकी एक सीमा है 60/100 से 90/120 पर यह उन महिलाओं के लिये है जो गर्भवती नहीं हैं। गर्भवती महिलाओं का रक्तचाप गर्भावस्था में बदलता रहता है।

भाग - 2 : सामान्य प्रसव

1. प्रसव के विभिन्न चरण और उनकी कार्यकी
2. प्रसव परिचर्या और प्रबन्धन
3. सामाजिक अवलम्बन
4. क्लीनिकल निर्णय लेना

कार्य-पुस्तिका के इस भाग को पूरा करने पर आप

- प्रसव के विभिन्न चरणों को परभाषित कर सकेंगे।
- प्रसव के विभिन्न चरणों की कार्यकी का वर्णन कर सकेंगे।
- प्रसव परिचर्या और प्रबन्धन का कौशल विकसित कर सकेंगे।
- प्रसव के समय सामाजिक अवलम्बन की महत्ता पर प्रकाश डाल सकेंगे।
- प्रसव से सम्बन्धित क्लीनिकल निर्णय ले सकेंगे।
- पार्टोग्राफ का उपयोग कर सकेंगे।

सामान्य प्रसव के चरण

सामान्य प्रसव की अवधि को मोटे तौर पर तीन चरणों में बाँटा जा सकता है।

प्रसव का पहला चरण

प्रसव का पहला चरण गर्भाशय के संकुचन से प्रारम्भ होता है। प्रसव प्रक्रिया प्रारम्भ होने पर यह संकुचन कमजोर और अनियमित होता है। प्रसव के प्रथम चरण के आरम्भ में यह संकुचन 30 सेकंड के आसपास के होते हैं जो समय के साथ बढ़ते चले जाते हैं। गर्भाशय का संकुचन प्रारम्भ होना यह दर्शाता है कि प्रसव प्रक्रिया प्रारम्भ हो गयी है। इस संकुचन के कारण सर्विक्स फैलने लगती है।

- सर्विक्स की लम्बाई कम होने लगती है। प्रथम बार गर्भवती महिलाओं में समान्यत: सर्विक्स की लम्बाई कम होना सर्विक्स के फैलने के पहले प्रारम्भ होता है। एक बार से अधिक गर्भवती महिलाओं में यह सर्विक्स के फैलने के साथ-साथ होता है।
- प्रसव प्रक्रिया प्रारम्भ होने पर सर्विक्स की गठन बदल जाती है। गर्भावस्था में सर्विक्स संकुचित रहती है जिसके कारण शिशु समय से पहले प्रसवित नहीं हो पाता। प्रसव प्रक्रिया प्रारम्भ होने पर सर्विक्स के तंतु कोमल होने लगते हैं, सर्विक्स की लम्बाई कम होने लगती है और सर्विक्स फैलने लगती है ताकि शिशु जन्म ले सके।

प्रसव का दूसरा चरण -

प्रसव के दूसरे चरण में सर्विक्स के पूरे फैलने से लेकर शिशु के जन्म तक की घटनायें आती हैं। प्रसव के इस चरण में शिशु सर्विक्स से गुजरता है। इस अवधि में महिला को जोर लगाकर शिशु को नीचे ढकेलने की इच्छा होती है। प्रसव के इस चरण में शिशु एक यात्री होता है।

प्रसव का तीसरा चरण -

प्रसव के तीसरे और अंतिम चरण में वे घटनाएं आती हैं जो शिशु जन्म के पश्चात होती है। इस चरण में खतरों की सम्भावना सबसे अधिक होती है। इन खतरों का यदि समय रहते समुचित प्रबन्धन नहीं किया जाता है तो महिला की मृत्यु भी हो सकती है।

प्रसव की प्रक्रिया प्रारम्भ होते समय यह अनुमान करना कि प्रसव की अवधि कितनी होगी, सम्भव नहीं है। प्रसव की अवधि कई परिस्थितियों पर निर्भर करती है। इसमें महिला की मानसिक स्थिति एवं शारीरिक अवस्था अत्यन्त महत्वपूर्ण है। इसके अतिरिक्त महिला की गर्भ संख्या और गर्भ में शिशु की स्थिति भी प्रसव की अवधि को प्रभावित करती है।

प्रसव परिचर्या में प्रसव की अवधि महत्वपूर्ण नहीं है परन्तु प्रसव की प्रगति अत्यन्त महत्वपूर्ण है। इसी कारण से प्रसव की कार्यकी में मुख्य रूप से प्रसव की प्रगति की चर्चा की गयी है।

प्रसव के प्रथम चरण की कार्यकी

प्रसव के प्रथम चरण की कार्यकी को समझने से आप यह अनुमान कर सकेंगे कि प्रसव की प्रगति सामान्य है अथवा नहीं।

प्रसव प्रक्रिया के प्रथम चरण में गर्भाशय की पेशियों में नियमित लयबद्ध संकुचन प्रारम्भ हो जाते हैं जो गर्भाशय से आरंभ होकर सर्विक्स के पूरी तरह फैलने तक चलते रहते हैं।

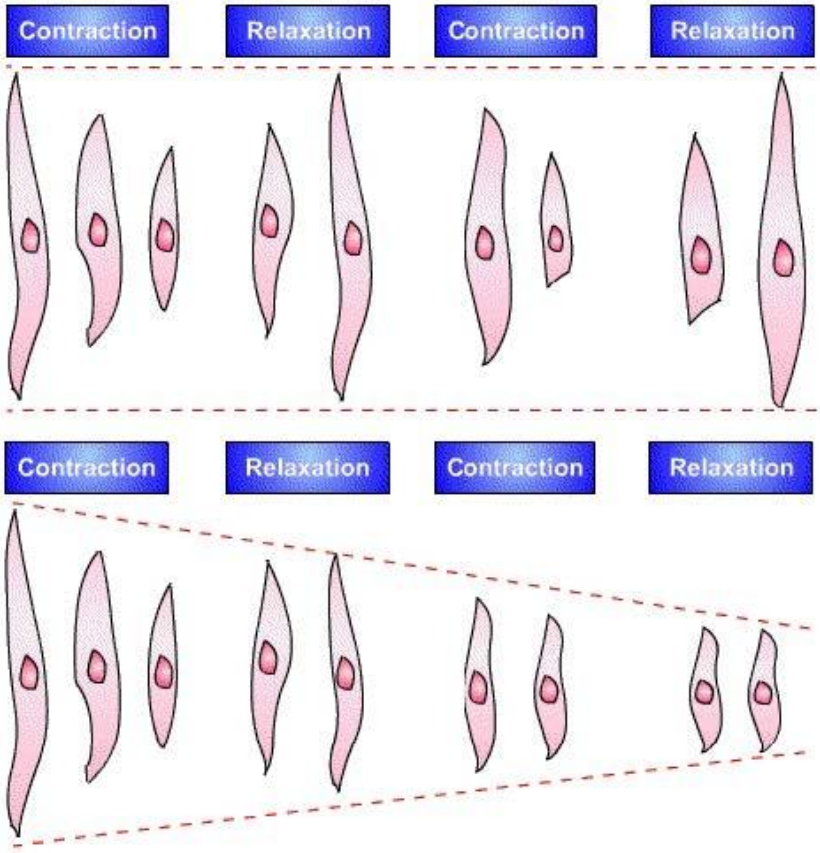
प्रसव के प्रथम चरण के आरंभ होने के संकेत

- जब सर्विक्स का 'इफेसमेंट' आरंभ होता है तो उस समय म्यूकस का एक गुच्छा या प्लग तथा थोड़ा सा रक्त भी निकलता है इसे ''शो'' कहा जाता है।

- प्रसव की प्रगति के साथ साथ नियमित और लयबद्ध संकुचन का समय और तीव्रता भी बढ़ने लगती है।
- कभी कभी एकदम द्रव का परनाला सा बह निकलता है। यह झिल्लियों के फटने के कारण होता है। यह अधिकतर प्रसव के प्रथम चरण के अंत में होता है।

प्रसव के प्रारम्भ होने पर सर्विक्स की लंबाई कम होने लगती है इसे इफेसमेंट कहते हैं।

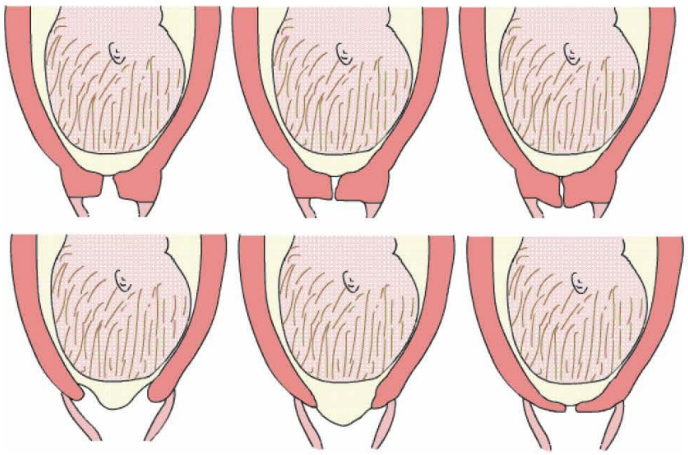
प्रसव के प्रथम चरण की आरंभिक गतिविधि के रूप में गर्भाशय में 30 सेकेंड के अन्तर से संकुचन होते हैं जो कमजोर व अनियमित होते हैं। इन संकुचन के कारण दर्द होता है जो यह दर्शाता है कि प्रसव प्रक्रिया प्रारम्भ हो गयी है। ये संकुचन प्रसव की प्रगति के साथ तीव्र और नियमित हो जाते हैं। प्रत्येक संकुचन फंडस में कार्नुआ (जहां कि फैलोपियन ट्यूब गर्भाशय में प्रवेश करती हैं) पर आरंभ होता है और नीचे की तरफ गर्भाशय के निचले हिस्से (Lower Segment) तक पहुंचता है। संकुचनों की तीव्रता फंडस पर सबसे तेज और गर्भाशय के निचले भाग में सबसे कमजोर होती है। संकुचनों की इस अवस्था को फंडल डॉमिनेंस कहते हैं। फंडस का ऊपरी और निचला हिस्सा जब सर्विक्स को फैलाने के लिये साथ साथ काम करता है तो इसे पोलैरिटी कहते हैं। पोलैरिटी पेशियों के संकुचन और संकुचन के कारण आकार में कम हो जाने से होती है। इस अद्भुत गुण के कारण सर्विक्स की पेशियों के तंतु, निचले भाग (Lower Segment) में पहुंच जाते हैं और इंटरनल और एक्सटर्नल ऑस को शिशु के निकलने के लिये खोल देते हैं। इन प्रक्रियों का नियमन ऑक्सीटोसिन नाम के हारमोन व प्रोस्टाग्लैंडिन के द्वारा होता है।



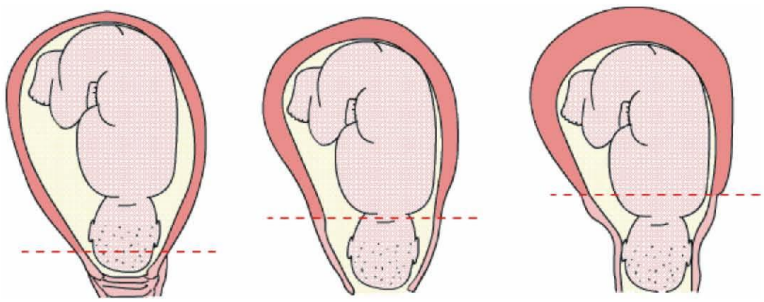
सर्विक्स के फैलने के अन्य कारण भी होते हैं। संकुचन का दबाव शिशु के चारों तरफ लिपटी और एम्नियॉटिक द्रव से भरी झिल्लियों को नीचे की तरफ ढकेलता है जिससे सर्वाइकल ऑस और अधिक खुलता जाता है और सर्विक्स के सामने एक पूरी तरफ फिट द्रव भरा थैला बन जाता है। यह द्रव भरा थैला शिशु के प्रस्तुतिकरण अंग के सामने होता है। प्रत्येक संकुचन में शिशु का सिर श्रोणि में नीचे की तरफ धंसता जाता है और एक अवरोधक प्लग का कार्य करता है। शिशु के प्रस्तुतिकरण भाग के आगे होने के कारण द्रव के थैले को फोरवाटर्स कहा जाता है और बाकी का द्रव शिशु के प्रस्तुतिकरण भाग के पीछे होने के कारण हाइंड वाटर्स कहलाता है।

एम्नियाटिक द्रव संकुचन के दबाव को पूरे गर्भाशय के ऊपर बांट देता है और इस दबाव को शिशु के ऊपर नहीं पड़ने देता। यदि झिल्लियां फट जाती है तो द्रव बाहर निकल जाता है और संकुचनों का पूरा दबाव शिशु के ऊपर केंद्रित हो जाता है। यह देखा गया है कि स्वास्थ्य कार्यकर्ता प्रसव की अवधि को कम करने के लिये झिल्लियों को फाड़ देते हैं। यह एक गलत तरीका है और इससे मां और शिशु को संक्रमण का जोखिम हो सकता है।

प्रसव के प्रथम चरण की दो अवस्थाऐं होती हैं ।



- **गुप्त अवस्था** : यह पहली त्वरित अवस्था है इस समय सर्विक्स बहुत ही कम लगभग तीन या चार से.मी. ही फैलती है।
- **सक्रिय अवस्था** : प्रथम चरण की यह वह अवस्था है जिसके अंतर्गत सर्विक्स पूरी तरह फैल जाती है।



गर्भाशय की पेशियों के संकुचन और उनके आकार में कम होने के कारण शिशु का प्रस्तुतिकरण भाग नीचे की ओर ढकेला जाता है जिससे सर्विक्स को और फैलने में मदद मिलती है।

ऊपर बताई गई कार्यकी पर विचार करते हुए बताऐं कि

- ❖ प्रसव परिचर्या के दौरान आपको प्रथमगर्भा और बहुगर्भा महिलाओं में क्या अंतर मिले ?
- ❖ क्या उनके व्यवहार में कोई समानता भी मिली ?

प्रसव के दूसरे चरण की कार्यकी

प्रसव के प्रथम चरण के पूरा होने और दूसरे चरण के प्रारंभ होने के बीच में एक छोटी सी विश्राम की अवधि भी हो सकती है।

प्रिज़म्पटिव संकेत

- शिशु को बाहर निकालने के लिये गर्भाशय का संकुचन : जोर लगाने या ढकेलने की इच्छा हो सकती है यदि सर्विक्स के पूरे फैलने के पहले शिशु की पोस्टीरियर पोजीशन हो।
- गुदा द्वार का फैलना और उसमें छिद्र दिखना : सर्विक्स के पूरे फैलने के पहले जोर लगाने से ऐसा हो सकता है।
- भग में रक्ताभ सूजन आना : सर्विक्स के पूरे फैलने के पहले जोर लगाने से ऐसा हो सकता है।
- प्रस्तुतिकरण भाग दिख रहा हो : अत्याधिक मोल्डिंग या कैपुट सक्सीडेनियम या अपरिपक्व नितंब प्रस्तुतिकरण में सर्विक्स के पूरे फैलने के पहले नितंब का कुछ भाग सर्विक्स से दिखने लगे।

शिशु के प्रस्तुतिकरण भाग के सर्विक्स से गुजरते समय एक फीडबैक तंत्र के कारण गर्भाशय के संकुचन और शक्तिशाली हो जाते हैं। इस फीडबैक तंत्र को फर्ग्युसन रिफ्लेक्स कहा जाता है। जब सर्विक्स पर दबाव पड़ता है तब वहां से एक संदेश हाइपोथैलेमस तक जाता है और उस संदेश के जवाब में पिट्यूटरी ग्रंथि के पिछले भाग से ऑक्सीटोसिन की बढ़ी हुई मात्रा निकलती है जो संकुचन को प्रभावित करती है।

प्रसव की प्रगति के साथ सर्विक्स शिशु के प्रस्तुतिकरण भाग को निकलने देने के लिये खुलता जाता है और श्रोणि के निचले भाग के कोमल ऊतकों को हटाता जाता है। इस संकेत के आने पर आप यह समझ सकते हैं कि प्रसव का दूसरा चरण आरंभ हो गया है। यह संकेत प्रिज़म्पटिव साइन कहलाते हैं।

शिशु का प्रस्तुतिकरण भाग जब श्रोणि के फर्श पर और रेक्टम पर दबाव डालता है तो महिला को शिशु को जोर लगा कर नीचे की तरफ ढकेलने की इच्छा होती है। जोर लगाने के प्रयास में पेट की पेशियां और डायफ्राम कड़े हो जाते हैं और इससे पेट के अंदर दबाव बढ़ता है इसे सेकेंडरी पावर कहते हैं। जोर लगाने के प्रयास सामान्यत: 5-6 सेंकेंड तक रहते हैं और एक संकुचन के दौरान ऐसे कई प्रयास हो सकते हैं ।

प्रसव के समय यह देखा गया है कि प्रसव के समय महिलायें सांस रोककर देर तक जोर लगाती हैं। यह ठीक नहीं है, इससे शिशु के हृदय पर प्रभाव पड़ सकता है जो खतरनाक हो सकता है। इससे जनन पथ को भी नुक्सान हो सकता है।

प्रसव के इस चरण में शिशु यात्री होता है वह गर्भाशय की सक्रिय हरकतों में निष्क्रिय सहयोग कर अपनी प्रसव यात्रा को पूरा करता है। यही प्रसव का मैकेनिज्म है।

सामान्य मैकेनिज्म

- शिशु के द्वारा प्रसव के समय किये गये सामान्य मैकेनिज्म का वर्णन करें।
- प्रत्येक चरण का परिभाषा के साथ संक्षिप्त वर्णन करें।

उत्तर के लिये पृष्ठ 55 देखें

अभ्यास बिंदु

आपके द्वारा कराये गये प्रसवों के आधार पर विचार कर बताऐं कि क्या आपने शिशु की इन हलचलों को देखा है।

प्रसव के तीसरे चरण की कार्यकी

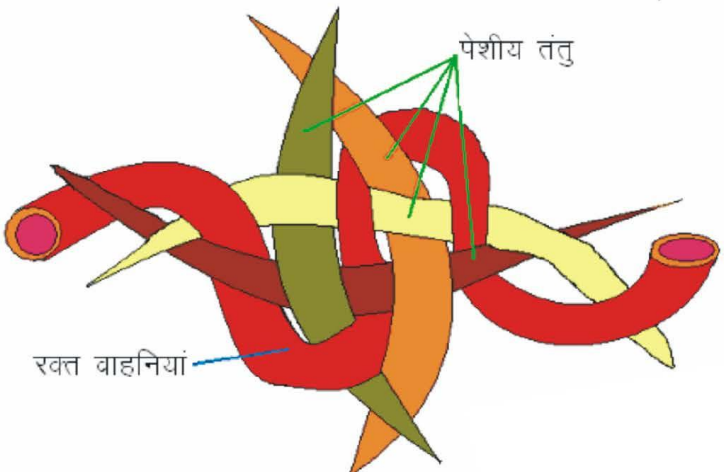
प्रसव के इस चरण में खतरों की सबसे अधिक सम्भावना होती है। प्रसव के इस चरण की कार्यकी को समझने पर आप सम्भावित समस्याओं की समय रहते पहचान कर सकते हैं और उनका प्रभावी प्रबन्धन कर सकते हैं।

प्रसव के पश्चात गर्भाशय में संकुचन और सिकुड़न पहले दो चरणों की तरह शिशु के जन्म के बाद भी लगातार चलते रहते हैं। यह प्रक्रिया आंवल के निकलने में सहायक होती है। आवंल एक कड़ी संरचना है। यह गर्भाशय की दीवार से अलग होने के लिये सिकुड़ नहीं सकती। इसके न सिकुड़ पाने के कारण जो दबाव रक्त वाहिकाओं पर पड़ता है वह उन्हें तोड़ देता है। रक्त वाहिकाओं के टूटने से निकलने वाला रक्त गर्भाशय की दीवार से आंवल को अलग कर देता है। साधारणतः यह आंवल के केंद्र पर होता है। रक्त का थक्का आंवल को गर्भाशय के निचले भाग (Lower Segment) में गिरा देता है। इस तरह आंवल की झिल्लियां भी उसके साथ अलग हो जाती हैं।

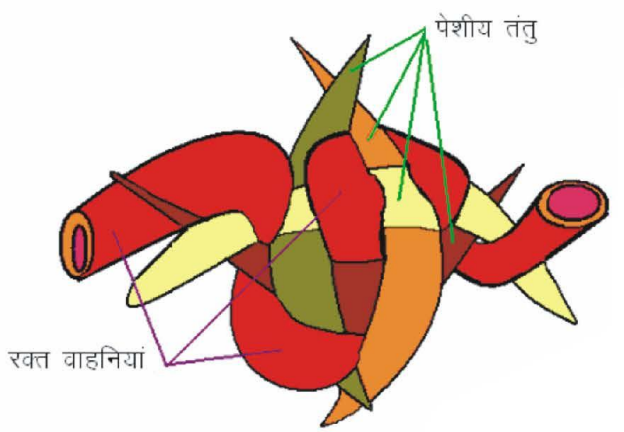
कई बार आंवल किनारों पर अलग होती है और इससे रक्त हानि सामान्य से अधिक होती है परन्तु पेशीय तंतुओ की तीनों परतें रक्त वाहिकाओं के खुले छोरों के चारों ओर संकुचित हो जाती है जिससे कि अधिक रक्तस्राव नही होता। इसे लिविंग लाइगेचर कहते हैं।

रक्त स्त्राव को रोकने की प्रक्रिया महिला के स्वस्थ्य रहने के लिये अत्यावश्यक है।

आंवल के अलग होने की दो विधियां हैं। इन्हें शूल्त्स और मैथ्यू डंकन की विधियां कहते हैं। फंडस पर आरोपित आंवल को शूल्त्स की विधि से निकाला जाता है जबकि बगल की दीवार पर आरोपित आंवल को डंकन की विधि से निकाला जाता है।



असंकुचित पेशी



संकुचित पेशी

प्रसव का प्रबंधन

प्रसव के समय महिला की देखभाल के दो पहलू हैं – वैज्ञानिक और मनोवैज्ञानिक। प्रसव का वैज्ञानिक पक्ष प्रसव की कार्यकी और उसके परिणाम से संबंधित है। प्रसव का दूसरा पक्ष मनोवैज्ञानिक है। यह पक्ष महिला के पारिवारिक और सामाजिक परिवेश और उसकी मानसिक स्थिति से जुड़ा होता है। सुरक्षित प्रसव के लिये प्रसव के दोनों पहलुओं में संतुलन होना आवश्यक है। आपके लिये यह महत्वपूर्ण है कि आप प्रसव के दोनों पहलुओं को भलीभांति समझ लें।

प्रसव के वैज्ञानिक पहलुओं का विस्तार से वर्णन पिछले पृष्ठों पर दिया गया है। यहाँ पर प्रसव के मनोवैज्ञनिक पहलुओं की चर्चा की गयी है।

प्रसव के प्रथम चरण का प्रबंधन

महिला की कुशल क्षेम का मूल्यांकन : प्रसव के समय महिला से भेंट पर उसके बारे में कुछ आधारभूत जानकारी प्राप्त करना अत्यंत महत्वपूर्ण होता है। इस जानकारी के आधार पर आप यह समझ सकते हैं कि महिला प्रसव की प्रक्रिया से किस तरह निपट रही है।

उदाहरण के लिये महिला कैसी दिख रही है? क्या उसके पति या अन्य रिश्तेदार उसके साथ हैं? क्या वह प्रसव की प्रक्रिया से निपटने के लिए मानसिक रूप से तैयार दिखती है? कहीं वह भयभीत तो नहीं दिख रही?

प्रसव के समय भेंट में महिला का कुशल क्षेम समझने के लिये किन प्रेक्षणों का होना महत्वपूर्ण है?

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उत्तर पृष्ठ 55 पर देखें

अभ्यास बिंदु :

महिला के कुशलक्षेम के लिये इन शारीरिकप्रेक्षणों का होना क्यों महत्वपूर्ण है?

प्रसव की अवधि में महिला की लगातार निगरानी करनी चाहिये। इससे महिला की कुशलक्षेम पता चलती रहती है। महिला की नाड़ी (**Pulse rate**) प्रत्येक आधा घंटे के अंतराल पर देखी जानी चाहिये। नाड़ी अपने आयतन और दर में स्थिर रहनी चाहिये। महिला का रक्तचाप दो घंटे के अंतर से लिया जाना चाहिये। इससे महिला के हृदय और रक्तवाहिका तंत्र से संबंधित कठिनाइयों के बारे में तथा प्री-ऐक्लेंप्सिया के बारे में जानकारी मिलती है। प्रसव के समय मूत्र परीक्षण भी किया जाना चाहिये। प्रोटीन के परीक्षण से संभावित समस्याओं की निगरानी में मदद मिलती है। पर इसके लिये यह सुनिश्चित करें कि मूत्र का नमूना साफ है क्योंकि यदि नमूने में प्रोटीन है और महिला की झिल्ली यदि अक्षत न रही तो गलत रीडिंग आने की संभावना रहती है। शरीर का तापमान भी नियमित लेना चहिये। इससे संक्रमण की संभावना का और कई प्रकरणों में डिहाइड्रेशन का पता चलता है। सभी प्रेक्षणों को अभिलेखित करना चाहिये जिससे कि महिला की क्लीनिकल स्थिति स्पष्ट होती है और संभावित समस्या का गंभीर होने से पहले पता चल जाता है।

प्रसव के समय पीड़ा या दर्द का प्रबंधन

प्रसव के समय गर्भाशय की पेशियों के निरंतर संकुचन के कारण उनके तंतुओं तक रक्त नहीं पहुंच पाता। रक्त की कमी से इस्चीमिया और दर्द होता है। इस समस्या से निपटने के लिये महिला को प्रसव के समय चहल कदमी के लिये प्रोत्साहित करना चाहिये। प्रसव के समय दर्द कम करने के रासायनिक तरीके भी हैं पर आपको यह मालूम होना चाहिये कि वे किस तरह कार्य करते हैं और आपकी परिचर्या में रहकर महिला और शिशु पर उनका क्या प्रभाव होगा।

प्रसव के समय दर्द निवारक के रुप में सामान्यतया पैथीडीन नामक दवा का प्रयोग होता है। इस दवा के अपने नुकसान हैं। इसके प्रयोग से महिला को सुस्ती आती है और यह प्रसव के दर्द को पूरी तरह खत्म नहीं करती। इस दवा के उपयोग से महिला संकुचनों के बीच में सो जाती है और संकुचन के उच्चतम स्तर पर पहुंचते ही वह जाग जाती है। यह दवा महिला के और आंवल अवरोध **(Placental Barrier)** को पार कर शिशु के श्वसन केंद्रों की क्रियाशीलता को कम कर सकती है। जिससे शिशु को नुकसान हो सकता है। इस दवा का प्रयोग पूरी सावधानी से करना चाहिये।

सांस के साथ लेने वाली गैसें : नाइट्रस ऑक्साइड और ऑक्सीजन को भी प्रसव के प्रथम चरण के अंतिम हिस्से में दर्द के निवारण के लिये प्रयोग में लाया जाता है। इनका कोई दीर्घकालिक प्रभाव नहीं होता। इनके प्रयोग से रक्त के ऑक्सीजनेशन में मदद मिलती है। इनके कुछ गलत प्रभाव (**Side Effects**) भी हैं पर वे बहुत ही कम समय के लिये होते हैं और उनका महिला या शिशु पर कोई गलत प्रभाव नहीं पड़ता।

भ्रूण के कुशलक्षेम का मूल्यांकन करें

भ्रूण के कुशलक्षेम का मूल्यांकन करने के क्या तरीके हैं?

- .....
- ..... उत्तर पृष्ठ 55 पर देखें

टटोल कर जांच करना

आप शिशु की स्थिति जानने के लिये पेट की टटोल कर जाँच कर सकती हैं। इससे आपको इस बात का अंदाज लगेगा कि शिशु का प्रस्तुतिकरण क्या है और शिशु का ऐटीट्यूड क्या है ?

अभ्यास बिंदु :

महिला के कुशलक्षेम के लिये इन शारीरिकप्रेक्षणों का होना क्यों महत्वपूर्ण है?

प्रसव की अवधि में महिला की लगातार निगरानी करनी चाहिये। इससे महिला की कुशलक्षेम पता चलती रहती है। महिला की नाड़ी (**Pulse rate**) प्रत्येक आधा घंटे के अंतराल पर देखी जानी चाहिये। नाड़ी अपने आयतन और दर में स्थिर रहनी चाहिये। महिला का रक्तचाप दो घंटे के अंतर से लिया जाना चाहिये। इससे महिला के हृदय और रक्तवाहिका तंत्र से संबंधित कठिनाइयों के बारे में तथा प्री-ऐक्लेंप्सिया के बारे में जानकारी मिलती है। प्रसव के समय मूत्र परीक्षण भी किया जाना चाहिये। प्रोटीन के परीक्षण से संभावित समस्याओं की निगरानी में मदद मिलती है। पर इसके लिये यह सुनिश्चित करें कि मूत्र का नमूना साफ है क्योंकि यदि नमूने में प्रोटीन है और महिला की झिल्ली यदि अक्षत न रही तो गलत रीडिंग आने की संभावना रहती है। शरीर का तापमान भी नियमित लेना चहिये। इससे संक्रमण की संभावना का और कई प्रकरणों में डिहाइड्रेशन का पता चलता है। सभी प्रेक्षणों को अभिलेखित करना चाहिये जिससे कि महिला की क्लीनिकल स्थिति स्पष्ट होती है और संभावित समस्या का गंभीर होने से पहले पता चल जाता है।

प्रसव के समय पीड़ा या दर्द का प्रबंधन

प्रसव के समय गर्भाशय की पेशियों के निरंतर संकुचन के कारण उनके तंतुओं तक रक्त नहीं पहुंच पाता। रक्त की कमी से इस्चीमिया और दर्द होता है। इस समस्या से निपटने के लिये महिला को प्रसव के समय चहल कदमी के लिये प्रोत्साहित करना चाहिये। प्रसव के समय दर्द कम करने के रासायनिक तरीके भी हैं पर आपको यह मालूम होना चाहिये कि वे किस तरह कार्य करते हैं और आपकी परिचर्या में रहकर महिला और शिशु पर उनका क्या प्रभाव होगा।

प्रसव के समय दर्द निवारक के रुप में सामान्यतया पैथीडीन नामक दवा का प्रयोग होता है। इस दवा के अपने नुकसान हैं। इसके प्रयोग से महिला को सुस्ती आती है और यह प्रसव के दर्द को पूरी तरह खत्म नहीं करती। इस दवा के उपयोग से महिला संकुचनों के बीच में सो जाती है और संकुचन के उच्चतम स्तर पर पहुंचते ही वह जाग जाती है। यह दवा महिला के और आंवल अवरोध **(Placental Barrier)** को पार कर शिशु के श्वसन केंद्रों की क्रियाशीलता को कम कर सकती है। जिससे शिशु को नुकसान हो सकता है। इस दवा का प्रयोग पूरी सावधानी से करना चाहिये।

सांस के साथ लेने वाली गैसें : नाइट्रस ऑक्साइड और ऑक्सीजन को भी प्रसव के प्रथम चरण के अंतिम हिस्से में दर्द के निवारण के लिये प्रयोग में लाया जाता है। इनका कोई दीर्घकालिक प्रभाव नहीं होता। इनके प्रयोग से रक्त के ऑक्सीजनेशन में मदद मिलती है। इनके कुछ गलत प्रभाव (**Side Effects**) भी हैं पर वे बहुत ही कम समय के लिये होते हैं और उनका महिला या शिशु पर कोई गलत प्रभाव नहीं पड़ता।

भ्रूण के कुशलक्षेम का मूल्यांकन करें

भ्रूण के कुशलक्षेम का मूल्यांकन करने के क्या तरीके हैं?

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- ..... उत्तर पृष्ठ 55 पर देखें

टटोल कर जांच करना

आप शिशु की स्थिति जानने के लिये पेट की टटोल कर जाँच कर सकती हैं। इससे आपको इस बात का अंदाज लगेगा कि शिशु का प्रस्तुतिकरण क्या है और शिशु का ऐटीट्यूड क्या है ?

N O T E S

N O T E S

शिशु के प्रस्तुतिकरण की टटोल कर जांच करने में निम्न शब्दों का प्रयोग होता है

ऐटीट्यूड- सिर, पांव, और धड़ के बीच का संबध (फ्लेक्स्ड, डिफ्लेक्स्ड या मिलीटरी)

लाई- गर्भाशय के लम्बवत अक्ष की तुलना में भ्रूण की स्थिति

प्रस्तुतिकरण भाग- भ्रूण का वह भाग जो सर्विक्स के इंटरनल ऑस के समीप है

स्थिति (**Position**) - महिला की श्रोणि की तुलना में प्रस्तुतिकरण भाग की स्थिति (अग्र, पार्श्व, पश्च, दायां या बांया)

प्रसव की प्रगति

प्रसव की सामान्य प्रगति के कई संकेतक होते हैं। किसी भी क्लीनिकल निर्णय के पहले इन सभी पर विचार किया जाना चाहिये।

संकुचनों को पेट के ऊपर से टटोल कर महसूस कर उनकी दर और तीव्रता का मूल्यांकन प्रति आधा घंटे में किया जा सकता है। प्रसव की प्रगति के साथ इन संकुचनों की दर और तीव्रता भी बढ़नी चाहिये।

नियमित अंतराल पर पेट को ऊपर से टटोल कर शिशु के श्रोणि में उतरने को महसूस किया जा सकता है, जिससे यह संकेत मिलता है कि संकुचनों का प्रभाव हो रहा है।

पिनार्ड स्टेथोस्कोप से हृदय की निगरानी करने से यह पता चल सकता है कि प्रसव प्रक्रिया का शिशु पर कोई गलत प्रभाव तो नहीं पड़ रहा है। भ्रूण के हृदय के धड़कन की दर बदलती रहती है। यदि यह दर कम होती है तो इसे लंबे समय तक सुनें। महत्वपूर्ण यह है कि हृदय के धड़कन की दर को बहुत ही जल्द अपनी सामान्य दर पर आ जाना चाहिये। यदि दर एक मिनट के लिये कम होती है तो उसे तब सुनें जब संकुचन न हो रहे हों। इससे आपको यह पहचानने में मदद मिलेगी कि शिशु प्रसव प्रक्रिया को ठीक से बर्दाश्त कर पा रहा है या नहीं। यदि शिशु का प्रसव जल्द ही पूरा होने वाला हो तो हो सकता है कि उसकी हृदय दर उसके सिर के जनन पथ के एकदम ऊपर होने के कारण कम हुई हो।

जैसा कि पहले भाग में बताया गया है अभिलेखन एक अत्यंत महत्वपूर्ण क्रिया है। इससे प्रसव की प्रगति का एक स्पष्ट खाका तैयार होता है और संभावित समस्याओं को पहचानने में मदद मिलती है। प्रसव के प्रेक्षणों को पार्टोग्राफ नाम के ग्राफ पर अभिलेखित किया जा सकता है।

- ❖ यदि महिला को विशेषज्ञ की मदद की जरुरत पड़ती है तो आप विचार कर बतायें कि क्या आप किसी विशेषज्ञ महिला को पहचान सकते हैं?
- ❖ यदि आपके द्वारा किसी महिला को दूसरे सेवा केंद्र पर भेजा जाना है तो क्या आप उसकी प्रगति और परिचर्या का सटीक वृत्तांत दे सकेंगे?

पार्टोग्राफ

पार्टोग्राफ पर आप प्रसव प्रक्रिया प्रारम्भ होने से लेकर प्रसव समाप्त होने तक के सभी प्रेक्षण अभिलेखित (रिकार्ड) कर सकते हैं। पार्टोग्राफ पर आप प्रसव की प्रगति का पूर्ण विवरण रख सकते हैं। यह आपको सुरक्षित प्रसव सुनिश्चित करने के लिये आवश्यक निर्णय लेने में सहायक है। आपसे अनुरोध है आप पार्टोग्राफ का प्रयोग नियमित रूप से करें।

प्रसव प्रक्रिया से सम्बन्धित विभिन्न जानकारियों को पार्टोग्राफ में एक चित्र के रूप में अभिलेखित किया जाता है। पार्टोग्राफ ग्यारह भागों में विभाजित होता है। पार्टोग्राफ में निम्न जानकारी अभिलेखित की जाती है -

महिला से सम्बन्धित जानकारी :- पार्टोग्राफ के इस भाग में महिला का नाम व अन्य जानकारी लिखें।

बच्चे के दिल की धड़कन :- बच्चे के दिल की धड़कन सुनें। सामान्यतया बच्चे के दिल की धड़कन 120 से 160 प्रति मिनट होनी चाहिये। बच्चे के दिल की धड़कन के अनुसार पार्टोग्राफ में निशान (●) लगायें।

लिकर :- एम्निओटिक द्रव की जाँच करें। यदि एम्निओटिक द्रव साफ है तो "C" लिखें और यदि द्रव में खून है तो "B" लिखें। यदि द्रव में मिकोनियम है तो "M" लिखें।

मॉल्डिंग :- यदि अस्थियाँ अलग हो गयी हैं और सूचर आसानी से महसूस किये जा रहे हैं तो "O" लिखें। यदि अस्थियाँ एक-दूसरे को छू रही हैं तो "+" लिखें। यदि अस्थियाँ एक-दूसरे पर चढ़ी हैं तो "++" लिखें। यदि अस्थियाँ एक-दूसरे पर काफी अधिक चढ़ी हैं तो "+++" लिखें।

सर्वाइकल डायलेटेशन :- प्रसव की प्रगति जानने के लिये यह सबसे महत्वपूर्ण प्रेक्षण है। पार्टोग्राफ में डायलेटेशन सेमी. में दर्शाया गया है। सर्वाइकल डायलेटेशन के आधार पर आप प्रसव की प्रगति को निम्न चरणों में विभाजित कर सकते हैं :

- लेटेन्ट फेस - डायलेशन 0-2 से.मी.
- एक्टिव फेस - डायलेशन 3-10 से.मी.
- एलर्ट लाइन
- एक्शन लाइन

प्रसव की प्रगति को रेखांकित करने की विधि फिल्म में बताई गयी है।

बच्चे के सिर का नीचे उतरना:- प्रसव की प्रगति के जानने के लिये यह अत्यन्त महत्वपूर्ण है। जिस समय पर बच्चे का सिर नीचे उतरता है उस समय पर "O" लिखें।

समय :- प्रसव प्रक्रिया प्रारम्भ होने के समय को शून्य (Zero) मान लें। वास्तविक समय के लिये नीचे स्थान दिया गया है।

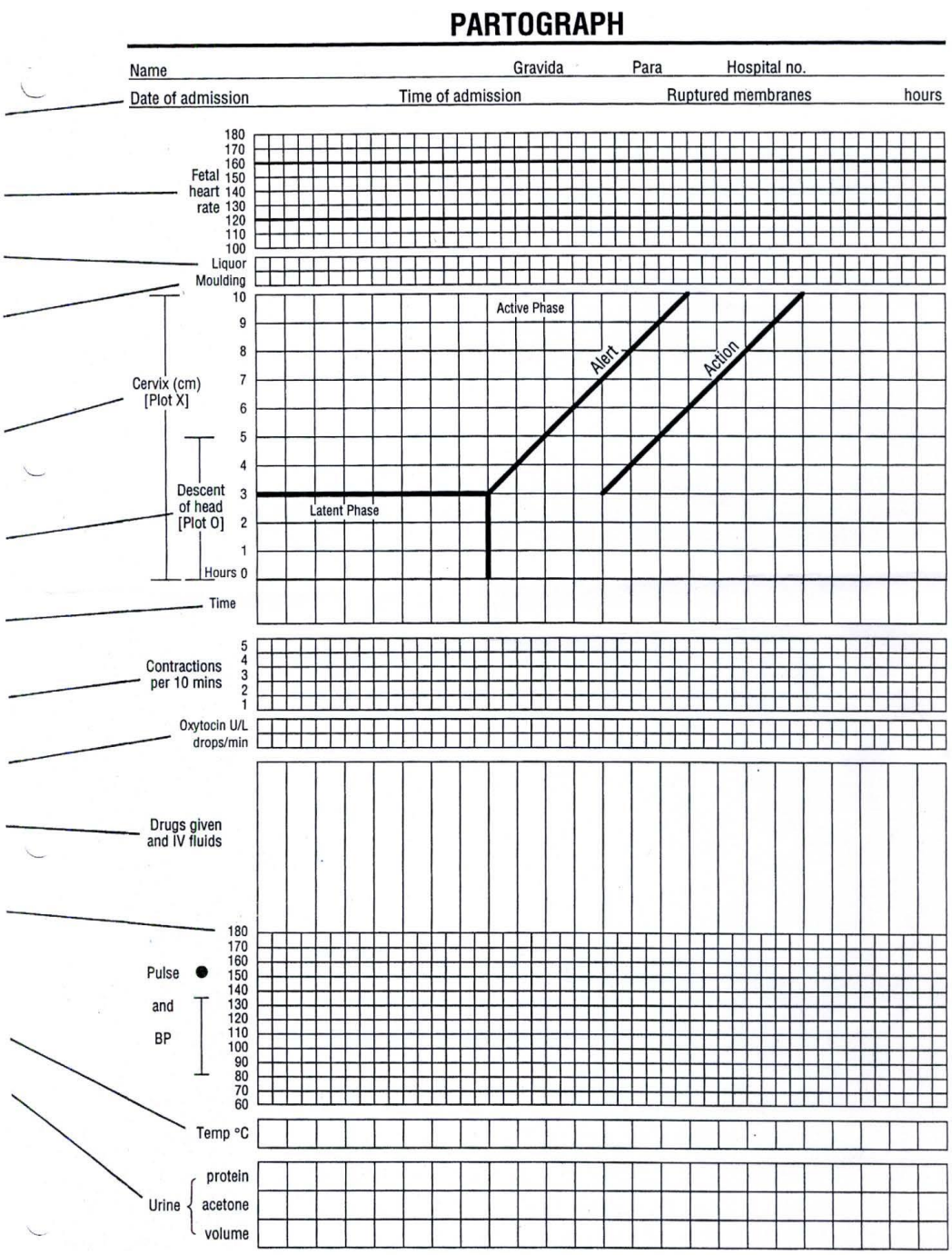
संकुचन :- सर्वाइकल डायलेटेशन व बच्चे के सिर के नीचे उतरने के साथ-साथ संकुचन (Contraction) प्रसव की प्रगति दर्शाता है।

ऑक्सीटोसिन व अन्य दवायें :- इनको रिकार्ड करने के लिये पार्टोग्राफ में जगह दी गयी है।

ब्लड प्रेशर, पल्स (नाड़ी) और ताप :- जब भी महिला का ब्लड प्रेशर, नाड़ी व टेम्परेचर जाँचें उसे पार्टोग्राफ में लिखें।

महिला का मूत्र :- जब भी महिला पेशाब करे उसकी मात्रा रिकार्ड करें। यदि पेशाब जाँच की सुविधा उपलब्ध हो तो एल्बूमिन और एसीटोन (कीटोन) की जाँच करें और रिकार्ड करें।

पार्टोग्राफ को प्रयोग करने का तरीका फिल्म में दिखाया गया है।


PARTOGRAPH
Name
Gravida
Para
Hospital no.
Date of admission
Time of admission
Ruptured membranes
hours
Fetal heart rate
180
170
160
150
140
130
120
110
100
Liquor
Moulding
Cervix (cm) [Plot X]
Descent of head [Plot O]
10
9
8
7
6
5
4
3
2
1
Hours 0
Active Phase
Alert
Action
Latent Phase
Time
Contractions per 10 mins
5
4
3
2
1
Oxytocin U/L drops/min
Drugs given and IV fluids
Pulse
and
BP
180
170
160
150
140
130
120
110
100
90
80
70
60
Temp °C
Urine
protein
acetone
volume

स्थिति

महिला प्रसव के समय जिस स्थिति में रहती है उससे या तो कठिनाइयों की संभावना बढ़ेगी या फिर उससे प्रसव की प्रगति तेज होगी। श्रोणि के आकर से हमें कुछ संकेत मिलते हैं। पहले भाग के पृष्ठ 6 पर दिये गये श्रोणि के आकारों में आप सैक्रम के अंदरुनी मोड़ की पहचान कर सकते हैं। शिशु को यह मोड़ ही जनन पथ की ओर जाने के लिये निर्देशित करता है। यदि महिला पीठ के बल लेटी है तो आप समझ सकते हैं कि शिशु को सैक्रम के इस मोड़ से जननपथ तक पहुंचने के लिये गुरुत्व के विरुद्ध जाना होगा। साथ ही गर्भाशय का भार मुख्य रक्त वाहनियों पर दबाव डाल रहा होगा। इससे रक्त की आपूर्ति कम होगी और परिणामस्वरूप गर्भाशय में कम ऑक्सीजन पहुंचेगी। इन सब कारणों से यह संकेत मिलते हैं कि महिला को प्रसव के समय सीधे बैठना चाहिये।

प्रसव के द्वितीय चरण का प्रबंधन

प्रसव के द्वितीय चरण के प्रबंधन का उद्देश्य शिशु का सुरक्षित प्रसव है। जिससे महिला को कम से कम चोट या तकलीफ पहुंचे। इस समय आसपास की सफाई अत्यन्त महत्वपूर्ण है क्योंकि शिशुओं में संक्रमण से प्रतिरोध की क्षमता बहुत ही कम होती है। साथ ही प्रसव के समय जनन पथ पर किसी प्रकार की चोट से महिला को भी संक्रमण हो सकता है। अत: जरूरी है कि सभी उपकरण स्वच्छ हों। इस सम्बन्ध में निम्न बातें महत्वपूर्ण हैं।

- बिस्तर के सभी कपड़े अलग अलग धोना चाहिये।
- प्रसव के समय प्रयोग के लिये साफ कपड़ों का उपयोग किया जाना चाहिये।
- चिकित्सालय में सभी गंदी सतहों जैसे बिस्तर, फर्श और ट्रॉली को जीवाणुरहित करना चाहिये।

आपकी स्वयं की स्वच्छता भी अत्यंत महत्वपूर्ण है क्योंकि आपसे भी संक्रमण फैल सकता है। हाथ का धोना पृष्ठ 26 पर बताया गया है। आपके कपड़े भी स्वच्छ होना जरूरी हैं क्योंकि कपड़ों से संक्रमण आपकी जानकारी के बिना उपकरणों तक पहुंच सकते हैं।

क्या करें और या न करें

- सुनिश्चित करें कि सभी उपकरण स्वच्छ है और आवश्यकतानुसार जीवाणुरहित किये गये हैं ।
- अपनी और महिला की व्यक्तिगत स्वच्छता सुनिश्चित करें।
- सुनिश्चित करें कि वातावरण स्वच्छ है।
- गंदे तौलिये जला दें।
- गंदे कपड़ों का प्रयोग सैनीटरी तौलियों के रूप में न करें।
- प्रसव की सामान्य प्रक्रिया के साथ हस्तक्षेप न करें।

अभ्यास बिंदु :

संक्रमण की नियमन प्रक्रिया से संक्रमण कम होगा और इससे जीवन की रक्षा होगी ।

प्रसव के लिये मां की स्थिति

प्रसव के समय महिला को या तो उकड़ू बैठना चाहिये या फिर दोनों हाथ और पैरों पर रहना चाहिये। इन दोनों स्थितियों में आंवल तक रक्त संचार लगातार बना रहता है और प्रसव में गुरुत्व की सहायता मिलती है। साथ ही प्रसव के नियमन से जनन पथ को नुकसान भी कम होता है। महिला को संकुचनों के समय सांस लेने को कहना चहिये। इससे शिशु को धीरे धीरे नीचे आने में सहायता मिलती है।

प्रसव के तृतीय चरण का प्रबंधन

शिशु प्रसव की पूरी प्रक्रिया में यह अवस्था सबसे खतरनाक मानी जाती है। इस अवस्था के प्रबंधन का उद्देश्य प्रसव के संभावित खतरों को कम करना है।

प्रसव के तीसरे चरण में आंवल के अलग होने के संकेत क्या है?

- .....
- .....
- .....

उत्तर पृष्ठ 56 पर देखें

सामान्य प्रसव की स्थिति में आवंल को प्रसव के तुरंत बाद अपने आप अलग हो जाना चाहिये। यह सामान्य प्रक्रिया है। आपको इसके विरुद्ध कोई कार्य नहीं करना चाहिये। यह देखा गया है कि स्वास्थ्य कार्यकर्ता अंबलाइकल कार्ड को जल्दी खींच कर उसे आंशिक रुप से अलग करते हैं। इससे अत्याधिक रक्तस्त्राव हो सकता है और महिला को खतरा हो सकता है।

यदि कॉर्ड को अत्याधिक बल प्रयोग के साथ खींचा गया तो गर्भाशय के उलटने जैसी खतरनाक स्थिति बन सकती है और इससे महिला सदमे में जा सकती है और उसके प्राणों पर संकट आ सकता है।

इसी तरह यदि आप आंवल के अलग होने की प्रक्रिया में हस्तक्षेप करते हैं तो आंवल आंशिक रूप से अलग हो सकता है। इससे अत्याधिक रक्तस्त्राव हो सकता है। इसलिये यह महत्वपूर्ण है कि आप समझें कि आपकी अनावश्यक सकियता महिला को कितना नुक्सान पहुंचा सकती है।

क्या करें और क्या न करें

- कार्यकीय प्रबंधन के समय कॉर्ड को न खींचें।
- आंवल के अलग होने के संकेत के लिये प्रतीक्षा करें।
- कार्यकीय प्रबंधन के समय मां को आंवल बाहर ढकेलने के लिये जोर लगाने को कहें।
- तृतीय चरण के प्रबंधन में उपयोग की जाने वाली दवा के प्रभाव के बारे में जानकारी रखें

रक्त हानि का मूल्यांकन

प्रसव के बाद होने वाली रक्त हानि का मूल्यांकन करना बहुत महत्वपूर्ण है। रक्त हानि के लक्षणों का उपचार करना आवश्यक है।

प्रसव के तीसरे चरण में होने वाली रक्त हानि को परिभाषित करना कठिन है। फिर भी यदि महिला पहले से ही रक्ताल्पता से पीड़ित हो और रक्त हानि अधिक हो तो उसकी रक्ताल्पता और बढ़ जायेगी। आपको इस बात का भी ध्यान रखना चाहिये कि झिल्लियों के फटने के बाद लिकर के रूप में कितनी द्रव हानि हुई है। सामान्यतया द्रव हानि का जो अनुमान लगाया जाता है वह वास्तविक हानि से कम (लगभग 500 मि.ली. या अधिक) होता है। यदि किसी महिला को रक्त स्राव हो रहा है तो उसे कभी भी अकेले न छोड़ें क्योंकि उसकी हालत बहुत तेजी से बिगड़ सकती है। स्थिति की गंभीरता का मूल्यांकन करें और यदि स्थिति गंभीर है तो उसे तत्काल रिफर करें।

आंवल का परीक्षण

प्रसव के तीसरे चरण में आंवल सामान्य रूप में पूरी तरह अलग हो जाता है परंतु कभी-कभी उसका कोई हिस्सा

गर्भाशय में रह जाता है जिसके कारण या तो रक्तस्राव होता है या संक्रमण हो सकता है। आंवल के साथ दो झिल्लियां होती हैं जिनको अलग अलग कर पहचाना जा सकता है। इससे आपको पता चलता है कि गर्भाशय के अंदर कुछ नहीं बचा है। आंवल का व्यास लगभग 12 इंच का होता है। इसकी सभी दिखने वाली रक्त वाहिकाऐं आंवल में ही होनी चाहिये। यदि इन रक्त वाहिकाओं में से कुछ झिल्लियों में जा रही हों और वहां पर कोई छेद हो तो इसका अर्थ यह है कि आंवल का कोई हिस्सा गर्भाशय में रह गया है। ऐसी स्थिति में रक्त स्त्राव होता रहेगा क्योंकि गर्भाशय सिकुड कर रक्त वाहिकाओं को बंद नहीं कर पायेगा। यह बहुत महत्वपूर्ण है कि आप सुनिश्चित करें कि आंवल या उससे संबंधित कोई ऊतक गर्भाशय में नही रह गया है।

अभिलेखन करना

आपके विचार से प्रसव और उसके बाद अच्छा अभिलेखन क्यों महत्वपूर्ण है?

प्रसव और प्रसव के समय रक्त हानि का अभिलेख रखना इसलिये महत्वपूर्ण है कि संभव है कि महिला को शिशु जन्म की किसी समस्या के कारण पुनः चिकित्सालय में या आपके पास आना पड़े। ऐसे में आपके पास उपलब्ध जानकारी आपको संभावित समस्या को पहचानने में मदद करेगी और क्लीनिकल निर्णय लेने में सहायक होगी। प्रसव के तीसरे चरण के पूरे होने और उसके बाद हुई रक्त हानि की जानकारी से आपको यह निर्णय लेने में भी मदद मिलेगी कि क्या स्त्री को रिफर किया जाना आवश्यक है। साथ ही यदि शिशु को कोई समस्या है और उसे रिफर किया जाना है तो चिकित्सालय में आपका अभिलेख इस समस्या के निदान में सहायक होगा।

प्रसव में सामाजिक अवलम्बन

प्रसव के समय परिवार का साथ महिला के लिये अत्यंत महत्वपूर्ण है। इससे महिला को मानसिक रूप से शक्ति मिलती है जो प्रसव में सहायक होती है। देखा गया है कि परिवार के सदस्यों की परिचर्या का प्रभाव स्वास्थ्य कार्यकर्ताओं की परिचर्या के प्रभाव से अधिक होता है।

चिकित्सालय में प्रसव कराने आई अधिकांश महिलायें चिकित्सालय के माहौल से परिचित नहीं होतीं। वे नये माहौल में भयभीत रहती हैं। यह भय उनके हारमोनल फीडबैक तंत्र; जो प्रभावी संकुचनों के लिये आवश्यक है पर विपरीत प्रभाव डालता है। इससे महिला में आत्महीनता की भावना भी आ सकती है जो बाद में उसके मातृत्व भावना को आत्मसात करने में भी कठिनाई पैदा कर सकती है।

- विचार करें कि चिकित्सालय में प्रसव कराने आई महिला को कौन अवलंबन देता है?
- यह महत्वपूर्ण है कि वे किस पक्ष पर अवलंबन देते हैं?

क्लीनिकल निर्णय करना

स्वास्थ्य कार्यकर्ता के रूप में आप महिला की परिचर्या और उपचार से संबंधित निर्णय लेते हैं। जब महिला को कोई समस्या होती है तो आपके लिये क्लीनिकल निर्णय लिया जाना आवश्यक हो जाता है। कई बार किसी समस्या के निदान के लिये कार्य करते समय अचानक कोई निर्णय लिया जाना भी जरूरी होता है। कोई भी निर्णय लेने के लिये यह महत्वपूर्ण है कि आपके पास समुचित जानकारी उपलब्ध हो ताकि आपके निर्णय से महिला को सर्वोचित प्रतिफल मिल सके। निर्णय लेने की प्रक्रिया में आपका ज्ञान व अनुभव अत्यन्त महत्वपूर्ण होता है।

निर्णय लेने के कई सिद्धान्त हैं। इनमें से सबसे आसान सिद्धांत है उपलब्ध जानकारी का विश्लेषण।

इस सिद्धांत के अनुसार निर्णय लेने के चार चरण होते हैं –

N O T E S

N O T E S

- संकेत प्राप्त करना (Cue Acquisition)
- परिकल्पना बनाना (Hypothesis Generation)
- संकेत की व्याख्या करना (Cue Interpretation)
- परिल्पना का मूल्यांकन करना (Hypothesis Evaluation)

इस सबका व्यावहारिक स्तर पर क्या अर्थ है?

आपकी जब भी किसी महिला से भेंट होती है तो आप कुछ कार्य अपने आप, अनजाने ही करने लगते हैं। यह कार्य आपकी जानकारी एकत्र करने की प्रक्रिया का हिस्सा होते हैं। महिला से आप कुछ संकेत ग्रहण करते हैं और इन संकेतों के आधार पर आप कुछ प्रश्न विकसित करते हैं। इस प्रक्रिया को संकेत प्राप्त करना **(Cue Acquisition)** कहते हैं। इन प्रश्नों को पूछने से आपको परिस्थिति के बारे में और भी संकेत मिलेंगे। इस प्रक्रिया में आपको महिला और प्रसव से संबंधित अधिक से अधिक जानकारी प्राप्त कर लेनी चाहिये। जानकारी प्राप्त करने के लिये आपको अपने सम्प्रेषण कौशल का उपयोग करना चाहिये। इसी प्रकार महिला के शारीरिक परीक्षण से आपको क्लीनिकल निर्णय लेने से संबंधित जानकारी मिलेगी।

निर्णय लेने के अगले चरण में आप उपलब्ध जानकारी और संकेतों के आधार पर महिला की वर्तमान स्थिति के कारणों को पहचानने का प्रयास करते हैं। इसे प्राकल्पना बनाना कहते हैं। निर्णय लेने के लिये प्राकल्पना बनाना महत्वपूर्ण है।

निर्णय लेने के तीसरे चरण में आप अपनी अवधारणा के आधार पर महिला की क्लीनिकल अवस्था का विश्लेषण करते है। इसे संकेतों की व्याख्या करना **(Cue Interpretation)** कहते हैं। इस विश्लेषण तथा अपने ज्ञान व अनुभव के आधार पर आप महिला की क्लीनिकल अवस्था के कारणों के बारे में अपनी अवधारणा का मूल्यांकन करते हैं। इसे अवधारणा मूल्यांकन कहते हैं।

निर्णय लेने की उपरोक्त प्रक्रिया को एक उदाहरण के द्वारा समझा जा सकता है। कल्पना करें की महिला को अभी प्रसव हुआ है और आप प्रसव के तीसरे चरण के पूरा होने की प्रतीक्षा कर रहे हैं। इस समय निर्णय लेने के लिये निम्न बातों पर ध्यान देना महत्वपूर्ण है:-

- आप इस समय क्या देख रहे हैं?
- आप किन खास संकेतों के देखे जाने की प्रतीक्षा कर रहे हैं?
- आप कौन से परीक्षण करेंगे?
- यदि आपने कोई दवा प्रयोग की है तो उसके क्या प्रभाव होंगे?

उदाहरण के लिये -

- आप देखते हैं कि महिला की अवस्था सामान्य है।
- कॉर्ड लम्बा हो रहा है।
- योनि मार्ग से बहुत कम रक्त स्राव हो रहा है।
- महिला की रंगत सामान्य है।
- महिला की नाड़ी सामान्य है।
- महिला का रक्त चाप निर्धारित सीमा में है।

- टटोल कर देखने से पता चलता है कि फंड्स बीच में है और अच्छी तरह संकुचित हो गया है।

  उपरोक्त संकेतों से यह अवधारणा बनती है कि आंवल अलग हो गयी है।

- महिला संकुचन को अनुभव कर जोर लगाती है।

इससे यह सत्यापित होता है कि आंवल प्रसवित होने के लिये तैयार है। उपरोक्त संकेतों तथा उसके विश्लेषण के आधार पर आप यह कह सकते हैं कि आंवल अलग होने की प्रक्रिया सामान्य है।

इस सबसे तो ऐसा लगता है कि क्लीनिकल निर्णय करना एक सीधा-साधा काम है। पर ऐसा नहीं है यह थोड़ा जटिल और कठिन है। रोल्फ 1998 के अनुसार इस प्रक्रिया में हम सूचनाऐं मिलाते हैं और क्लीनिकल परिस्थितियों और महिला से साक्ष्य जुटाते हैं और भविष्य की क्लीनिकल परिस्थितियों पर लगा कर देखते हैं। इस प्रक्रिया को हम सहजबुद्धि कहते हैं। इसे ''बिना किसी तर्क या प्रयास के किसी वस्तु के बारे में तात्कालिक ज्ञान'' कहते हैं। पर इस प्रक्रिया में सर्वोत्तम उपलब्ध साक्ष्यों का प्रयोग जोड़ा जाना चाहिये। चिकित्सा के प्रत्येक क्षेत्र में साक्ष्य पर अभ्यासों को किये जाने की अनुशंसा की जाती है। इससे यह मतलब निकलता है कि जब आप गर्भवती महिला की परिचर्या करते हैं तो सर्वोत्तम प्रतिफल के लिये आप संपूर्ण उपलब्ध जानकारी का उपयोग करते हैं।

उपरोक्त उदाहरण से यह निष्कर्ष निकलता है

- आंवल के अलग होने की प्रक्रिया के संकेतों को समझने के लिये प्रसव के तीसरे चरण की कार्यकी समझना आवश्यक है। यह आपको आगे की गतिविधियों के लिये भी सूचना देती है। उदाहरण के लिये प्रसव के तीसरे चरण के कार्यकीय प्रबंधन में कॉर्ड को नहीं खींचना चाहिये क्योंकि इससे आंवल आंशिक रूप से अलग हो सकती है जिससे गंभीर रक्तस्त्राव या आंवल के गर्भाशय पर जुड़े रहने के कारण गर्भाशय के उलट जाने जैसी गंभीर स्थिति पैदा हो सकती है। इन दोनों ही स्थितियों में महिला की मृत्यु भी हो सकती है।
- यदि आप प्रसव के तीसरे चरण में दवाओं का प्रयोग करते हैं तो आपको इन दवाओं के कार्य करने के तरीके के बारे में जानना आवश्यक है।

प्रसव की गलत प्रक्रिया अपनाने से महिला या उसके शिशु या दोनों के साथ खराब परिणाम हो सकते हैं। यह महत्वपूर्ण है कि आप प्रक्रिया को जल्दी समाप्त करने की अपेक्षा समस्या को समझने पर ध्यान दें। इसके लिये आपको गहन ज्ञान और समझ विकसित करनी होगी और पूर्व अनुभवों से सीखना होगा।

भाग 2 के उत्तर

पृष्ठ 39 के उत्तर

सामान्य तरीका

याद रखें : गर्भाशय का संकुचन और सिमटना प्रसव की पूरी अवधि के दौरान जारी रहता है।

- प्रसव के सामान्य तरीके में प्रस्तुतिकरण भाग शिशु का सिर होता है जो अग्र स्थिति (**Anterior Position**) में अच्छी तरह से फ्लेक्स्ड या अपनी छाती पर झुका होता है। जैसे जैसे संकुचन सिर को नीचे श्रोणि के फर्श की पेशियों की ओर ढकेलते हैं यह सिर को और फ्लेक्स्ड करता जाता है और इस तरह ऑसिपुट आगे की ओर घूम जाता है।
- गर्भाशय के संकुचन और महिला के ऐच्छिक (**Voluntary**) प्रयास शिशु को जनन पथ के अंदर ढकेलते जाते हैं।
- अच्छी तरह से फ्लेक्स्ड सिर का सबसे चौड़ा हिस्सा (बाई पैराइटल व्यास) जब भग पर दिखाई देता है तो उसे क्राउनिंग कहते हैं। सिर प्रसव के बाद उस स्थिति में आ जाता है जिसमें वह जननपथ में प्रवेश करने से पहले था इस क्रिया को रेस्टीट्यूशन कहते हैं।
- संकुचन जारी रहते हैं और शिशु के कंधे श्रोणि में प्रवेश करते हैं, अगला कंधा घूम कर आगे आता है और उसी के साथ सिर भग के बाहर घूमता है।
- अगला कंधा प्यूबिस के नीचे से बाहर आता है और इसके तुरंत बाद पिछला कंधा भी बाहर आता है।
- शिशु के शेष शरीर का प्रसव भी पूरा हो जाता है।

इस प्रक्रिया में लगने वाला समय बदलता रहता है और वह महिला के प्रसवों की संख्या और उसकी स्थिति पर निर्भर करता है।

पृष्ठ 41 का उत्तर

महिला पर किये गये प्रेक्षण

- महिला का तापमान
- महिला की नाड़ी की गति
- महिला का रक्तचाप
- उसके रंगत व्यवहार को देखें इससे आपको महिला की मानसिक शक्ति का पता चलेगा।

पृष्ठ 42 का उत्तर

भ्रूण के कुशल क्षेम का मूल्यांकन करना

- भ्रूण के हृदय की गति
- भ्रूण वृद्धि गर्भावस्था की अवधि से संबंधित है-टटोल कर देखें।

पृष्ठ 49 का उत्तर

आंवल अलग होने के संकेत

- फंडस अच्छी तरह सिमट गया है और मध्य में है
- कार्ड लंबा हो गया है
- योनि से बहुत कम मात्रा में रक्त हानि हुई है

भाग - 3 : परप्यूरियम

1. परप्यूरियम की कार्यकी
2. दुग्ध निर्माण की कार्यकी
3. सफल स्तनपान
4. परिवार नियोजन

कार्य-पुस्तिका के इस भाग को पूरा करने के पश्चात आप

1. परप्यूरियम की कार्यकी का वर्णन कर सकेंगे।
2. दुग्ध निर्माण की कार्यकी को समझा सकेंगे।
3. सफल स्तनपान विधि को समझा सकेंगे।

परप्यूरियम की कार्यकी

परप्यूरियम वह अवधि होती है जिसके दौरान प्रसव के बाद महिला के प्रजनन अंग अपनी गर्भावस्था की पूर्व की स्थिति में लौट जाते हैं। इस प्रक्रिया को इनव्हाल्यूशन कहते हैं। इस समय स्तनपान भी आंरभ हो जाता है। यह अवधि लगभग 6 से 8 सप्ताह की होती है। माँ एवं बच्चे के स्वास्थ्य की दृष्टि से इस अवधि की कार्यकी समझना सुरक्षित प्रसव के लिये अत्यन्त महत्वपूर्ण है।

गर्भावस्था के समय तथा प्रसव के दौरान गर्भाशय की पेशियाँ फैल जाती हैं। प्रसव के पश्चात गर्भाशय को गर्भावस्था से पूर्व की अवधि में वापस लाने के लिये महिला के शरीर में तीन प्रक्रियाएं होती हैं।

- इस्कीमिया से पेशियों के रक्त प्रवाह को कम किया जाता है जिससे वे संकुचित होने लगती हैं ।
- फैगोसाइटोसिस से त्याज्य पदार्थों को श्वेत रक्त कोशिकाओं के द्वारा बाहर निकाला जाता है ।
- ऑटोलिसिस से पेशीय तंतुओं को और कोशिकाओं को प्रोटिओलिटिक एंजाइम के द्वारा बाहर निकाला जाता है ।

बाकी बचा हुआ त्याज्य पदार्थ गुर्दों के द्वारा निकाला जाता है। इन प्रक्रियाओं से गर्भाशय का वजन घटकर लगभग 60 ग्राम हो जाता है जबकि गर्भावस्था के दौरान यह वजन 1000 ग्राम तक हो जाता है।

प्रसव के बाद गर्भाशय पूरी तरह सुगठित हो जाता है और यह नाभि और सिंफाइसिस प्यूबिस के बीच में स्थित रहता है। प्रसव के पश्चात के प्रथम 2 घंटों में गर्भाशय की पेशियां कुछ फैलती हैं जिससे गर्भाशय थोड़ा ऊपर उठ जाता है। इसके बाद प्रतिदिन फंडस की ऊंचाई तब तक कम होती जाती है जब तक कि यह श्रोणि में नहीं समा जाता। इस स्थिति में गर्भाशय को टटोल कर अनुभव नहीं किया जा सकता।

प्रसव के पश्चात गर्भाशय का अस्तर (**Lining**) जिसे डेसीड्यूआ कहते हैं, योनि के मार्ग से लोकिया के रूप में निकलता है। योनि मार्ग से निकलने वाले द्रव का रंग भी धीरे-धीरे बदलता है। प्रारम्भ में यह लाल होता है। आँवल के स्वस्थ होने और छोटे होते जाने के कारण योनि मार्ग से निकलने वाला द्रव लाल से कत्थई और फिर पीला/सफेद हो जाता है। योनि मार्ग से लोकिया का निकलना 20 दिन या उससे अधिक तक जारी रह सकता है।

यदि योनि मार्ग से निकलने वाला पदार्थ बदबूदार है या उसका रंग पुनः लाल हो गया है तो इसका कारण संक्रमण हो सकता है। ऐसी स्थिति में महिला को तत्काल चिकित्सक के पास भेजना चाहिये। यदि इस संक्रमण का समय रहते उपचार न किया गया तो संक्रमण पूरे शरीर में फैल सकता है और इससे मृत्यु भी हो सकती है।

जनन पथ (Genital Tract)

प्रसव के बाद सर्विक्स कोमल होता है और कई बार छिला सा (**Bruised**) लगता है। परन्तु यह दो या तीन दिन में ही सामान्य हो जाता है। सर्विक्स में यदि कोई छोटे मोटे कटाव या घाव होते हैं तो वे जल्द ही भर जाते हैं। यदि घाव बड़े हैं तो उनसे बहुत रक्त बहता है। गर्भाशय के पूरी तरह संकुचित होने के बाद भी यदि रक्तस्त्राव होता रहता है तो उसका कारण यह घाव हो सकते हैं जो मां के स्वास्थ्य को हानि पहुंचा सकते हैं। यदि ऐसा है तो महिला को तुरंत स्फिर करना आवश्यक हो जाता है। यह घाव अक्सर प्रसव के बाद हो जाते हैं। इन पर ध्यान देना जरूरी है।

योनि की दीवारें भी प्रसव के समय खिंच जाती है, परन्तु पेशियों में संकुचन के कारण यह भी अपनी पुरानी स्थिति में लौट आती हैं।

प्रसव उपरान्त संक्रमण के लक्षण एवं संकेत

- नाड़ी की गति में वृद्धि और शरीर का तापमान 39° से. या उसके ऊपर होना।
- संक्रमित क्षेत्र जैसे गर्भाशय या स्तनों में दर्द होना ।
- यदि संक्रमण गर्भाशय में है तो इसे छूने या दबाने में दर्द का अनुभव होता है ।
- स्तनों के प्रभावित हिस्से का लाल होना।

- अस्वस्थता और कंपकंपी।
- लोकिया बहुत अधिक और लाल निकलता है।
- लोकिया में बदबू आती है।

पेरीनियम पर यदि कोई चोट या घाव है तो उसे संक्रमण से बचाने के लिये ध्यान देना बहुत जरूरी है। यदि पेरीनियम फटा हुआ है और उससे रक्तस्त्राव हो रहा है तो टांके लगाना आवश्यक होगा। साथ ही स्वच्छता का ध्यान रखना होगा जिससे घाव भरने में मदद मिले।

परिचर्या और प्रबंधन : प्रसवोपरान्त महिला का परीक्षण प्रतिदिन करना चाहिये। इससे आप यह सुनिश्चित कर सकेंगे कि सामान्य प्रक्रियाऐं ठीक चल रही हैं। यदि संक्रमण का कोई भी संकेत मिले तो महिला को तत्काल फिर करें।

स्वच्छता : प्रसव के पश्चात माँ व बच्चे को संक्रमण की सम्भावना बहुत अधिक होती है। संक्रमण को रोकने के लिये माँ व बच्चे की नियमित सफाई बहुत जरूरी है। इस सम्बन्ध में निम्न सावधानियाँ जरूरी हैं :-

करें और ना करें

- महिला का परीक्षण कर हाथ धोऐं।
- महिला को स्वच्छता की जरुरत के बारे में बताऐं।
- महिला को सैनेटरी तौलियों (नेपकिन या पैड) के प्रयोग के लिये साफ कपड़े के प्रयोग के बारे में बताऐं।
- यदि महिला बताए कि वह अस्वस्थ अनुभव कर रही है तो उसे टालें नहीं।
- किसी एक लक्षण या संकेत पर ध्यान न देकर समस्या की पूरी जांच करें।

परप्यूरियम अवधि में परिवार के साथ तालमेल बना कर रखें। इससे परिवार के सदस्यों के साथ आपके अच्छे संबंध विकसित होंगे और आवश्यकता पड़ने पर वे आपसे मदद ले सकेंगे।

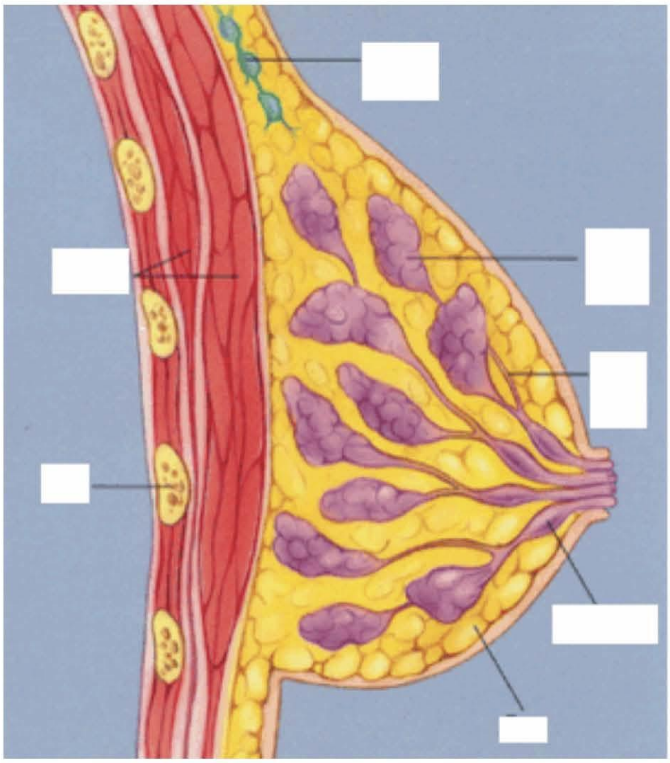
अभ्यास बिंदु :

याद रखें कि क्लीनिकल निर्णय लेने से पहले सभी क्लीनिकल सूचनाऐं प्राप्त कर लेनी हैं।

1. यह सुनिश्चित कर लें कि पेरीनियम साफ है और उसमें रक्त के पुराने धब्बे नहीं हैं।
2. महिला व बच्चे की सफाई करने के लिये पहले पानी को उबाल कर ठण्डा कर लें। केवल उबला पानी ही उपयोग करें।
3. प्रयोग में आने वाले तौलियों व अन्य कपड़ों को साबुन से धोकर और धूप में सुखाने के पश्चात ही उपयोग करें।
4. इस्तेमाल किये जा रहे तौलियों या कपड़ों को बदलते रहें इससे संक्रमण को रोकने में सहायता मिलेगी।
5. गंदे कपड़ों का प्रयोग किसी भी स्थिति में न करें। गंदे कपड़ों के प्रयोग से संक्रमण की सम्भावना बढ़ जाती है।
6. शौच के बाद महिला के हाथ साबुन से अवश्य धुलायें। साबुन के प्रयोग से संक्रमण की सम्भावना कम होती है।
7. लोकिया गंदा समझा जाता है। अत: लोकिया के कपड़ों का प्रयोग किसी भी स्थिति में न करें।

दूध निर्माण की कार्यकी

स्तन के इस चित्र को नामांकित करें



उत्तर पृष्ठ 64 पर देखें

दूध निर्माण एक सामान्य प्रक्रिया है जो प्रसव के बाद आरंभ होती है। इस प्रक्रिया का नियंत्रण हारमोन्स के द्वारा होता है। दूध के निर्माण के लिये शिशु का स्तन को चूसना आवश्यक है। स्तन में खराश (Rashes) रोकने लिये यह आवश्यक है शिशु का मुख स्तन पर ठीक से लगा होना चाहिये।

दूध निर्माण की कार्यकी

दूध का निर्माण प्रसव के पश्चात आरम्भ होता है। इस्ट्रोजन और प्रोजेस्टीरोन में कमी और शिशु के स्तन को चूसने की प्रक्रिया पिट्यूटरी के अगले खण्ड को उत्तेजित करती है। इससे प्रोलैक्टिन उत्पन्न होता है जो ऐसिनाई को उत्तेजित करता है जिससे दूध बनता है।

ऐसिनाई कोशिकाओं द्वारा बने दूध को चूचक (Nipple) तक पहुंचाना आवश्यक है जिससे कि शिशु उसे प्राप्त

कर सके। चूचक को चूसने से एंटीरियर पिट्यूटरी के साथ हाइपोथैलेमस और पोस्टीरियर पिट्यूटरी खंड भी प्रभावित होते हैं जिससे ऑक्सीटोसिन का निर्माण होता है। ऑक्सीटोसिन एल्वीलोआर के चारों और लिपटे पेशीय तंतुओं को संकुचित करती है जिससे कि ऐसिनाई में बना दूध लैक्टीफेरस डक्ट से चूचक की ओर जाता है। रुक-रुक कर चलने वाली यह गति (**Peristaltic Movement**) मिल्क इजेक्शन रिफ्लेक्स कहलाती है।

स्तन पान के समय चलने वाला तंत्र

उपरोक्त चित्र में दूध उत्पादन में अंत:स्त्रावी द्रवों और शिशु की भूमिका दर्शाई गई है।

दूध का उत्पादन लगातार जारी रहना शिशु के द्वारा चूचक को चूसने पर निर्भर करता है। शिशु जितनी बार चाहे और जितने समय तक चाहे उसे बिना किसी पाबंदी के स्तनपान कराना चाहिये। दूध उत्पादन के लिये मां को अच्छी खुराक और द्रव की पर्याप्त मात्रा मिलनी चाहिये। जब वह स्तनपान करा रही हो तो उसे साफ पानी मिलना चाहिये। यदि यह संभव न हो तो उसे बीस मिनट तक उबाल कर ठंडा करने के बाद पानी देना चाहिये। 20 मिनट तक पानी उबालने से उसके बैक्टीरिया मर जाते हैं। ठंडे पानी के लिये साफ बर्तनों की आवश्यकता होती है। गंदे बर्तनो में पानी रखने से पानी का उबाला जाना व्यर्थ हो जाता है।

स्तनपान के लाभ और संभावित लाभों को सूची बद्ध करें -

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संभावित लाभ

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उत्तर पृष्ठ 64 पर देखें

अभ्यास बिंदु :

स्तनपान से होने वाले लाभ की चर्चा मां से की जानी चाहिये जिससे कि वह समझ सके कि स्तनपान उसके बच्चे के लिये सर्वोत्तम है।

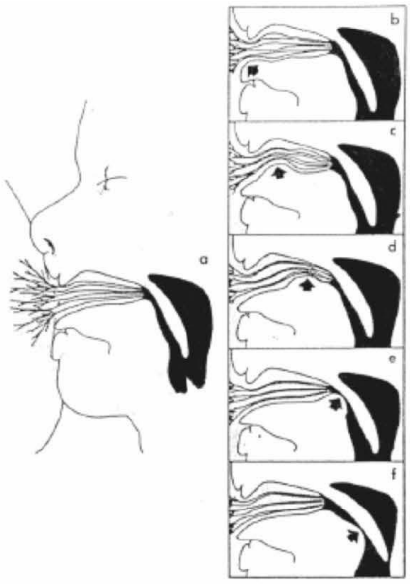
शिशु को स्तनपान कराने के बहुत लाभ हैं। स्तनपान प्रसव के तुरंत पश्चात्, एक घण्टे के भीतर प्रारम्भ कर दिया जाना चाहिये।

यह सुनिश्चित करें कि माँ अपना प्रथम दूध शिशु को अवश्य पिलाये। इस दूध को कोलेस्ट्रम कहते हैं। इसमें एंटीबाडी होते हैं जो शिशु को कई संक्रमण से बचाते हैं। देखा यह गया है कि माँ का पहला दूध बच्चे को न पिला कर फेंक दिया जाता है। यह परम्परा गलत है। कोलोस्ट्रम दूध नहीं है परंतु इसमें कुछ विशेष गुण होते हैं जो शिशु के पाचन तंत्र को तैयार करते हैं। शिशु के विकास में कोलोस्ट्रम की भूमिका अत्यन्त महत्वपूर्ण है।

सफल स्तनपान

सफल स्तनपान के लिये जरूरी है कि शिशु को सही ढंग से स्तन पर लगाया जाय। बहुत सी महिलाऐं यह तकनीक अपने परिवार की अन्य महिलाओं से सीखती हैं।

जैसा कि चित्र में दिखाया गया है शिशु को पूरा चूचक और एरिओला मुख के अंदर रखना चाहिये। स्तनपान नियमित अंतराल पर कराना चाहिये और एक बार में कम से कम 20 मिनट तक स्तनपान कराना चाहिये। देखा गया है कि महिलायें तभी स्तनपान कराती हैं जब बच्चा रोता है। यह तरीका गलत है।



चित्र1 पूरे सक चक को दिया गया है। शिशु को मीडियन सेक्शन में दिखाया गया है शिशु स्तनपान की अच्छी तकनीक दिखा रहा है। चूचक उसके मुख में अच्छी तरह हार्ड और सॉफ्ट पैलेट तक अंदर है। लैक्टीफेरस साइनसेज को चूचक के अंदर दिखाया गया है पर यह स्कैन में नहीं देखी जा सकती।

अभ्यास बिंदु :

यदि स्तन पान से संबंधित समस्या हो तो हमेशा स्तनपान होता देखें, जिससे कि यदि समाधान हो तो वह तुरंत किया जा सके।

परिवार नियोजन

माँ और बच्चे को स्वस्थ रखने के लिये और बच्चे का समुचित विकास सुनिश्चित करने के लिये यह जरूरी है कि दो बच्चों के बीच में समुचित समय अंतर हो। साथ ही यह भी जरूरी है कि दो या तीन से अधिक बच्चे न हों। कम अंतर पर बार-बार गर्भवती होने से महिला कमजोर होती चली जाती है। महिला के अस्वस्थ रहने से पूरा परिवार प्रभावित होता है।

अभ्यास बिंदु :

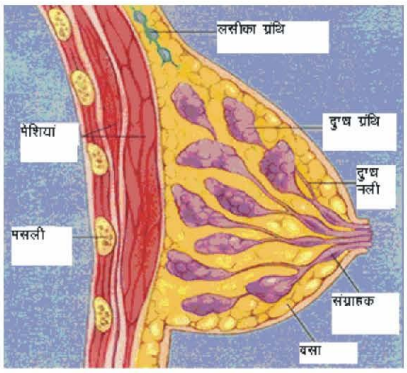
दो बच्चों के बीच में कम से कम तीन वर्ष का अंतर सुनिश्चित करने के लिये और बच्चों की संख्या सीमित रखने के लिये परिवार नियोजन साधनों के प्रयोग के लिये महिला और उसके परिजनों को प्रेरित करें।

परिवार नियोजन साधनों की जानकारी पति और पत्नी दोनों को दी जानी चाहिये। दम्पत्ति की आवश्यकताओं के बारे में जानकारी प्राप्त कर उनके लिये उपयुक्त परिवार नियोजन साधनों के बारे में बताना चाहिये। विभिन्न परिवार नियोजन साधनों के लाभ हानि का विवरण नीचे दी गयी तालिका में दिया गया है।

विधि	लाभ	हानि
निरोध	• प्रयोग में आसानी • स्वास्थ्य केंद्र पर भेंट आवश्यक नहीं • शरीर पर कोई प्रभाव नहीं • यौन संचारी रोगों से बचाव	• यदि तरीका ठीक न हो तो फट सकता है पति का सहयोग आवश्यक • कुछ पुरुषों को संवेदनशीलता की कमी की शिकायत
गर्भ निरोधक मिश्रित गोलियां	• लेने में आसानी • अत्यधिक प्रभावशील • गोलियों का उपयोग बंद करते ही प्रजनन शक्ति वापस आ जाती है • मासिक स्त्राव कम होने से रक्ताल्पता की संभावना कम	• बड़ी आंत से अवशोषित होती है अतः दस्त होने पर कम प्रभावशील • स्वास्थ्य कार्यकर्ता से नियमित भेंट जरूरी • यौन संचारी रोगों से सुरक्षा नहीं
गर्भनिरोधक केवल प्रोजेस्टीरोन	• स्तनपान कराने वाली महिलाओं के लिये उचित • 35 साल की आयु से अधिक की महिलाऐं भी प्रयोग कर सकती हैं • उच्च रक्तचाप वाली महिलाऐं भी ले सकती हैं	• प्रत्येक दिन निश्चित समय पर लें • स्वास्थ्य कार्यकर्ता से नियमित भेंट जरूरी • मिश्रित गोलियों जैसी प्रभावशील नहीं • अनियमित रक्तस्त्राव हो सकता है • यदि प्रभावी नहीं तो स्थलच्युत गर्भावस्था की संभावना
सुई से लगाये जाने वाला प्रोजेस्टीरोन गर्भ निरोधक	• तीन माह में एक बार • गोली लेने की आवश्यकता नहीं • इंजेक्शन लगते ही पूर्ण सुरक्षा • स्तनपान कराने वाली महिलाओं के लिये उचित • अत्यधिक प्रभावी प्रयोगकर्ता पर निर्भर नहीं • सिकल सेल से पीड़ित महिलाओं के लिये सर्वोत्तम चुनाव	• अनियमित रक्तस्त्राव या स्पॉटिंग हो सकती है • एक बार देने पर निकाली नहीं जा सकती • लंबे समय के प्रयोग के बाद प्रजनन शक्ति आने में कुछ समय लग सकता है • अमीनोरिया • यौन संचारी रोगों से सुरक्षा नहीं

भाग 3 के उत्तर

पृष्ठ 60 के उत्तर



पृष्ठ 61 का उत्तर

लाभ

पेट और आंत के संक्रमण से बचाव

मध्य कर्ण के संक्रमण (ओटाइटिस मीडिया) से बचाव

नेक्रोटाइजिंग एंटरोकोलाइटिस से बचाव

संभावित लाभ

लोअर रेस्पिरेटरी ट्रैक्ट संक्रमण से बचाव

यूरिनरी ट्रैक्ट संक्रमण से बचाव

मस्तिष्क के विकास में संभावित लाभ

एलर्जी विकसित न होने देने के लाभ

बाल्य काल में मधुमेह होने से बचाव

भाग - 4 : नवजात शिशु

1. गर्भाशय की बाहर के जीवन के लिये शिशु द्वारा अनुकूलन (**Adaptations**)
2. ताप नियमन (**Thermoregulation**)
3. नवजात शिशु की जाँच

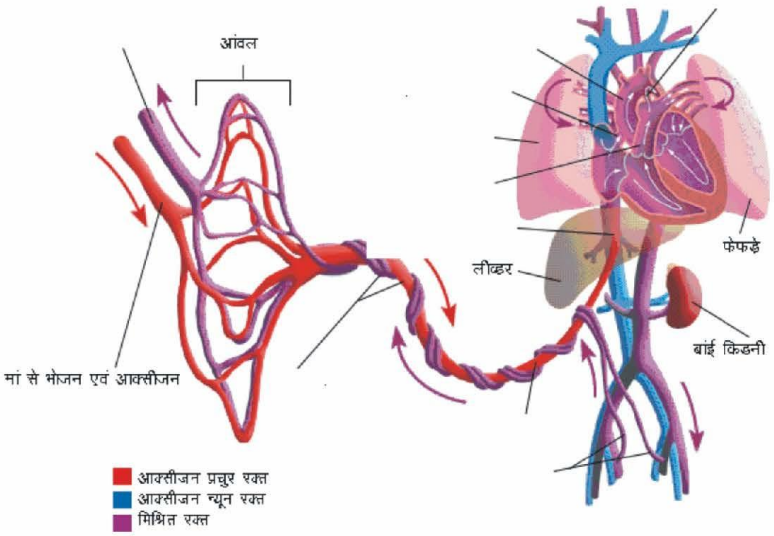
कार्यपुस्तिका के इस भाग को पूरा करने के पश्चात आप

- नवजात शिशु को जीवन के लिये अनुकूल बनाने वाली प्रक्रियाओं का वर्णन कर सकेंगे।
- नवजात शिशु के तापमान को नियमित रखने की आवश्यकता को बता सकेंगे।
- नवजात शिशु की जाँच कर सकेंगे।

गर्भाशय के बाहर के जीवन के लिये शिशु का अनुकूलन

भ्रूणीय रक्त संचरण संस्थान

इस चित्र को नामांकित करे



उत्तर पृष्ठ 71 पर देखें

गर्भावस्था में शिशु के जीवन व विकास से सम्बन्धित सभी आवश्यकतायें माँ के रक्त से प्राप्त होती हैं। माँ से रक्त प्राप्त करने के लिये शिशु के हृदय की दीवार में एक छोटा सा छेद होता है जिससे रक्त हृदय में एक तरफ से दूसरी तरफ आता जाता है। इसी तरह पल्मोनरी धमनी और एओटा भी एक नली के द्वारा एक दूसरे से जुड़ी होती हैं। जन्म के बाद जब शिशु स्वतः सांस लेने लगता है तो फेफड़े फैलते हैं और उनमें रक्त आने लगता है। इससे हृदय के अंदर दबाव बदलता है और हृदय की दोनों दीवारों के बीच का छेद और पल्मोनरी धमनी और एओटा के बीच की नली बंद हो जाती है।

गर्भ के अंदर शिशु के शारीरिक कार्यों का केंद्र आंवल होता है। शिशु से आंवल तक रक्त को लाने/ले जाने वाली रक्त वाहनियों से अंबलाइकल कॉर्ड बनता है। इन रक्त वाहनियों को जन्म के तुरंत बाद शिशु की रक्त हानि को रोकने के लिये काट कर बांध दिया जाता है। जब तक यह वाहनियां खुली रहती हैं वे शिशु के लिये रक्त आपूर्ति का मुख्य साधन होती हैं। प्रसव के बाद यह रक्त वाहनियाँ बंद होकर तंतुमय लिगामेंट के रुप में परिवर्तित हो जाती हैं।

श्वसन तंत्र

प्रसव के तुरंत बाद ही शिशु पहली सांस लेता हैं ताकि उसके शरीर की प्रत्येक कोशिका तक ऑक्सीजन पहुंच सके। जब शिशु जनन पथ से गुजरता है तो उसके सीने की दीवारें दबती हैं और इससे उनमें भरा द्रव नाक और मुख के रास्ते बाहर आ जाता है। इसी समय ऑक्सीजन और कार्बन डाई ऑक्साइड के दबाव में परिवर्तन होता है जिससे फेफड़ों की

रक्त आपूर्ति बढ़ जाती है। रक्त आपूर्ति बढ़ने से उसमें ऋणात्मक दबाव बढ़ता है जिससे कि पहली बार वायु ग्रहण करने में मदद मिलती है। वातावरण में तापमान परिवर्तन (गर्म से ठंडा) होने से भी शिशु के सांस लेने पर प्रभाव पड़ता है। परिपक्व शिशु के फेफड़े सरफेक्टेंट नाम के पदार्थ के कारण फैल जाते हैं और फैले बने रहते हैं। सरफेक्टेंट एल्व्हीओलाई की दीवारों को खुला रखते हैं। पहली सांस के साथ ही शिशु का रंग नीले से गुलाबी हो जाता है। शिशु को पहली सांस के लिये रोने के लिये चपत मारने की कोई जरुरत नहीं होती क्योंकि वह चपत के बिना भी सांस ले लेता है।

क्या करें और क्या न करें

- शिशु का श्वसन पथ स्वच्छ कपड़े से साफ कर उसका खुला होना सुनिश्चित करें।
- सुनिश्चित करें कि जन्म के कुछ मिनट के अंदर ही शिशु सांस लेना आरंभ कर दे यदि ऐसा नहीं होता तो उसे मदद की आवश्यकता है।
- सुनिश्चित करें कि कॉर्ड को काटने और बांधने वाले औजार जीवाणु रहित हैं।
- कॉर्ड के आसपास किसी तरह के संक्रमण के संकेत मिलते ही शिशु को तत्काल किसी चिकित्सक के पास उपचार हेतु रिफर करें।
- किसी ऐसी वस्तु का प्रयोग न करें जो साफ न हो।
- प्रसव के बाद शिशु को अकेला तब ही छोडें जब यह सुनिश्चित हो जाय कि वह सांस ले रहा है और उसका कॉर्ड बांध दिया गया हैं।

अभ्यास बिंदु :

सुनिश्चित करें कि प्रसव हेतु उपयोग में लाये गये सभी उपकरण अगले उपयोग से पहले साफ और जीवाणु रहित कर लिये गये हैं।

ताप नियमन (Thermoregulation)

प्रसव के समय शिशु के शरीर की गर्माहट किन रास्तों से कम होती है ?

1. .....
2. .....
3. .....
4. .....

विचार करें कि आप किस तरह गर्माहट बनाये रख सकती हैं?

1. .....

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2. .....

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उत्तर पृष्ठ 71 पर देखें

कुछ नवजात शिशु जन्म के तुरंत पश्चात ठंडे पड़ जाते हैं। इन बच्चों को माँ से चिपका कर रखने से उन्हें गर्म रखा जा सकता है। यदि बच्चा ठंडा पड़ने लगता है तो उसे तत्काल माँ का दूध पिलाना जरूरी है। बच्चे के ठण्डा पड़ने पर बच्चे में ब्लड शुगर की मात्रा तेजी से कम होने लगती है। यदि तत्काल माँ का दूध नहीं पिलाया गया तो बच्चे का मस्तिष्क खराब हो सकता है। अतः जन्म के तुरंत बाद माँ का दूध देना बहुत जरूरी है।

अभ्यास बिंदुः

माँ को यह बताना अत्यावश्यक है कि वह किस तरह शिशु के शरीर का समुचित तापमान (न अधिक गर्म न अधिक ठंडा) बनाये रखें।

जो शिशु स्वस्थ नहीं होते वे स्वतः मां का दूध नहीं पीते और बहुत रोते हैं। इसी प्रकार यदि शिशु में पानी की कमी है तो शिशु की एंटीरियर फ्रांटनेली अंदर की तरफ धंसी होगी। यदि आपको लगता है कि शिशु अस्वस्थ है तो देखें कि उसे कोई संक्रमण तो नहीं है। शिशु की श्वसन दर लगभग 50 प्रति मिनट और उसके शरीर का तापमान लगभग 37° से. होना चाहिये। यदि तापमान कांख से लिया गया है तो यह थोड़ा अधिक होना चाहिये। यदि शिशु अस्वस्थ है तो कॉर्ड का ध्यान से परीक्षण करें। यह अत्यन्त लाल हो सकता है, इसके चारों ओर छाले हो सकते हैं जिनमें से पीव या बिना पीव के बदबू आ सकती है। इस शिशु को उपचार के लिये तुरंत रिफर करना आवश्यक है।

कुपोषित शिशुओं को तात्कालिक परिचर्या और ध्यान देने की आवश्यकता होती है। उन्हें द्रव और पोषक पदार्थों की आवश्यकता होती है। कुपोषण दस्तों की वजह से भी हो सकता है। दस्तों की जांच व उपचार करें।

यदि बच्चा अस्वस्थ लगता है तो क्या करें ?

- यदि बच्चा देखने में बीमार लगता है और उसकी मसल टोन कमजोर है तो उसे चिकित्सक के पास भेजें।

- यदि बच्चे को बुखार है तो उसे चिकित्सक के पास भेजें।
- देखें कि बच्चे के किसी भी हिस्से में विशेषकर, शरीर परख आँखों में, कॉर्ड पर कोई इन्फेक्शन तो नहीं है। यदि है तो उसे चिकित्सक के पास भेजें।
- देखें कि बच्चा सही तरीके से सांस ले रहा है। यदि बच्चे की सांस ठीक से नहीं चल रही हैं तो उसे चिकित्सक के पास भेजें।
- यह ज्ञात करें कि बच्चा दिन में कई बार पेशाब और दस्त कर रहा है। यदि नहीं तो उसे चिकित्सक के पास भेजें।
- देखें कि बच्चा ठीक से माँ का दूध पी रहा है। यदि नहीं तो माँ की सहायता करें ताकि वह बच्चे को सही तरह से दूध पिला सके।

अभ्यास बिंदु :

माँ को बच्चों की बीमारी के संकेत बताना चाहिये। साथ ही बीमारी होने पर क्या करना है यह भी बताना चाहिये। शिशुओ से व्यवहार में शिशुओ की, आपकी और परिवार के सदस्यों की स्वच्छता अत्यावश्यक है। हाथ स्वच्छ रखने से ही बहुत अंतर पड़ सकता है।

नवजात शिशु की जाँच

नवजात शिशु की जाँच करते समय कृपया माँ को और परिवार के सदस्यों को यह अवश्य बतायें कि बच्चे को ठंड और किसी भी प्रकार के इन्फेक्शन से बचाना बहुत जरूरी है।

बच्चे की जाँच करने से पूर्व अपने हाथ अच्छी तरह से धो लें। हाथ धोने की विधि इस कार्य पुस्तिका में बताई गयी है।

नवजात शिशु की जाँच का उद्देश्य कोई भी ऐसी विकृति (Abnormality) का पता लगाना है जिसके लिये बच्चे को रिफर किया जाना जरूरी होता है।

बच्चे की जाँच विधिपूर्वक करें। जाँच बच्चे के सिर से प्रारम्भ करें और अंत में बच्चे के पैरों को जाँचें।

बच्चे की त्वचा : यदि बच्चे की त्वचा पीली है तो उसे खून की कमी हो सकती है जिसके लिये इलाज की जरूरत है।

बच्चे की पेशियाँ : यदि पेशियाँ कमजोर हैं तो बच्चे को चिकित्सक को दिखाने की आवश्यकता है।

श्वसन : यदि बच्चे की साँस तेज चल रही हैं तो उसे इन्फेक्शन हो सकता है। बच्चे का टेम्परेचर नापें और जरूरत पड़ने पर चिकित्सक को दिखायें।

टेम्परेचर : यदि बच्चे को बुखार है तो उसे डाक्टर को दिखलायें। यदि बच्चे में किसी प्रकार की विकृति दिखलायी देती हैं तो चिकित्सक को दिखलायें।

सिर की जाँच : बच्चे के सिर की जाँच करते समय बच्चे के सिर को लिपटा रहने दें। बच्चे के चेहरे को देखें। देखें कि बच्चे की दोनों आंखें हैं और लेन्स साफ हैं। यदि आँख के लेन्स के ऊपर कोई झिल्ली है तो चिकित्सक को दिखायें।

देखें कि बच्चे के कान हैं और वे सामान्य हैं। सिर के ऊपर से देखें कि बच्चे के फोटनल न तो बहुत छोटे हैं और न बहुत बड़े। किसी प्रकार की विकृति दिखने पर चिकित्सक से सम्पर्क करें।

हाथ : बच्चे की हाथ की पेशियों की जाँच करें और देखें कि वे सामान्य हैं। ध्यान रखें कि यदि Erb's Palsy है तो यह बगैर किसी इलाज के कुछ समय पश्चात स्वत: समाप्त हो जाती है।

Erb's Palsy

बच्चे की हथेलियों की जाँच करें। देखें कि बच्चे की सभी उंगलियां हैं। यदि कोई उंगली ज्यादा है तो चिकित्सक को दिखायें।

बच्चे की हथेली में एक से ज्यादा रेखायें होनी चाहिये।

पेट : पेट की त्वचा को ध्यान से देखें कि कोई इन्फेक्शन तो नहीं है। देखें कि बच्चे की कॉर्ड में कोई इन्फेक्शन नहीं है। यदि है तो तुरंत सेप्टीसीमिया हो सकता है। कॉर्ड सही तरीके से बंधी होनी चाहिये और उससे खून नहीं निकलना चाहिये। समय के साथ कॉर्ड अपने आप सूख जायेगी और अलग हो जायेगी।

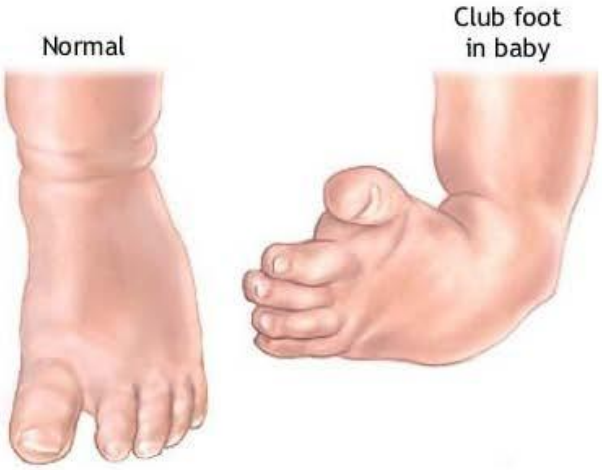
पैर : पैरों को ध्यान से देखें उनमें कोई विकृति नहीं होनी चाहिये। यदि क्लब फुट (**Club Foot**) है तो इलाज की जरूरत है।

जनन अंग : देखें कि जनन अंग सामान्य हैं। यदि लड़का है तो अण्डकोष सही स्थान पर होने चाहिये। यदि लड़की है तो उसकी योनि (**Vagina**) खुली होनी चाहिये। लड़के का लिंग टिप पर खुलना चाहिये, किनारे पर नहीं।

पीठ : बच्चे की पीठ की जाँच करें। बच्चे की पीठ का रंग सामान्य होना चाहिये। ध्यान रखें कि जन्म के समय के निशान या मसे इत्यादि लाल और उभरे हुये हो सकते हैं। यदि पीठ पर नीले रंग के दाग हैं तो चिन्ता करने की जरूरत नहीं है। यह सामान्य बात है।

बच्चे का मलद्वार देखें। यह खुला होना चाहिये। यदि ऐसा नहीं है तो चिकित्सक को दिखलायें।

वजन : बच्चे का वजन लें। यदि बच्चे का वजन 3 किग्रा से कम है तो वह गर्भ आयु के अनुपात में छोटा (**Small for Gestational Age [SGA]**) बच्चा है। यदि बच्चे का वजन 2.5 किग्रा से कम है तो तत्काल माँ को उसे दूध पिलाने को कहें ताकि बच्चे में ब्लड शुगर की मात्रा कम न होने पाये। ब्लड शुगर कम होने पर बच्चे का मस्तिष्क खराब हो सकता है और उसकी मृत्यु भी हो सकती है।



2.5 किग्रा से कम वजन वाले बच्चों को गर्म रखने की आवश्यकता होती है। अतः इन्हें जितनी जल्दी हो सके उतनी जल्दी सुखाकर कपड़े में लपेट कर रखना चाहिये।

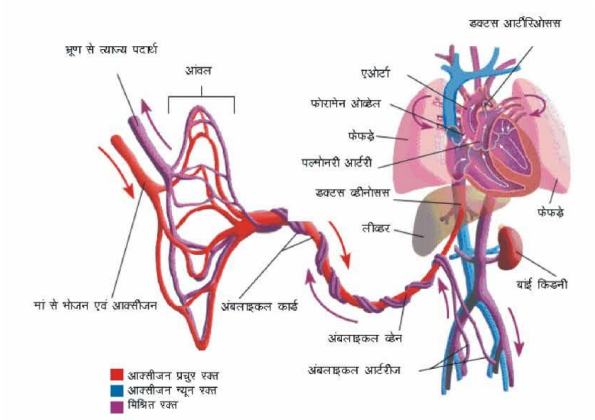
बच्चे के टेम्परेचर का अनुमान पेट या कांख से लगाना चाहिये, हाथ या पैर से नहीं।

यह देखें कि बच्चा ज्यादा गरम तो नहीं है। ज्यादा गरम होने पर बच्चे की अचानक मृत्यु हो सकती है। यदि बच्चा ज्यादा गरम है तो उसका ताप कम करने के लिये पेटिंग की विधि का प्रयोग करें।

माँ को बच्चे को नियमित रूप से प्रति दो घण्टे के अंतर से दूध पिलाना चाहिये।

भाग 4 के उत्तर

पृष्ठ 66 का उत्तर



पृष्ठ 68 का उत्तर

ताप नियमन

1 शिशु के नम शरीर से वाष्पीकरण द्वारा

2 शिशु के चारों ओर वायु के संवहन (Convection) द्वारा

3 शिशु के शरीर से ठंडी सतहों की तरफ विकिरण (Radiation) द्वारा

4 ठंडी सतहों या वस्तुओं के सपंर्क में आकर संचरण (Conduction) द्वारा आप ताप हानि कैसे रोक सकते हैं?

शिशु के जन्म के तुरंत पश्चात उसका नम शरीर सुखाने और लपेटने के लिये आपको सूखे गर्म तौलिये की जरूरत होगी। यदि आपको लगता है कि शिशु ठंडा हो रहा हो तो उसे आप मां के पास रखें और संभव हो तो मां की त्वचा के संपर्क में रखें ताकि मां के शरीर की गर्माहट शिशु को प्राप्त हो सके। यदि यह संभव नहीं है तो शिशु को किसी वयस्क के पास रखें। शिशु के शरीर के पास किसी गर्म उपकरण को न रखें क्योंकि वह शिशु की त्वचा को बहुत आसानी से जला सकता है। शिशु के सिर को कपड़े से ढंक कर रखें इससे सिर के बड़े भाग से शरीर का ताप निकलना कम हो जाएगा।

संदर्भ

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N O T E S

Appendix Two: DVD

This has been opened using a PC with multi media 6 software and a DVD player to ensure access availability

Appendix Three: Evaluation data

Knowledge and Skills in Midwifery (KASIM)

Evaluation results
26 February 2011

SN	Question	Options	No	%
1	Age at the time of foundation course of ANM	15-19 years	2	6.1
		20-24 years	14	42.4
		25-29 years	9	27.3
		30-34 years	5	15.2
		35 years and above	3	9.1
2	Since when working as ANM	1-4 years	9	27.3
		5-9 years	7	21.2
		10-14 years	3	9.1
		15-19 years	1	3.0
		20-24 years	7	21.2
		25 years and above	5	15.2
3	Usefulness of the Work Book	Very useful	33	100.0
		Useful		0.0
		Not useful		0.0
		Useless		0.0
		Cannot say		0.0
4	Have you got any new information from the Work Book	Yes	31	93.9
		No		0.0
		Cannot say	1	3.0
5	Have you used the information got from the Work Book	Yes	27	81.8
		No	4	12.1
		Cannot say		0.0
6	Do you like to read the Work Book	Yes	33	100.0
		No		0.0
		Cannot say		0.0
6.1	Can you understand the language of the Work Book	Yes	33	100.0
		No		0.0

SN	Question	Options	No	%
9	Do you think that some more information should be given in the Work Book	Yes	10	30.3
		No	10	30.3
		Cannot say	4	12.1
10	Do you understand the exercises given in the Work Book	Yes	24	72.7
		No	2	6.1
		Cannot say		0.0
10.1	Have you actually done any of these activities	Yes		0.0
		No		0.0
				0.0
10.3	Are these activities important	Very important	26	78.8
		Important	5	15.2
		Not important		0.0
		Useless		0.0
		Cannot say	1	3.0
12	Do you find the Record Book useful	Very useful	27	81.8
		Useful	2	6.1
		Not useful		0.0
		Useless		0.0
		Cannot say		0.0
13	Have you filled up the Record Book	Yes	24	72.7
		No	6	18.2
13.1	Any difficulty in filling up the Record Book	Yes	3	9.1
		No	26	78.8
		Cannot say		0.0
14	Have you seen the video	Yes	31	93.9
		No		0.0
		Do not know		0.0
14.1	How did you find the video	Very useful	28	84.8
		Useful	4	12.1
		Not useful		0.0
		Useless		0.0
		Cannot say		0.0

SN	Question	Options	No	%
14.2	Have you got new information from the video	Yes	29	87.9
		No		0.0
		Cannot say		0.0
14.4	Would you like to see the video again	Yes	33	100.0
		No		0.0
		Cannot say		0.0
15	Will you be able to do your task for effectively with the help of the Work Book and the Video?	Yes	33	100.0
		No		0.0
		Cannot say		0.0
16.1	Have you ever received such type of Work Book in the past	Yes		0.0
		No	33	100.0
16.2	Have you seen such video in the past	Yes		0.0
		No	33	100.0
17	Should this training material be made available to all your colleagues	Yes	28	84.8
		No		0.0
		Cannot say		0.0
18	Can you use this Work Book along with your routine activities	Yes	32	97.0
		No		0.0
		Cannot say	1	3.0
19	Has the 3 day workshop been useful	Yes	31	93.9
		No		0.0

New knowledge received

1. How to fill up the Partograph
2. Examination of the mother and the child
3. Diseases of neonates
4. Cataract
5. Identification of heart disease on the basis of lines in palm
6. Waiting time for the placenta to come out
7. Blood examination and measurement of height and weight
8. Breastfeeding
9. Body mass index
10. Arteries and veins in the chord
11. Washing of hands
12. Cleaning of the child
13. Antenatal care examination
14. Counselling skills

15. Checking points during delivery
16. Increase in plasma during pregnancy
17. Reasons for edema during pregnancy
18. How placenta provides food and oxygen to the foetus
19. How placenta is separated
20. Production of breast milk
21. Position during delivery
22. Record keeping
23. Identification of high risk

Suggestions

- Training through video and work book is very good. Similar training programme should be organised repeatedly preferably at the primary health centre/community health centre level.
- Such training programme should be organised for other female health workers.
- Training material (Work Book, Record Book and Learning Video) should be provided to all female health workers.
- Information about managing high risk deliveries and delivery complications should also be given.

Appendix Four: Concept Analysis theory

Concept Analysis

Critical theory as an approach to an inquiry has become a popular method employed within nursing to clarify concepts which are in common use, but take on different meanings dependent on where they are used. Clarifying commonly used concepts has enabled the profession to understand their meaning within the context of professional practice. Analysing concepts has been a focus in many studies within the profession of nursing practice (Hook 2006, Thompson 2005, Purdy 2005, Baldwin 2003). Most of the concepts are those in which there appeared to be a general understanding of their meaning but lacked clarity within the context of nursing (Baldwin 2008). Even when a common language such as English is used, and the individuals are from different cultures they may assume a common understanding but their culture defines the words differently. As culture encompasses all aspects of peoples understanding of their personal context, belief and value system, it may also affect their comprehension of commonly used concepts. Central to this method is critique (Chinn 2010), an activity which is not just problem solving but encourages exploration of the political and social structures as concepts are considered to be defined by their context (Shambrook 2008). Cronin, Ryan and Coughlan (2010) draw attention to the complexities of defining a concept. They explore the philosophical debate and conclude that the language used is not the concepts themselves but a means of expressing them. Walker and Avant (2005) suggest that concepts are an imaginary image of a phenomena which maybe an action, an idea or a thing. Each individual has their own interpretation of what a concept means to them and it cannot be represented completely by the written or spoken word (Beckwith et al 2008). Developing an understanding of a concept within its context offers some enlightenment to its comprehension by those using it. Taken- for -granted understanding has the potential for causing confusion and negative situations that could be avoided if some clarity of joint understanding had been created. However, Weaver and Mitcham (2008) suggest that concepts are not fixed but evolve over time as society changes and develop.

Analysing concepts has been the focus of several authors (Wilson 1963, Morse 1995, Schwartz-Barcott and Kim 2000, Rodgers 2000, Walker and Avant 2005). Methods for their analysis have been developed over the past fifty years, commencing with Wilson in 1963, who developed an eleven stage method for his students undertaking entrance examinations for university (Beckwith et al 2008). He taught his students to delineate the criteria of the concept so that the appropriate use of the words could be identified (Cronin, Ryan and Coughlan 2010). His purpose was not a scientific rigorous process for providing evidence but has been the basis for the development of other methods within nursing.

Two schools of concept analysis have developed; the entity view which emphasises the de-contextualisation of a concept, which reduces it to finite elements, whilst the dispositional view is that concepts are dynamic and that their meaning changes depending on the context within which they are used (Garbett and McCormack 2002, Baldwin 2008). Schwartz-Barcott and Kim (2000) method was developed to encompass both the theoretical with the empirical, so that it has an impact on practice and is not just theoretical. Their method has three distinct phases which leads from the theoretical exploration of the literature which acts as a basis for the empirical phase of collecting data from practice. The final stage is the final analysis and writing up. The first two stages are simultaneous so maintain the focus and critical approach. Whilst this model is based on Wilson's model, it has a very practice functional focus. Rodger's (2000) model subscribes to the view of Weaver and Mitcham (2008) that the usage and application of concepts change. Her evolutionary approach has six steps to clarify the concept in the context that it is being used. She does advocate exploring all usage of the concept within the associated disciplines. The activities within this model replicate those in the other models. Her data collection activity is set within the range of disciplines which are also associated to one that requires some clarity. A research method of collecting the data is stressed as it ensures that the process has rigor. Having a clear strategy with inclusion and exclusion criteria must be identified as it is not possible to access all the literature available or managed (Rodgers 2000). Data analysis is on the "raw data" rather than using cases studies which is an acceptable approach of other models. Unlike the Schwart-Barcott and Kim (2000) model, Rodgers advocates that the analysis is completed after all the data has been collected. The characteristics of the concept should be drawn from the data, not to validate any pre-conceived ideas of the researcher. This model demands a scientific approach with a rigorous clear strategy but Rodgers expects the usage of concepts may change (dispositional view) and are not fixed in time or setting. Walker and Avant (2005) however have a rigorous approach to their method, but see the final analysis as a "true" interpretation and not changing (entity view). This method also is based on Wilson's approach but is a more focussed design. Their eight step method involves the use of all cases and uses of the concept to identify antecedents and consequences so that the definition can ascertain. There are fundamental differences in the approaches to the analysis which are related to the epistemological and ontological foundations of the models used. Usage of a concept is dependent on the context within which it is used, which can be either colloquial or scientific. However, in nursing there are close relationships with clients, whose understanding of a concept may be colloquial. Therefore it is limiting to contain the evidence to inform the analysis to being purely discipline focussed, which can reduce the understanding of the usage of the concept within

different contexts and therefore minimise the theoretical definition. Hupcey and Penrod (2005) discuss the notion of concept "maturity", which is related to how well the concept has been defined by its characteristics, boundaries, its preconditions and outcomes.

All these methods used in nursing have a focus on practice related concepts, which can add to the body of existing knowledge which in turn informs practice. Of these methods the evolutionary approach by Rodger (2000) appears to be the most realistic and robust but in light of the usage of partnership is both colloquial and scientifically within care and research a more broad approach will be used. This will include cases in participatory research, organisations and published concept analyses.

Analysing a concept has been a focus in many studies within professional nursing (Hook 2006,Thompson 2005, Purdy 2005,Baldwin 2003). Most of the concepts are those which there appeared to be a general understanding of their meaning but this lacked clarity in a different context such as nursing (Baldwin 2008).

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