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Health risk behaviours among university students in Saudi Arabia

By

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ABSTRACT

This thesis investigates the features of common health risk behaviours (HRBs), namely, violent behaviours, sexual behaviours, smoking, drug use and unhealthy dietary behaviours, and patterns of engagement with these HRBs, among students at a Saudi university. The study includes a literature review covering the underlying reasons and consequences of HRBs, and explores existing theoretical models of HRBs in order to construct an appropriate theoretical model which underpins and guides this investigation. A mixed methods research methodology was used; quantitative data was collected using a questionnaire-based survey administered to 722 respondents, and qualitative data was collected using a series of interviews with 17 students. The elaborated theoretical model developed from the findings of the study may offer a more accurate understanding of HRBs amongst students at this Saudi university. In addition, the theoretical model may help to inform HRB-related research more widely across universities in Saudi Arabia and beyond. Key findings point to high levels of smoking, risky driving and violent behaviours, moderate levels of alcohol and illegal drug consumption, and physical inactivity and unhealthy diet. Students did not report serious sexual risk behaviours. Furthermore, such HRBs are influenced by traditional practices, gender, age, influence of other HRBs, the current legal system, globalisation, and lack of awareness. These practices are well-aligned to three major levels of influence: the intra-personal, public engagement and socio-cultural. Policy and practice implications arising from the findings are discussed.

Supervised by: Dr Jenny Byrne and Professor Marcus Grace

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DECLARATION OF AUTHORSHIP

I, Saad Zafir G. Alshehri, 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:

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

Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

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

Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

I have acknowledged all main sources of help;

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;

None of this work has been published before submission [or] Parts of this work have been published.

Signed: Saad Zafir G Alshehri

Date: 25-10-2016

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Glossary of terms and definitions used in categorising and analysing HRBs

State: the current situation in University X with respect to the types and prevalence of HRB engagement among the students.

Type: the different activities/ behaviours that are subsumed under the HRB umbrella such as smoking, drug abuse and behaviours that contribute to vehicle accidents.

Factors/ risk factors: conditions and variables associated with lower likelihoods of positive outcomes and higher likelihoods of negative and/or socially undesirable outcomes. In this study, these factors have been classified from the theories and models across different disciplines, such as individual/self, peers, family, university and community.

Reasons: the overarching circumstances that University X students experience and which appear to influence involvement with HRBs. These circumstances are organised into five factors (see above) namely (self/individual, peers, family, university and community) and they include personal beliefs and behaviours (such as low self-esteem and boastfulness), social actions (such as poor law enforcement and campaigns by the government), and context (local culture and globalisation). These reasons are more specific than the factors but they interact with the factors and levels and there may be one or more reasons for HRBs within one factor. They explain why a number of students at University X are involved in several HRBs, why some HRBs are more evident than others and why they occur within the University.

Levels: three broad levels represent the social ecology of the participants. These are intra-personal, socio-cultural and public engagement. The categorisation helps to explain how different factors and reasons are associated within a level as well as how they are connected to and interact with other factors and reasons at a different level.

Pattern: the recognisable similarities or differences in aspects of the data such as the gender of the research participants, religious and cultural influences on them, and the nature of the relationship between the factors, levels and reasons for HRBs. Patterns help to illustrate and explain the complexity of HRBs in University X.

Chapter 1 : Introduction

1.1 Background

There is a rising concern about public and individual health across the world. Although the concept of preventive medicine was in practice prior to the 20th century, it is during the 20th century that health professionals started viewing 'the relationship between personal behaviours and health and illness' as an important issue in healthcare (Rothstein, 2003). In the past, people were generally interested in health only when they were actually sick, but not necessarily when they were engaged with risky behaviours (WHO, 1998). Towards the end of the 20th century, there was more focus on health risk behaviours (hereinafter the term 'HRBs' is used) as people began to understand more about their health and accept the 'statistical evidence that specific behaviours, and characteristics of healthy persons, called 'risk factors', can increase the probability of developing disease, especially chronic disease' (Rothstein, 2003, p2). In fact, people started believing that reducing the levels to which they engaged in risky behaviours would reduce their chances of developing diseases and sufferings from those. This gave a rise to the lifestyle theory which postulates that people's lifestyles affect the qualities of their health (Rothstein, 2003). The gist of the theory is that people make individual health choices that may be at odds with societal norms, laws, and medical advice. The theory has its basis in the relationship between individuals and society. While people may have individual desires, these may be in conflict with the society, owing to the negative outcomes linked to those desires (LeFebvre and Franke, 2013). For example, individual interests may lead one to engage with dangerous driving, whereas society is against dangerous driving and the possible

negative outcomes of such behaviour. However, lifestyle theory can lead to victim blaming; so although voluntary lifestyles affect health, there are instances when health is affected negatively by other lifestyle determinants, such as socioeconomic factors (Dahlgren and Whitehead, 1991). For example, a person may eat cheap and unhealthy food due to his/her low socioeconomic status, but not necessarily because of his/her choice.

Even with the increased concerns and information about health risk behaviours and their effects on health, there are still many people who expose themselves to risk factors. Richter (2010) and Akala and Semini (2010) noted that HRBs among adolescents were minimal in the past, but the 20th and 21st century have seen a steady increase in them. According to Pates and Riley (2012), Middle East nations, including Saudi Arabia, are experiencing a 'youth explosion' or a rapid increase in young people wanting more freedom and therefore pursuing more risky behaviours. The result has been a predictive factor in the increase of HRBs within that age group in the country. This increase in risky behaviours has led to undesirable health outcomes for the said group. According to Rothstein,

[A risk factor]... is a pattern of behaviour or physical characteristic of a group of individuals that increases the probability of future occurrence of one or more diseases in that group relative to comparable groups without or with different levels of the behaviour or characteristic (Rothstein, 2003 p. 2).

There are different risky behaviours that people engage in and which affect their health, including bodily harm (Rothstein, 2003). These include smoking, drug abuse, drinking, reckless sexual behaviour, dangerous driving, dietary risk behaviour, violence,

and lack of physical activity (DiClemente et al., 2009, Tulchinsky et al., 2009, Akala and Semini, 2010, Leech, 2010).

Diseases and other health risk outcomes are caused by multiple internal and external factors. At the internal level, individual characteristics such as pre-disposure to risk taking behaviours and awareness on risks influence whether or not the person engages in HRBs (Bonino et al., 2005b, Tulchinsky et al., 2009). Similarly, the external factors that influence HRBs include community, family, university and peers, and can be of positive or negative influence. Therefore, when an individual lives in an environment that is supportive of engagement with HRBs, he/she is more likely to adopt the risky behaviour and will expose himself/herself to the negative consequences to his/ her health. On the other hand individuals that live in an environment that disapproves of HRBs are more likely to stay away from such behaviours.

While both the causes and consequences of the voluntary engagement with HRBs were minimal in the past, they increased steadily after the 1960s and the trend has continued ever since (Rothstein, 2003). As a result, health professionals have increasingly found it necessary to raise the general public's awareness about the need to live their lives without exposing themselves to preventable risk factors. For example, there has been increased sensitisation about road safety, healthy eating, and the negative effects of drinking, smoking, and drug use, among others (Spruijt-Metz, 1999). Even so, these developments have mainly been recorded in the West but the Middle East has seen minimal advancements in relation to health risk awareness whilst recording increases in engagement in HRBs (Rothstein, 2003). In the Middle East, Sabra et al. (2007) found that the levels of awareness about HRBs among the students at

King Faisal University in Saudi Arabia were low. Similarly, Fageeh (2008b) found that high percentages of university students in Saudi Arabia were not fully aware of HRBs and their consequences. However campaigns to increase awareness of HRBs in the West do not necessarily result in a consequent lowering of the levels of HRBs. For example, the United States has recorded some of the highest levels of HRBs and their negative consequences and understanding why people engage in HRBs (Rothstein, 2003).

The studies by Sabra et al. (2007) and Fageeh (2008b), based on the Saudi context, show that, although there are advancements in the health sector about HRBs and their consequences, the adolescent and youth population largely remain unaware of such developments. Concerns about HRBs among young people worldwide is high in the health sector because, according to Bonino et al. (2005a), adolescence is a period when physical and mental developments are at a peak and these changes may lead to what other psychologists term as a 'crisis' period. Crisis is in this case placed in quotations because it is believed to symbolise experiences that may seem as crises but actually help to define development positively (Erikson, 1980). From these perspectives, adolescence can be regarded as a time of high risk but also of great opportunity to fulfil one's potential.

Adolescence is important because it is a period when individuals have specific tasks to fulfil in line with their development and the expectations of society. Bonino et al. (2005b) stated that teenagers have three major universal tasks. The first group of tasks is related to 'puberty and sexual maturation'; the second one is to 'personal and social interests and the acquisition of hypothetical and deductive reasoning', and the third

one is to 'identity construction and the reorganization of the concept of the self' (Bonino et al., 2005b, p13) .

Bonino et al. (2005b) claimed that these three groups of tasks constitute the general framework that forms the basis of discussions on other developmental tasks during that period of growth. In relation to cognitive and sexual development, adolescents are expected to form distinct identities that would allow them to 'face the world in an autonomous, responsible, and coherent way' (Bonino et al., 2005b, p13). In line with these expectations, adolescents are expected to be explorative in the processes of identity development and sexual orientation (Swanson et al., 2000, Roth et al., 2006, Brown et al., 2007, Mbah, 2014). On the other hand, hypothetical and deductive reasoning call for behaving in ways that are socially responsible, which include developing intellectual competence and knowledge acquisition, and establishing and maintaining mature and constructive relationships with peers, amongst others (Bonino et al., 2005b). These 'tasks' may cause conflict in the developing identity of adolescents as move towards adulthood. HRBs emerge when teenagers are unable to control their desires as they anticipate adulthood (Leech, 2010). For example, they may smoke, drink, and engage in risky sexual behaviour among others as part of constructing their identities and fitting into the social contexts that they find themselves in (Bonino et al., 2005b, Leech, 2010). Richter (2010) stated that HRBs are some of the inappropriate ways used by teenagers to cope with the developmental tasks. Yet, teenagers may use HRBs as ways of escaping the confusion that comes with development. According to Bonino et al. (2005), excitement triggers the desire for adolescents to take part in HRBs through which they feel they can 'reinforce their

personal identities, feel like they are part of the group, and test their abilities' (Bonino et al., 2005, p.110). In this sense, HRBs are seen as escape routes for the 'crisis' that teenagers go through (Leech, 2010).

However, experimentation and risk taking are part of the adolescents' processes of attaining autonomy (Wolfe et al., 2008) and while some adolescents engage in HRBs, there are young adults who act in a socially responsible manner and do not consider undertaking activities that would be regarded as HRBs, but might explore their identity development in other less risky ways (Wolfe et al., 2008). This means that even with the universal umbrella of developmental capabilities, there are differences amongst individual young adults which determine whether they engage in HRBs or not. Various external factors or environments may also influence a particular group of young adults acting in similar manner regarding risk taking and being involved in HRBs. It is therefore important to study the pattern of risky behaviours of a certain group of young adults through investigating their individual views and practices of risky behaviours along with their surrounding situations such as family, peers and even the educational institution where they study.

1.2 Research on HRBs in Saudi universities

According to Sabra et al. (2007) and Fageeh (2008b), HRBs are increasingly common among the teenagers and young people in Saudi Arabia. The conservative nature of the Kingdom of the country has influenced the extent to which HRBs such as premarital sex and drug abuse are engaged in by limiting their prevalence (Fageeh, 2008). Even so, there has been a steady influence of Western culture and, as such, more teenagers

and young people take part in the HRBs cited above, as well as others including reckless driving, violent behaviour, smoking, unhealthy eating, and physical inactivity (Gańczak et al., 2007, Al-Hazzaa et al., 2012). The fact is that there is minimal awareness about the health risks connected to the engagement with HRBs exacerbates the situation (Sabra et al., 2007). There is a minimal research about different HRBs that university students in Saudi Arabia may be engaging in. This lack of adequate data and accurate information means that health education interventions are unlikely to be efficiently and successfully implemented, thus aggravating potentially harmful situations. It is therefore important to rigorously explore the HRB situation among the young adults within the Saudi university context. Whereas the existing studies related to risky behaviours among Saudi nationals mainly discuss the types and rates of several HRBs, for a comprehensive understanding of the state of HRBs, the associated reasons need to be identified. It can be expected that the reasons of HRBs would help explain how the young adults of Saudi Arabia who study at universities are engaged with HRBs and the influences of the various associated factors such as family, society and university on them to be engaged with these risky behaviours. This type of exploratory and qualitative study is not only absent in the context of Saudi Arabia but it appears to be missing in the on-going research on HRBs around the world.

1.3 Research Questions

The research sets out to examine the level and nature of HRBs among the students at a particular Saudi university, herein referred to as University X. Therefore, the overarching research question of this thesis is ‘what are the patterns of health risk

behaviours among the students at University X?' This is explored through the following four research sub-questions:

- I. What is the present state of HRBs among the students at University X in Saudi Arabia? (please refer to the Glossary, on page XIII, for the definition of 'state')
- II. Why are some students at University X engaging in some HRBs more than other students?
- III. Why are some students at University X engaging in some HRBs more than other HRBs?
- IV. What are the influences of University X that affect students' HRBs?

To explore these research questions, a mixed-method research approach was implemented involving a questionnaire-based survey and a series of structured interviews (See Chapter 6 for a detailed discussion of the methodology).

1.4 Research context and personal attachment

1.4.1 Research Context

The Kingdom of Saudi Arabia is more popularly known as Saudi Arabia. Its location is in the South West of Asia and it makes up the greater part of the Arabian Peninsula (Al-Rasheed, 2010). It amasses a total land area of 2,150,000 km² or 830,000 square miles (Saleh and Elzahrany, 2009). The country is surrounded by Jordan and Iraq at the North, Kuwait to the Northeast, Bahrain, and the United Arab Emirates to the East, Oman to the Southeast, and Yemen to the South (Al-Rasheed, 2010). Furthermore, the country contains 13 regions (See Figure 1.1).



Figure 1.1: Map of Saudi Arabia

Saudi Arabia was founded by King Abdulaziz bin Saud in 1932 and has since adopted the system of absolute monarchy (Al-Rasheed, 2010). In its expanse, Islam is the only religion that is practised in the Kingdom and it permeates all aspects of living through the Sharia which is a framework that contains a combination of the Holy Book of Muslims and Hadith (Vassiliev, 2013). The Hadith is a description of what the primary prophet, Mohammed said or did (Vogel, 2000). The two sources discussed provide the foundations and background for legislations and policies that are implemented in the Kingdom.

Saudi Arabia is the home of 29.898 million people (Bradley, 2015). Among this population one third are migrants, numbering around 9,060,433 (Bradley, 2015). A unique feature of the population is that young people predominate, with approximately 37 % of the total Saudi Arabian population below 14 years of age (Al-

Rasheed, 2010, Bradley, 2015). Furthermore, whilst 51 % accounts for young people under the age of 25; when the under-29 population are included, these young people make up two-thirds of the total population (Robertson and Al-Zahrani, 2012). This unique demographic nature of Saudi Arabia presents a number of challenges to the Saudi Government in managing HRBs among the young population by providing services, such as health, social care and proper education (Robertson and Al-Zahrani, 2012).

In recent times, the Kingdom of Saudi Arabia has had a dynamic and swift development among countries in the world. For example, this growth and development have provided positive effects such as wider educational facilities, easier transport and communication options and higher income for Saudi Arabians.

Conversely, unemployment, which is estimated about 30-45 percent in the country, is one of the highest rates in the world (The Central Intelligence Agency, 2012).

Uncontrolled migration of workers with low salaries is the main cause of taking the jobs away from Saudi Arabian youths. The majority of Saudi families have house helpers such as housemaids, drivers, and other servants who do the basic house work. These people compete to serve all family members and are much relied on for their help and support (Dickson, 2015). However, because of the prosperity in the Kingdom, many people in Saudi Arabia do not need to work and thus live an idle and luxurious life, for example by eating rich food, remaining inactive most of the time and driving everywhere. These behaviours and attitudes contribute to adopting new but less healthy life styles mainly among the children and young adults.

Notwithstanding the fact that the migrants to Saudi Arabia have greatly contributed to the country's economy by providing manpower in building infrastructures within a short span of time, it also has its drawbacks (Niblock, 2015). One example would be that those workers come from marginalised parts of the world and therefore have higher chances of inadequate information and education about HRBs. As soon as they arrive in the country, they have few opportunities to access the Saudi public services such as health and education. Hence, this lack of integration for approximately one third of the whole population of the Saudi society can affect the social and demographic population and may lead to several barriers for promoting healthy lifestyles in the Kingdom (Midhet et al., 2010). The young adults and the students of Saudi higher educational institutions may then be influenced by these people as they are connected to them personally, socially and within university setting. For example, many Saudi university students have house helpers who are foreign migrants. Similarly, these students frequently come into contact with migrants when they go to restaurants and shops, where the migrants work and provide services. Therefore, today's young Saudis may be exposed to different behaviours than in the previous generation.

Further, Saudi Arabia has been constantly exposing itself to the global context which has had profound effects on the values of this conservative society (Robertson and Al-Zahrani, 2012). This exposure, which is accompanied by knowledge transfer from other countries, is further enhanced through the use of modern telecommunication approaches, resulting in a seemingly borderless nation with both the surrounding countries and faraway countries with different views and morals. This time of rapid

change has become a challenge for Saudi Arabia as the influence of the foreign cultures is triggering various elements of risky attitudes and behaviours, including HRBs among the people of the country (Midhet et al., 2010). The next paragraphs discuss some educational approaches to tackle this problem.

In Saudi Arabia, education is considered as a catalyst to promote healthy lifestyles by confronting HRBs (ALdayel et al., 2011), which is being implemented and achieved through formal and/or non-formal education. Formal education is delivered in educational institutions; either government or privately supported (ALdayel et al., 2011). On the other hand, non-formal education sources, such as learning from family, religious teachers and mass media, are also influential in tackling HRBs. However, the main challenge of utilising education to prevent the young adults from engagement with HRBs is the lack of collaboration and partnership between the different educational bodies and institutions in the society (Smith and Abouammoh, 2013). However, a number of traditional approaches of education, and many of them are non-formal, do not seem to be useful to reduce and tackle this challenge (Alamri, 2011).

The higher education system in Saudi Arabia is relatively new; the first university was established in 1957 (Royal Embassy of Saudi Arabia, 2015). According to the Ministry of Education (2015), there are 27 government universities and 28 private universities in the country. Additionally, there are more than 270 colleges and institutes all around the Kingdom which are delivering higher education, under the tutelage of the Ministry of Education (Alamri, 2015). Despite the increase and progress as seen in the numbers of higher educational providers, there are concerns about the quality of learning and

teaching throughout the education system (Ministry of Higher Education, 2012). The needs of the young people are not being met as traditional educational methods are still employed to educate the students at both general and higher educational institutions (Alamri, 2011). There is also a lack of effective initiatives by broader societal sectors, including the educational institutions, about various risky behaviours such as vehicle injuries and accidents (Abou-Zeid et al., 2009), and the promotion of healthy lifestyles by higher educational institutions is still minimal (Abou-Zeid et al., 2009). Indeed, promoting and advocating health education also lacks appropriate pedagogy and resources (Shaikh, 2011).

In reality, the educational policies, legislations and regulations are not regularly updated by the Saudi government with modern educational concepts and procedures (Al-Rasheed, 2010). As a result, various essential aspects of education, such as health and social responsibilities, are missing in the curricula and syllabuses (Al-Rasheed, 2010). These formal challenges are aggravated because there is a limited number of social institutions, such as clubs and community centres, in the country which could help the Saudi people in promoting health education and the consequences of risky behaviours in formal ways.

According to the statistics of Saudi Arabia's Ministry of Higher Education, colleges and universities of the country currently enrol more than 943, 275 students, the majority of whom are aged between 18 to 24 years (Ministry of Higher Education, 2012). Three quarters of the students of this age group attend their college full-time. It may be expected that the college years of these students provide valuable opportunities for interventions to prevent premature morbidity and mortality by discouraging the

initiation or continuation of harmful health-related behaviours, such as tobacco use and reckless driving (Wechsler et al., 1998). However, whereas there have been some health education and promotions going on in the country, they seem to be general and, as far as this study is aware, there are yet to be such initiatives specifically targeting the university audience. Moreover, whereas reactive measures, including imposing laws, were regarded as necessary to protect these young people in Saudi Arabia, they have not been effective. For instance, in 2004 the country imposed a law banning smoking in public places following the signing of the 'Framework Convention to Tobacco Control' (FCTC) with the aim to reinforce the tobacco ban in the country, with special attention given to young people. This was targeted at reducing mortality and morbidity rates related to tobacco consumption (Al Moamary, 2010). Despite putting this law into practice, Saudi Arabia was ranked fourth in the world for tobacco importation in 2004 (Al Moamary, 2010). Additionally, whereas the government of Saudi Arabia has elaborate traffic laws and fines, it is reported that traffic accidents arising from non-use of seat belts, violation of traffic regulations, improper turning, and excess speeding account for the greatest proportion of admissions in the trauma sections of the country's hospitals (Mansuri et al., 2015).

The above state of affairs highlights the extent of risk exposure, especially for young Saudis, including those at universities. Most importantly, the above scenarios reinforce the need for proactive interventions, such as targeted behavioural change initiatives, besides reactive interventions.

1.4.2 Personal attachment of researcher

This researcher has more than ten years of work experience that started with one year as an elementary science teacher before moving to an education college at a Saudi university in 1998 to work as a tutor until 2002. He studied at Umm Al-Qura University for a Master's degree for the next three years. Following graduation, he returned to the College of Education as a lecturer for another four years until 2009.

As a tutor and lecturer, he participated in several scientific seminars and lectures in the Curriculum and Instruction Department (CAID). He prepared and delivered a number of informative lectures about the dangers of drugs, smoking and AIDS to the faculty in order to equip them to teach health education to their classes. In addition to his teaching and administrative responsibilities, he was in charge of the 'Teacher Training Unit,' which supervised elementary and secondary school science student-teachers. Moreover, he taught subjects at the same college such as Science Education, Elementary Education Curricula, General Curricula, General Teaching Methods, Scholastic Activity, and Methods. Later, he developed a range of administrative experience in the higher education sector. Working as a team member with other researchers at CAID, he engaged in the evaluation and assessment of several courses for high schools. He worked with a team of field researchers consisting of CAID instructors and researchers. In addition to working as a team member, he has also chaired many 'Administration and Registration' committees.

Three major reasons contributed to this researcher choosing the direction of this thesis. Firstly, while teaching science, it became apparent to him that there was a need to develop specialised curricula for Health Education/ Promotion and to integrate it

into general science textbooks for all levels of education. The researcher's aspiration has been to assimilate the best Western health practices, comparing, and integrating them with the requirements in Saudi Arabia, in order to overcome the widespread lack of awareness of the dangers of poor health practices in the Arab world. Secondly, the dearth of specialists in Health Promotion in Saudi Arabia, of which there are fewer than ten experts, motivated him to choose this field in order to serve the five million students in higher and public education in one of the most rapidly growing countries in the world. Thirdly, the researcher wishes to establish the first Health Education Promotion Department in the Arab world within a university setting, which requires a comprehensive understanding of the nature, features and patterns of HRBs among the university students of the region. Through this doctoral research, this writer is optimistic to gain the necessary knowledge and skills of HRBs and also about healthy lifestyles which he wants to disseminate to the wider Saudi community. The researcher hopes that the proposed department will serve as a platform for the hundreds of universities in the Arab world and create opportunities to promote healthy lifestyles through awareness raising programmes, training, workshops, publications and regular campaigning in the mass media.

1.5 Purpose and boundaries

The principal purpose of this study is to understand the general pattern of HRBs among the university students of Saudi Arabia and explore initiatives that can prevent these people from the engagement with the existing HRBs. To identify HRB patterns a number of associated factors are examined.

The study, in its first phase, considered the state or prevalence of HRBs in a Saudi university. Then, in the second phase, it explored how and why these risky behaviours are influenced by the context in which the students live. Context in this case refers to the eco-social systems such as peers, family and the university which surround them (Bronfenbrenner, 2005). The influences of psychological aspects in the engagement with HRBs were also factored into the research. In fact, this thesis had been designed to study the complexity of Saudi university students' engagement with HRBs rather than just exploring the types of HRBs prevalent in the higher educational institution setting.

Specifically, the study aimed to:

- Identify the main health risk behaviours among student participants;
- Understand the reasons for Saudi youths engaging in health risk behaviours;
- Provide recommendations to deal with health risk behaviours appropriately and effectively

1.6 Implications for stakeholders

This study has several implications for different stakeholders at different levels: from the government to the individual. The first stakeholder group is the Saudi Arabian Government and its institutions, which are the policy makers of the country. This study seems to be helpful for this group, particularly in considering how to tackle HRBs amongst young people. Furthermore, it may provide the impetus for the Saudi Government to support further research on HRBs in order for the Government to fully

understand the extent of such behaviours and the grave consequences of allowing such behaviours to go unchecked. The comprehensive data on HRBs will ensure that the institutions involved are fully informed, so that they can design appropriate and necessary interventions to reduce the levels of HRBs and, in turn, the negative health consequences linked to them.

The study has implications for universities too. The university admission is currently viewed as an added advantage for individuals who wish to improve their living standards by increasing their chances of securing better jobs. Universities can play a vital role by alerting students of the risks and negative consequences of HRBs. These higher educational institutions, in collaboration with other stakeholders, can design programmes that can raise awareness of the risks, both short and long term, of these behaviours among students, which may then help reduce the levels to which the students engage in HRBs.

The study may also have implications for individuals who need to make choices that do not affect them negatively. Following the focus on HRBs, individuals would have the chance to evaluate their actions to establish the risky behaviours they exhibit, which may then assist them to make better decisions in order to minimise the health risks that they expose themselves to.

1.7 Thesis structure

The thesis consists of ten chapters.

This introductory chapter sets out the rationale for this study. It provides an overview of the historical background of risks and HRBs, and also highlights the recent spread of

HRBs among the young people. The case has been made for a study in the Saudi Arabian context because of the limited number of research studies and accurate data about HRBs, particularly amongst the university students of the country. The chapter briefly explains the purpose of the study and articulates the research questions for investigation. A brief outline of the potential implications of the study is also set out, followed by a brief outline of the structure of this thesis.

The second chapter describes the unique culture and social structure of Saudi Arabia. Through the writer's reflections it explains the rural and urban settings of the country with references to the tribal culture, people's perceptions, faith-based society, and recent changes in economy and education.

The third and fourth chapters present the literature review. The third chapter provides a critical analysis of risks and HRBs, and also synthesises the concepts of risk taking, health risk behaviours and the outcomes of HRBs. The fourth chapter describes the present state of HRBs in Saudi Arabia by providing information about prevalent types of HRBs along with the reasons for their existence in the country.

The fifth chapter contains a theoretical framework. This chapter forms the core of this thesis as it includes the most relevant theories and models of HRBs and, based on the literature, develops a model of HRBs among university students that acts as a framework for the thesis.

The sixth chapter explains the methodology and includes the research approach, participants and participant sampling, data collection and analysis procedures, and ethics.

The seventh and the eighth chapters present the findings of this study. The seventh chapter focuses on the quantitative data (gained through a survey), while the eighth chapter presents the qualitative data (gained through structured interviews).

The ninth chapter discusses the qualitative and quantitative data, while the tenth, the concluding chapter, includes a summary of the overall findings, revised model and a number of recommendations proposed on preventing the Saudi university students from the engagement with HRBs.

Chapter 2 : Saudi Society and Culture: critical observations and self-reflections

2.1 Introduction

Society and culture are two key driving forces that influence and determine human thoughts and actions (Berger and Luckmann, 1967). There are numerous societal elements such as social norms, traditions, status of males and females, people's financial stability, roles of social organisations, religious beliefs, and the influence of other societies and cultures that constantly shape the perceptions and activities of a particular community within a specific context. The contextual elements not only lead to positive human actions, but in many cases these can influence individuals to destructive thoughts and activities which are harmful for the individuals and the society as a whole. From this perspective, people's perceptions about risks are constructed by the respective context and associated situations (Pratt et al., 2011). For example, family and educational institutions play the key role in influencing young people in the engagement (or not) with various risky and anti-social behaviours (Conger and Elder Jr, 1994).

As the researcher of this doctoral thesis I firmly believe that a thorough understanding of the Saudi Arabian social and cultural contexts is necessary to correctly explore the associated factors and reasons of health risk behaviours (HRBs) in the country. This understanding is essential for many reasons, for example to explore any HRB phenomenon, particularly among Saudi youths at the micro-, meso- and macro-levels. In fact, this kind of exploration seems to be vital in social or educational research,

particularly those connected to health and human behaviours, in order to suggest and implement any recommendations as a result of research findings in a realistic manner (Edwards and Barker, 2014). Moreover, the information depicted in the narrative of this thesis is helpful for the readers to understand the research findings from the perspective of Saudi people, society and culture.

It has been an advantage for me to study HRBs within a Saudi context as I was born and brought-up in the country, and thus have closely observed its features of social and cultural components. Additionally, I am a teacher working at a Saudi university, which has helped me observe various HRBs among university students who are the research population of this study. I believe that the descriptions of Saudi society and culture through my personal observations will effectively help the readers of this thesis visualise the research context and, at the same time, relate the findings and recommendations related to HRBs among Saudi university students.

In this Chapter, I have organised my observations about Saudi context in the following three main areas:

- i) Rural and urban settings of the country
- ii) Tribal culture and faith-based society
- i) Changes in economy, education, perceptions and behaviours

In my writing, my personal life journey has also been illustrated along with the descriptions of the above areas.

2.2 From Algathal to Riyadh

I was born in Algathal, a small village of the suburb of Tanomah, a town situated in the South-West part of Saudi Arabia. I had my elementary, secondary and intermediate education both in my village and the small town. Later, I moved to Riyadh, the capital city of Saudi Arabia, where I completed my bachelor's degree in Biology and Education at the College of Education, King Saud University.

During my childhood in Algathal and Tanomah, I saw a society dominated by religious faiths, tribal culture and traditional values. Saudi Arabia is strictly governed by Islamic laws particularly in the areas of justice, education and morality along with preventing hardship and oppression. In the rural areas I saw that these rules were embedded with long Arab traditions and values. In the country, most of the population is Muslim who consider the Quran as the foundation of Islamic law. However, my observations are that the rural Saudi communities are stricter in following religious orders compared with more urban communities.

In rural Saudi Arabia, the tradition of polygamy is widespread. Besides, the women do not enjoy similar rights like their male counterparts. In fact, in Saudi villages women were generally not encouraged for higher studies or to be engaged in any formal jobs. In my childhood I also witnessed the negative attitudes of my village people to Western values and cultures. The rural people, particularly the old ones, often described the Western cultures as conflicting with Islamic values and thus not acceptable.

Thirty years ago I saw Algathal and Tanomah suffering from the lack of infrastructure, such as schools, hospitals and community centres. The situation however started to change rapidly after 2003 when King Abdullah began several new social programmes and extended infrastructural facilities throughout the country. In recent times when I visited my home village I saw the changes, such as many well-equipped schools, electric supply to all households, and adequate medical facilities. However, in 1970 most Saudi people lived in rural areas, today more than 80% of the total population live in metropolitan areas like Jeddah and Riyadh (House, 2012).

As mentioned earlier, I received my higher education in Riyadh, the capital city of Saudi Arabia, and my present workplace is situated in Jeddah, another large city. Like other major cities such as Mecca, Damman and Khamis-Mushait; Riyadh and Jeddah are cosmopolitan and busy. Riyadh has about 4 million inhabitants and it is the centre of government and private organisations' headquarters, diplomatic missions, and cultural and social organisations. In addition to specialized educational institutes, military colleges, sport facilities, and libraries it also contains two university campuses namely King Saud and Imam Mohammad bin Saud Islamic University.

In Riyadh I observed several differences between various communities and it was in fact a huge transition for me from a peaceful and quiet village to a crowded and very busy city. I saw the city suffering from inadequate recreation places, particularly for young adults. Here it was not rare to see people with various outcomes of health risk behaviours, such as obesity, physical inactivity, and vehicle accidents. I observed all these phenomena both at public and private places. In Riyadh, apart from job holders and the established business class, I found a group of urban poor who or whose

parents had migrated from rural and semi-urban areas for work and in hope of a better lifestyle. These people generally did not have specialized skills suitable to enable them to be employed in the city. They even lacked necessary social skills required to be connected with social and political networks in that urban context. Consequently, I saw them leading an impoverished social life, mostly in illegal settlements in Riyadh city. I observed that the use of illegal drugs and smoking was high among these people. I was aware that some were engaged in illegal drug business where many young adults were their customers. I could also assume that some university students also collected illegal drugs from these people.

2.3 Tribal culture and faith-based society

Both rural and urban communities in Saudi Arabia are largely dominated by Arab culture and Islamic faith. The rural lifestyle is also derived from and influenced by tribal culture. In the country there are several tribal groups who live in both rural and urban areas. For example, Tameem is a rural tribal group, Ad-Dawaser is mainly town-based, and the Shammar group can be found in both rural and urban areas. There are also several Bedu'ins or desert-dwellers such as Otaibah, Qahtan, Mutair, Harb, and Anzah who also live in both rural and urban settings.

Although the lifestyles and faith of Bedu'in and non- Bedu'in tribal groups are very similar, Bedu'ins are generally stricter in following their traditions and community rules. These people prefer to live in the open desert and lead nomadic lifestyles.

Although, because of the rapid westernization in Saudi society the number of Bedu'in is decreasing rapidly, but there are some people who still follow their ancestral life on caring for livestock, hunting and raiding.

Many Arabs consider that Bedu'ins are the true representatives of Arab culture because they carry the rich oral poetic tradition of this region and practice the traditional code of honour. They also maintain a strong kinship community and possess a strong belief in their respective tribal superiority. I however saw that these people are generally open-minded and curious to know about close and far surroundings.

Through my observations I found that the Bedu'in communities are highly male-centric. In these communities, and also within the greater Saudi society in general, men take key decisions in the family including the decisions about education, occupation and marriage. Women have to wear proper Islamic attire and there are restrictions for them while going outside or mixing with people. They are also traditionally not encouraged to enter higher education or gain formal employment. However, these traditional practices have been fading gradually and more women are now receiving higher education and doing formal jobs. Yet, maintaining privacy is still a vital issue for the women in Saudi society in general. There are high societal and religious expectations regarding this (Abokhodair and Vieweg, 2016). Consequently, there are several implications that Saudi women face, for example they have to maintain strict privacy while meeting people, and even while accessing social media.

In both rural and urban areas in Saudi Arabia the Islamic rules are strongly enforced. Social interaction, relationships between family members, and treatment of people with different ages and genders are also guided by Islamic values. Whereas in rural areas these values are strongly followed, in urban areas they are less-strictly observed because of the growing influence of Western cultures and mixed societies. It is important to mention that Saudi Arabia is the only country which has 'religious police'

who patrol the streets, ensure people are attending prayer in a timely fashion, and enforce dress codes. In the country alcohol is banned and there is no cinema. These conditions indicate the absence of certain leisure activities for the people of the country. However, people spend their free time visiting friends and family, which is a key part of Saudi culture. Men and women regularly gather to socialise at cafes or the residence of relatives and friends where smoking and the consumption of Shisha and Moassel is common.

Generally, in Saudi society seniors are highly trusted and respected. In return seniors also take the responsibilities to guide the juniors, particularly the children and young adults. In my childhood and even now I see a strong family and community bond among people irrespective of gender or age.

2.4 Experiencing rapid changes

Through my journey from a remote village to the capital city in Saudi Arabia I have witnessed a rapid change in its economy, education, and even in people's behaviours and perceptions. I believe the main reasons for these changes are the exploration of oil and the influence of foreign cultures due to globalization. Here I am going to describe my observations in a brief manner.

a) Economic Change

Historically, fifty years ago Saudi economy was greatly dependent on farming, livestock and fishing. However, the huge national earnings from petroleum exports since the mid 1970s has changed the nature of people's occupations. Presently, the country is not dependent on income from productive employment. My observations indicate that

only around half of the working-age population in the country is engaged with any regular job. The private sectors are mainly run by foreigners although the Saudi government has been trying to replace these positions with native Saudi citizens. However, most Saudis are economically well off due to petroleum industries and thus they do not feel the need to work. I also believe that the reason for a culture of leisure among Saudi people is the geographic location and its climate which is hot and dry and therefore not suitable for long and regular work. I have also seen that voluntary work is not popular at all among Saudis as they generally consider this type of work as the key responsibility of the government. Therefore, the economic success, geographic location and climate, and people's reluctance to work together has greatly changed the life styles and working habits of Saudi people.

The outcome of economic prosperity is clearly visible in Saudi villages and cities. The country has been able to establish strong communication networks through land, water and air. Presently, in the massive oil industries and in other business ventures millions of foreign employees are working. In fact, in the employment sector the number of foreigners is much higher than the Saudi nationals. This means that foreigners bring different cultures and lifestyles into Saudi society which includes various health risk behaviours such as drug taking, smoking and illegal physical relationships.

b) Educational Change

The history of formal education in Saudi Arabia is not very old. Before becoming a nation in 1932, the formal education system of the country was limited to a few

religious schools. In 1930s several changes occurred in the education sector such as the establishment of first Religious Sciences School, first Secondary School, and the issuance of private school rules. In 1949, the first college in Sharia (now, Umm Al Qura University) was established and then, during the 1950s, more colleges, including Teacher Training and Arabic Language colleges started their activities. In that decade girls' education also began in the country. Presently, education is free at all levels in Saudi Arabia. The Ministry of Education looks after the primary, secondary, higher, societal and vocational education of the country.

Although the government of Saudi Arabia is keen on ensuring the basic education for all, the country still has the lowest literacy rate among the Gulf nations(Hamdan, 2005). The rate of education among the women is worse as in Saudi society still the main purpose for girls' education is to prepare them as good mothers and wives or just to accomplish a culturally appropriate job, such as teaching or nursing (Hamdan, 2005).

As a Saudi elementary and secondary student I found the primary goal of education in Saudi Arabia was to make the students understand Islam so that they can obey the Islamic rules properly. I spent more than half of my time in school engaged in religious studies and its interpretation. I however observed a deep interest among my classmates for higher education and found them considering this as the means to secure higher status in the society and their tribe.

After graduating from the school of education, I had a chance to explore the aspects of education among Saudis, particularly with younger pupils. In elementary schools, I taught in two districts and one of these was the most deprived area of Riyadh. At that

school, I observed unhealthy habits among children who were less than 12 years.

Violence was one of the obvious behaviours that were practised by young children at that school. I saw students using pens and sharp objects to fight each other because of tribal and ethnic prejudice. Even, some of the students were caught smoking or taking drugs. Antisocial behaviours were also spreading among pupils in that school such as stealing the contents of cars and damaging public properties.

After one year of teaching in public schools in Riyadh, I moved to start working as a Tutor at the Education School of University X in Jeddah. Jeddah is a cosmopolitan city located by the West coast of Saudi Arabia. The city is known for its multi-ethnic backgrounds where the majority of the population is non-Saudi. Working at the School of Education at University X gave me a wider perspective on the whole system of education in Saudi Arabia as I was involved in various activities that congregated undergraduate students, in-service teachers, school principals and supervisors from The Department of Education and others. While working at this University I was able to observe the impact of various government initiatives in the education sector. For example, it was evident that the educational institutions were trying to establish their theoretical and operational foundations, starting to promote self-regulated learning, and the massive development of infrastructures of educational institutions, teacher training, and education management programmes. However, I identified that the schools and universities were still reluctant in addressing students' behaviours and attitudes. As a result, I found several students suffering from the effects of risky, violent and anti-social behaviours.

c) Change in perceptions and behaviours

Historically Saudi culture is very conservative in nature. For many years the Saudi government and general population were against adopting foreign cultures. There are several values and norms, which Saudi people consider as the best practice. For example, in the Saudi community religious and tribal leaders play a strong role in decision-making and younger people respect them highly. Illegal drugs and sexual relationships are strictly prohibited and women have to follow specific guidelines, particularly while mixing with other people or moving outside the home. However, the records show that the practice of seclusion of Saudi Arabian women is comparatively a recent phenomenon as, in the past; women took part in almost all social, political and economic activities.

As a Saudi student and teacher of Saudi students I was able to realize the present perceptions of Saudi students and educators about their life, social rules and needs for educational development. Although, to me, many Saudi students were stereotypical and unable to think or reflect critically, I also saw a gradual development of independent thought among many Saudis about personal well-being, education, self-development, society, and culture. Consequently, while in the past, the schools in the country mainly taught how to live strictly by following the religious codes and practices; nowadays many schools and higher educational institutes actively teach science subjects, job-oriented educational programmes, and approaches to self-development. Similarly, government departments previously considered people's health and behaviour related information as very sensitive and inappropriate to be within the public domain, but recently a few research projects have been initiated and

implemented by educationists and government departments. However, the findings of this research are still not shared among the general public.

As a teacher at a Saudi university, which is the research context of this doctoral thesis, I have observed a changing educational environment where syllabuses and curricula are more scientific and global society oriented. I have had chances to teach science education and other subjects at University X and conducted several enlightening seminars and lectures to educate students, particularly about health issues which was almost absent in the overall university curriculum. These lectures also created opportunities to gain knowledge about students' perceptions and practices about various health related risks which ultimately helped me design the research proposal for these doctoral studies. I should acknowledge that this study about the HRBs among Saudi university students is a very sensitive issue and many Saudis may consider the findings as offensive and harmful for the country's national image and dignity. I have however carefully tried to explore the sources and associated reasons for Saudi young adults' engagement with HRBs and argued that the findings would help plan to mitigate several individual and social problems caused by a number of HRBs. I take this thesis as an opportunity to convince the policy makers, educational leaders and community heads of Saudi Arabia to consider HRB issues more seriously and take timely initiatives so that the future generations in the country can live a healthy and HRB free life.

2.5 Understanding the gap in research and planning for an in-depth investigation

The Saudi context has played a very important role in choosing the topic for this doctoral research. While writing the research proposal, I revisited my observations about Saudi society and culture, and decided to explore health risk behaviours. I was interested in this topic because relevant data were inadequate and mostly ignored although the issue seemed to be vital for people's and the nation's greater well-being. I was particularly interested about young people because I found them going through rapid cultural changes and they seemed to me highly vulnerable in terms of engaging with health risk behaviours. The reason I chose University students for my studies is because these institutions in Saudi Arabia did very little to promote healthy behaviours. Besides, a number of health risk behaviours such as drug use and sexual activities are almost un-explored in these institutions although some relevant cases have been reported. I also observed that the required collaboration among different departments in the education sector to tackle health risk behaviours was almost absent. A similar situation was also evident within public sectors such as education, health and social departments.

By deciding to explore this topic I was aware that there would be some sensitive issues which would need to be addressed in a very cautious manner. Because of the conservative nature of Saudi society it seemed to be a challenge to present sensitive information in a culturally acceptable manner. I therefore addressed the cultural and societal aspects in my study to understand the relevant factors and reasons of certain health risk behaviours, and also to report them in a way which is contextually relevant.

In the study, particularly in the data collection process, there were two key challenges: one was about the risks of engaging Saudi university students in the study, and the other one was the risks associated to me.

In this Chapter I have already explained that the Saudi society is highly conservative and culturally people of the country do not feel confident in sharing personal behaviours that seem to be negative and risky. The educational institutions and government authorities are also not habituated in the practice of sharing this type of behavioural issues. Before and during my data collection activities at University X, I was therefore very careful in preparing my action plan. I had decided to elaborately explain my research objectives to the University authority and the research participants. Additionally, I had assured the anonymity and confidentiality of their participation (even the name of the higher educational institution involved in my research is anonymous in this thesis) and tried to convince the students that the purposes of the research was entirely academic and only targeted to the greater well-being of Saudi youths. Eventually, the number of students participated in the data collection process was satisfactory (please see Chapter 6 for a detailed discussion on the procedures of engaging research participants).

Apart from the risks of engaging the students I also felt a number of challenges associated to my involvement in this research project. As HRB related research is almost absent in Saudi Arabia, I felt the need to explain the nature and features of my study to the educational authorities of the country. It was in fact a challenge for me to investigate the risky behaviours of a group of youths as I had been anticipating a low level of participation and resistance from the targeted educational institution.

Fortunately, I was able to convince both the students and the University authority by sharing the needs for such an academic study which aims to ensure the overall well-being of Saudi youths. My orientation to Saudi society and culture also helped me in this regard. Because of the contextual situation, I engaged a female faculty member in the data collection process to deal with the female research participants which turned into a success as there were adequate participants (please see Chapter 6 for a detailed discussion on the procedures of engaging research participants). I also admit that the dissemination of the findings of this research required additional caution. Being a Saudi national I have tried to ensure that the thesis is respectful to Saudi culture, faiths and values. Besides, I have tried to be focused to the key objective of this study which is to explore HRBs among the university students. Moreover, in my thesis I have provided a number of recommendations and guidelines on health risk behaviours for young Saudis which would enhance the acceptability of this study in Saudi Arabia (please see Chapter 10 for the recommendations).

Chapter 3 : Risks and Health Risk Behaviours

The key objectives for considering the research questions of this doctoral study, listed and explained in Chapter 1, were to understand the present state of HRBs among the students of a Saudi university along with identifying associated reasons and the roles of the University in HRB engagement processes. It was assumed that, by exploring these areas this research would help understand the general patterns of HRBs in the mentioned context. Based on the research questions and the research context the study therefore created the need for reviewing a number of related areas such as commonly accepted definitions of HRBs, HRB existence and extension processes, and any factors or approaches that are involved in controlling this kind of risk. For a holistic understanding the study on psychology, environment and social/government systems was also needed. Additionally, as the research subjects of this study are the university students of a Saudi city, the review emphasised the contents on the HRBs related to early adulthood, urban context and students.

3.1 The Structure of the Chapter

As mentioned above, this thesis aims to explore the overall trends of HRBs among the university students in Saudi Arabia through understanding the associated factors and reasons. Whilst research about HRBs in Saudi Arabia is limited, it is possible that the country is not immune to the global phenomenon of adolescent and young adult engagement with risky behaviours and their consequences. In this regard, the areas highlighted in Figure 3.1 are explored to study HRB-related theories and research findings. It was expected that the review of these areas in the literature would provide

with a clear understanding about the general nature and features of HRBs in a global context that could be used to begin to understand the situation in a Saudi context.

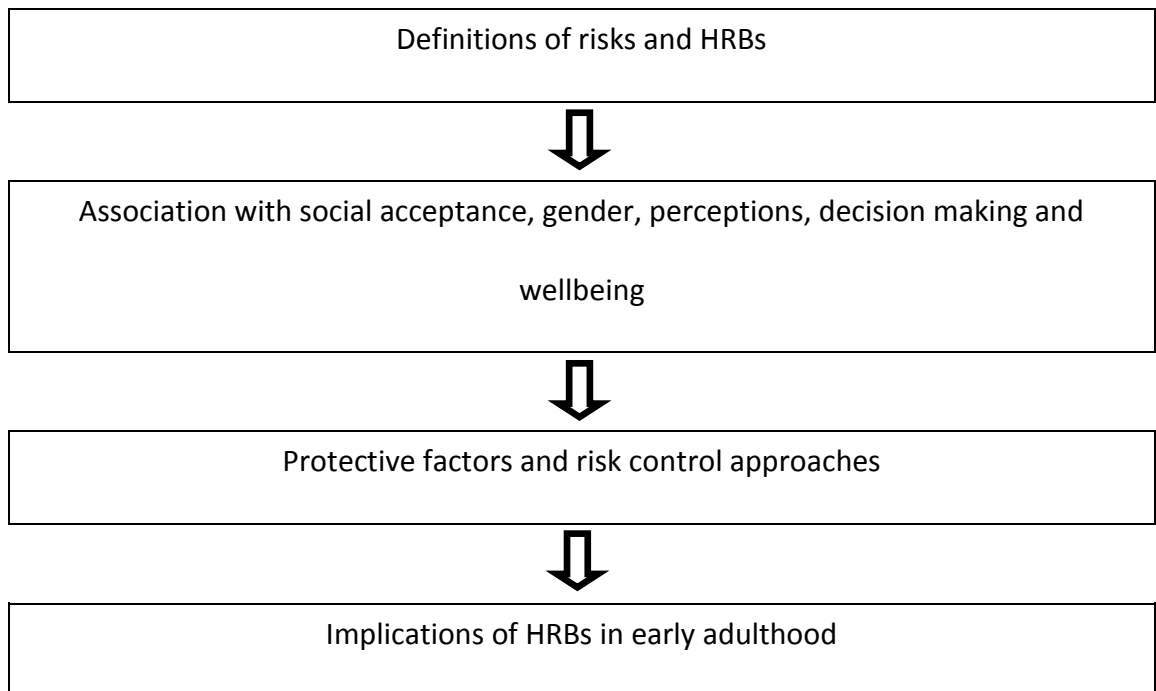


Figure 3.1: Content and structure of Chapter 3

The review has been guided by the research questions of this thesis and covered relevant behavioural and incidental aspects.

3.2 Overview of risky behaviours

In 2004, about 2.6 million deaths around the world were recorded among people between the ages of 10 to 24 (Patton, 2009). At the same time, significant rises in mortality rates from early adolescence (10 to 14 years) to young adulthood (20 to 24 years) were also documented. Traffic accidents were found as the main cause, accounting for 14% of male and 5% of female deaths. Other major causes included deaths by violence at 12% for males, while 6% of all deaths were recorded as suicides (Patton 2009).

In his exploration of the causes of morbidity and mortality among adolescents, Millstein (1989) found that risky behaviours were the main causes of death and injury in the case of young adults. Blum and Qureshi (2011) reinforced Millstein's claim by revealing that nearly 75% of all deaths between 1990 and 2006 among the people between 12 and 19 in the United States (US) resulted from unintentional injuries which included vehicular wounds, unintentional poisoning, unintentional drowning and unintentional discharge of a firearm. Wechsler (2011) also reported that in the US 70.8% of all deaths among the people aged between 10 to 24 resulted from only four causes: motor-vehicle accidents, homicide, suicide, and other unintentional injuries. A similar situation is also evident in England and Wales, where in 2009 the main reasons for death among adults and young people were transport accidents and suicide (The Office for National Statistics, 2012). Although these research findings, mainly drawn from Western countries, reveal the severe consequences of risky behaviours; the reasons for these outcomes have not been explored comprehensively and in qualitative manner, especially in developing countries. There is very limited evidence available with regard to the state and reasons for HRBs, particularly among young university students, in developing countries like Saudi Arabia. Furthermore, because of the dissimilar social, cultural and religious contexts of Western and Middle Eastern countries; the types and degrees of the risky behaviours are likely to differ. For example, in Saudi Arabia, people's perceptions related to risks on consuming alcohol or pre-marital sex are different and more negative than in the West due to religious and social conventions. This is likely to mean that what might be regarded as a high risk behaviour in Saudi Arabia may be considered as a low risk or not even a risk at all in a Western context. Similarly, as the perceptions regarding risks may vary in countries, a

risk identified as a health risk in the West may also be seen as a social or cultural risk in Saudi Arabia. For example, if a young Saudi woman wants to get physically fit by jogging, before running in public she will require to consider her social and cultural situations, and also the risks associated to those. The woman may consider the traffic conditions of the road and the risks of this as well. Conversely, in the similar situation, a woman in the West may only consider the risks associated to traffic in this regard. In this particular type of activity it seems that the Saudi woman needs to take a more complex decision in having to weigh up the risk of jogging and all its implications versus the risk of staying at home and remaining unfit. It is therefore important to explore what young Saudis consider to be health risk behaviours. However, there is minimal research about HRB issues and there is no national data available which can show the rates or causes for morbidity and mortality. The educational institutions, including universities and schools, are also reluctant to keep any records of their students' engagement with HRBs and the consequences from these risky behaviours (AlBuhairan et al., 2015).

One of the major reasons for the unavailability of information about people's engagement with risky behaviours in Saudi Arabia is that the Saudi Government considers these type of records (particularly those connected to the risky behaviours involving drug and alcohol abuse and risky sexual activity) politically and religiously sensitive. As a result, it can be noted that the Ministry of Health excluded the data about HIV/AIDS among Saudis and non-Saudis from the last version of the Health Statistic Year Book 2009 (Ministry of Health, 2009). Another reason is that there are unsophisticated infrastructures to collect data about the population and their health.

In the case of any existing data, access is not easy for researchers and they may even face various obstacles in investigating such a topic because of cultural and social barriers (the issues have been discussed in Chapter 2). However, age perspectives of young adults may provide with some assumptions regarding the engagement with HRBs in Saudi Arabia.

3.2.1 Risky behaviours at young age

Adolescence and early adulthood are crucial phases of human development because many decisions have to be made during this period and these often affect rest of the life course. Typical decisions that have to be made in adolescence include choices about one's social life and pastimes, travelling abroad (e.g. for higher education or business purpose), school studies and work. However, during this phase young people exert efforts to form their identities by trying to know more about the world and at times break social and family boundaries (Newby and Snyder, 2009). Therefore, adolescence and early adulthood are considered risky for young people because, by developing self-identity, they may become more prone to experimenting with HRBs, such as taking drugs, smoking, drinking alcohol, and unsafe sex. HRBs are likely to be quite prevalent among this age range and, as a result, young people may face health problems, both in the short and long term, that may also affect public health negatively (WHO, 2002). Furthermore, it is highly likely that if adolescents and young adults engage in one risky behaviour, they may also engage in others (Jessor, 1992a, Jessor, 1998). Sychareun et al. (2011) have distinguished this cluster of HRBs as a 'risk behaviour syndrome'. By observing the diversity of HRBs and their consequences, Blum and Nelson-Mmari noted that, 'a generation ago infectious diseases were the

major sources for morbidity and mortality globally while nowadays, social, behavioural and environmental factors are predominant' (Blum and Nelson–Mmari, 2004,p 410). These factors have had remarkable influences in the world, and it can be anticipated that they will continue to have powerful consequences on adolescents' health (Blum and Nelson–Mmari, 2004). Based on global evidence of the high occurrence of HRBs among adolescents and young adults, Conner and Norman (1996) made two assumptions: the first one being that the HRBs of individuals can result in a high percentage of mortalities; and second, that these HRBs are 'modifiable'.

Presumably, in a fast changing world, the Saudi youths are facing various challenges in their life including diverse risks of getting involved with HRBs. Although global evidence of HRBs indicates that adolescents and young adults are the most vulnerable groups, research data on the state and reasons of HRB among this population in Saudi Arabia are still not available. As a result, enabling this future generation of the country to understand the risks involved in such harmful behaviours through designing and implementing proper initiatives seems to be difficult. Because of the unique culture and social settings, the challenges and risks of Saudi youths therefore need to be better realised.

3.3 Definitions of HRBs

Investigating risky behaviours among adolescents has attracted much attention over the last four decades (Jessor, 1998). A number of research projects in different countries have been conducted to support comprehensive understanding of these behaviours and their consequences. Based on the findings, significant amounts of information on HRBs, including diverse definitions, have been recorded. For example,

French et al. provided a general definition of HRBs by mentioning these as ‘any activity undertaken by people with frequency and density that increases risk or diseases or injury’ (French et al., 2010,p 17). A similar definition has been provided by Richter according to which HRBs are associated with ‘... undesirable consequences that go hand in hand with probability of harm or loss’ (French et al., 2010, p 27). An extended definition has been given by DiClemente et al. indicating a particular age group and the general consequences of this type of behaviours.

[HRBs are] ... types of behaviour that appear at adolescent age and that can, in a direct or indirect way, jeopardize social and psychological well-being as well as physical health in the present and future (DiClemente et al., 2009, p 35).

DiClemente et al. also provided a number of examples of HRBs among youths which include taking drugs, smoking, drinking alcohol, sexual behaviours, and any behaviours leading to intentional and unintentional injuries.

On the other hand, by listing a number of consequences Surís et al. defined health risk behaviours as:

Behaviours with potentially negative effects on health, such as substance use, early onset of sexual activity or unsafe sexual practices, risky driving, violent or suicidal behaviours, antisocial behaviours, and disordered eating, among others (Surís et al., 2008, p 113).

According to the definitions of Richter, French et al., Suris et al., and DiClemente et al.; HRBs are harmful practices which can damage public health generally whilst exposing specific individuals to diseases, and physical or psychological harm. Baban and Craciun’s further specified a number of particular risk taking activities, defining such

behaviours as 'any activity undertaken by people with a frequency or intensity that increases risk of disease or injury' (Baban and Craciun, 2007, p 45). Through analysing these definitions it can be realised that avoiding risky behaviours is linked to several health benefits, including protecting individuals from various diseases. For instance, behaviours such as physical exercise, fruit and vegetable consumption, and safe sex within legal relationships in response to the threat of sexually transmitted diseases can improve the quality of lives of young people (Jessor, 1998). However, because of their social, emotional and physical stage of development, adolescents and youths remain vulnerable in terms of engaging with HRBs (Steinberg, 2008).

By reviewing the literature it is seen that, although DiClemente et al. are less prescriptive than Suris et al., they provide a more comprehensive definition than Baban and Craciun and focus on both the risks to mental and physical health of such behaviours as well as referring directly to a particular age group. Therefore, the definition of DiClemente et al. can be adopted for this thesis. As this research seeks to explore HRBs amongst university students, the definition is highly applicable to the age group of the participants, as it adopts a more holistic view of the potential outcomes of HRBs and considers the outcomes of HRBs in the longer term, all of which are pertinent to the participants.

3.3.1 Relationship of HRBs with risks

According to researchers such as (DiClemente et al., 2009, French et al., 2010), HRBs are a particular type of risky behaviours that have several distinctive features. A discussion on 'risk' as a concept may therefore provide with a holistic understanding of these type of behaviours.

Firstly, risk enables individuals to deal with the uncertainty of danger and harmful outcomes of certain actions (Light et al., 1993). Despite the fact that risk has been linked to hazard probability, potential adversity or threat, the researcher chooses to use the definition from the (WHO, 2002), due to its precision and comprehensiveness, that states risk is, 'a probability of an adverse outcome, or a factor that raises this probability' (WHO, 2002,p 3). Although risks are assumed to be objectively quantifiable through risk assessment, social scientists have rejected these thoughts, and instead focus on the effects or outcomes of risk behaviour on individuals (Slovic, 2000). From this point of view, risks do not exist independently from human beings' minds and cultures, and they may take varied forms in different contexts (You, 2011). Risks may also come with different degrees of uncertainty in different situations. The outcomes of a certain action are unknown; they could be positive or negative. The positive and negative outcomes represent the two main categories in which the degrees of outcomes fall. 'Health risk behaviours' therefore focus on those occasions when an individual engages in an act that is generally expected to have negative health outcomes.

Studies have shown that perceived risks can be measured and quantified. After quantification, the risk is compared to the benefits to be derived from a certain action and the individual decides whether it is worth taking the risk. This has been the basis that most of the research on risks has been conducted (WHO, 2002). The way people perceive a risk depends largely on the information they possess from past experience or other sources pertaining to that risk. The context of a risk and the associated benefits also influence people's perception of risks (Renn, 1992). The perception of

health risks is tightly coupled with different social, cultural and economic environments. Some of the main factors that influence the way the public perceives risks include power, trust, beliefs and values (WHO, 2002).

3.3.1.1 Contributing factors and their roles

Because of the varied features of HRBs, for example their association with an individual's psychology and the surrounding environment, the listing of HRB factors does not seem to be an easy task. However, based on the theoretical perspectives of risks the role of the perception, decision-making, wellbeing, gender and social acceptance can be examined to determine whether a person engages in a risky behaviour. In the discussion below, these perspectives are studied, with reference to HRBs, to examine the factors related to people's risk taking behaviours. The factors are not necessarily discreet and they may often influence each other, for example an individual's perception may affect his/her decision making, and the decision making can be influenced by his/her gender. It is therefore important to recognise that these factors can be described both individually and collectively.

a) Role of perception

Before 1990, risk assessment and management relied mainly on scientific approaches. However, these approaches proved inadequate in the protection of citizens from risks (WHO, 2002). As risks may mean different things to different people (in terms of individual perceptions, knowledge, age, experiences and cultural backgrounds), it is necessary to understand risks within a larger cultural and economic context.

An individual's considerations about people and the world have a major influence on how he/she perceives risks. Generally, men judge risks as less likely to happen than women (WHO, 2012), which is a result of both biological and social factors (Kelly et al., 1995). However, a personal view is the approach that a person takes to solving various problems including making decisions. An individual's perceptions to matters involving the political, social or economic arena define how he/she perceives risks in these spheres of life (WHO, 2002). People with a positive viewpoint will be more likely see the best side of all situations and therefore be able to cope better with risks (WHO, 2002).

Interest groups of a country or society, including human rights advocacy groups, private corporations, and public health activists, among others, can have a significant influence in controlling people's perceptions (Vennard et al., 1997). Similarly, the mass media also play an important role in this regard. Through targeted campaigns they can communicate important information on the factors that pose risks (Kelly et al., 1995). The media also has the tools to interpret and present scientific data on risks in a format that the public can understand.

For understanding young adults' or university students' engagement with HRBs in Saudi Arabia, it seems important to realise the perceptions of this age group about risks and HRBs, their views on gender and society, relevant government initiatives, and roles of community sectors such as non-government organisations and clubs. Whereas these aspects are secondary to the current study, effort has been made to tackle some of them in the data collected.

b)Role of decision-making

One of the most important processes in life is the decision-making process. Often, decisions are shrouded with uncertainty and a degree of risk; therefore several approaches are needed to be taken in different situations (Koleczko, 2012). Risk-taking decisions may include risk avoidance, collection of more information about a particular risk, analysis of different aspects of a problem, risk reduction, or delegation of the decision (Baumeister, 1989). By delegating, the decision-maker transfers liability for the risk to another person (DiClemente et al., 1996).

In decision-making, avoiding a risk may generally not be a very feasible approach (Kolvin et al., 1990). For example, in business or in the case of employment choice, risk-taking may bring beneficial outcomes. However, in health matters, some unnecessary risks should be avoided. Therefore, several strategies to aid the decision-making process are necessary to minimise the risk or the impact that the occurrence of a risk will have on the individual and those around him/her. One of the most effective risk management strategies includes examining other alternative courses of action (Barrett, 1996). It is highly unlikely that there is only one possible course of action for a particular situation. The more information that a decision-maker has about a particular problem, the better the decision that he/she can make (Barrett, 1996).

Individuals can generally be classified as risk prone or risk averse. Risk prone individuals are more independent and tend to make decisions more independently (Aos et al., 2001). They make decisions without necessarily having all the factors at their disposal. Furthermore, they rarely consult others when making decisions since they consider such deliberations a waste of precious time (Connor et al., 2003). On the

other hand, risk averse individuals do not make decisions until they are absolutely sure of all the risks involved (Aos et al., 2001). They typically consult widely before reaching a decision. They have a negative approach to risks, seeing the likelihood of it occurring is a big obstacle to making a decision to take the risk (Aos et al., 2001).

c) Role of wellbeing

Wellbeing is generally defined as the absence of mental anguish, physical illness or disease (Elgar et al., 2003). It represents the achievement of physical fitness and general mental stability. In a state of wellbeing an individual feels good about him/herself. Individuals have very robust self-concepts when they enjoy high levels of wellbeing (Glendinning, 2002).

Young adults, particularly university students, are at the peak of their intellectual capacity (McGuire, 1995). Therefore, the intelligence and knowledge they have affords them many advantages in being able to identify factors that may cause risks to them and to their surroundings (Hough and Tilley, 1998). However, the general wellbeing they experience at this stage of their lives may deceive them into thinking that they will continue that way without any ill-effect as they advance in age, only to later face the consequences of their earlier engagement with these risky activities (Hough and Tilley, 1998). Despite their intelligence, they may experience emotional turbulence and become vulnerable to the temptations of engaging with risks including HRBs (Hough and Tilley, 1998). Exposure to negative influence of the media, peer pressure, and general materialistic cultures can further aggravate the situation. Thus, despite their ability to cognitively rationalise situations, their general lack of experience coupled

with emotional vulnerability and defiant attitudes can place them at risk (Harland et al., 2002). The demanding lifestyles and pressure at higher educational environments (Gorsuch and Butler, 1976, Goldstein et al., 1990, Connor, 2003), lack of family support (Field et al., 1979), dissatisfaction (Field et al., 1979, Connor et al., 2003) and unhealthy lifestyles (Kelly, 1995, Haignere et al., 1997) can also lead to a lowering of wellbeing and increase the likelihood of engaging in HRBs.

d)Role of gender

Gender plays an important role in risk taking decisions. Women are generally more averse to risks than men (Eckel and Grossman, 2008b, WHO, 2012). They consider several factors before making decisions on risk related issues. The reason for this could be either genetic or the nurturing they received as children (Annabel, 2001).

Conversely, men are generally more likely to engage in risk activities because they are less concerned about the outcomes of risk taking (Learmonth, 1995, Barlow, 1997, WHO, 2012). Barlow (1997) stated that even though the risks may be the same, women worry more about their consequences than men. Furthermore, research carried out by Gustafsod (1998) established that men and women do not worry about the same risks. Although there are some common risks, the levels of importance attached to each also differ according to male and female genders. Gustafsod (1998) found that women are more worried about risks related to the home, family, personal factors and the issues that may affect people they are closely related to. On the other hand, men are more worried about risks related to their work, lives and incomes (Law, 1992). Furthermore, men are less worried about risks related to accidents and health than women (Gustafsod, 1998).

The differences in perception and risk-taking behaviour may be explained by the social roles that women play in different societies. According to a study carried out by Bouyer et al., women in most societies are raised up mainly as caregivers for their future families, which may explain why they are mainly concerned with health and safety risks (Bouyer et al., 2001). Most societies also designate the role of the breadwinner to the men, which may account for male concerns about the economic risks they face; for example, job stability. The greater influences of society on both male and female genders are discussed in more detail in the next section.

e) Role of social acceptance

Social acceptance is the feeling of belonging and fitting into society. Human nature demands that people feel the need to be in the company of others (Berthoud, 1998b). Studies have shown that people who have limited interaction with others, including family and friends, face increased risks, particularly with regard to health conditions (Harland et al., 2002). The aspects of social acceptance play an important part in influencing risky behaviours among young people (Ramsay and Spiller, 1997). Youths and adolescents are at certain age of life when they feel the need to be long to a particular group (Bennett, 1998). An individual may assume that if he/she does not show the same behaviour as other members of the group, then he/she will be isolated (Harland et al., 2002). Thus peer pressure can make them undertake risky behaviours that they would not normally do (Berg et al., 1985). In this age of information and communication technology, various media such as computers, the internet, and social networks are helping people exchange ideas and information concerning various aspects of their lives that they regard as socially acceptable. The mass media and

celebrities are also influential, as people often emulate what they hear and see, thus leading to the spread of risky behaviours (Berkowitz et al., 1978). As a consequence, countries where some behaviours had been considered socially unacceptable have now become more liberal and open-minded (Hoggett and Hambleton, 1987).

3.4 Risks and HRB protective factors

By analysing the definitions of HRBs in Section 3.3 of this Chapter it is understood that HRBs are a particular type of risky behaviour linked to health, and they are generally determined by several influencing factors. Given that these factors have been identified as responsible for the engagement of a person with an HRB, it seems to be important to explore whether there are any factors that can protect or minimise the HRB engagement. The later factors can be defined as 'protective' because they play an active role in eliminating risks; however they may also have a reverse effect associated with negative consequences of risks (Jessor, 1998).

These risk and protective factors however can create the possibilities of influencing people to be both engaged or stay away from HRBs. Therefore, whereas they can act as means of protection from HRBs, similarly, they can increase the chances of engaging with HRBs. These two conflicting aspects of the individual, family, peers and community factors are discussed below (a comprehensive description of the social and cultural aspects and people's perceptions in Saudi Arabia is made in Chapter 2. Similarly, the aspects of people's engagement with HRBs, such as HRB types and associated reasons, in Saudi Arabian context, are explored in Chapter 4).

a) Individual /personality

Although the surrounding environment has a significant impact on the development of an individual's capacities, the influence of personal abilities and preferences cannot be overlooked (Satterfield and Schell, 1997). Some of the risk factors related to the personality of an individual include intelligence, self-esteem, hyperactivity, and attitudes towards laws and authority (Barrett, 1996, Taylor et al., 1999).

Some people get involved in HRBs simply because they do not have a sense of self-worth (Satterfield and Schell, 1997). Therefore children need to be nurtured in ways that develop their self-esteem which can help them face challenges in life. In a similar manner, intelligence can enable people to realise whether the work they are doing is harmful to their health. On the other hand, hyperactivity causes people to act on impulse without thinking about the consequences of their actions (Satterfield and Schell, 1997). However, it needs to be noted that aspects such as intelligence and hyperactivity cannot be eliminated by individuals (Barrett, 1996). Nevertheless, such people may be engaged with HRBs simply because they do not take into consideration the consequences that their actions could have. These people generally do not understand their weaknesses and do not consult with others before taking any risks (Covello and Sandman, 2001).

b) Family

'Family' involves several aspects to human life; from the conception and birth of a child to its upbringing. Family is the first and the core place to learn values, social responsibilities and safety measures (such as for HRBs). However, family life can be

challenging, especially when the parents themselves face problems in their lives. Problems may include conflicts leading to divorce, financial problems, and unstable relationships where parents have no emotional attachment to their children. Some parents may also be involved in HRBs such as drug abuse or criminal activities. These all may lead to negative effects on the children if the children emulate what they see in their family (Hagan and Dinovitzer, 1999). Based on the following interlocking model proposed by Loeber and Stouthamer-Loeber (1986), the influence of family on children can be summarised as including:

Negligence: Parents who do not spend adequate time with their children are not likely to know their mischievous behaviours (Harland et al., 2002). Due to the lack of attendance, parents may be unaware of the habits such as drug abuse of their children. The children can develop a dependency on drugs and may even become involved in violence and criminal activities (Harland et al., 2002). In addition, there are instances when care and family support result into negative outcomes. For example, excessive financial support and freedom from family may lead people to be engaged with HRBs like drug abuse and illegal sexual relationship (Worthy et al., 2010).

Deviant behaviour: when parents are actively or passively involved in criminal activity, they thereby deliberately or unknowingly encourage their children to follow their footsteps (Harland et al., 2002). What a child is used to at a young age influences the way he/she grows up and deals with risky behaviours (Berkowitz et al., 1978). However, there are numerous examples of the opposite situation where the children whose parents are involved in criminal activities do not end up copying their parents' behaviours (Harland et al., 2002).

Family relationship: The circumstances of the family can determine a person's risk-taking tendency and attachment with HRBs. According to the theory of attachment, introduced by Bowlby (1969) and further developed by Thomas and Segal (2006), human attachment is important in shaping the development and behaviour of an individual. Additionally, social capital in the form of family, community and environment is also integral in this regard (Thomas and Segal, 2006). Whereas families, communities, and environments of a person define his/her personalities and relationships with other people, these also offer the social capital needed for their emotional maturity (DiClemente et al., 1996). It has been noticed that, when families are stable and supportive a person more likely to develop stable emotions and is therefore less likely to engage with HRBs. Conversely, the children who are continually exposed to poor social capital and 'separation anxiety' through abandonment threats and rejection are more likely to exhibit behavioural problems including HRBs (Bowlby, 1969).

A family in crisis may precipitate a child to engage in misbehaviour, given that there is no cohesion and control from parents to nurture positive behaviour (Haignere et al., 1997). Parents need to monitor whether children are involved in unusual behaviour through indicators such as change in behaviour and take appropriate action (Haignere et al., 1997). They should also ensure that the individual does not turn to harmful behaviour when faced by tough situations (Satterfield and Schell, 1997). Moreover, families should learn to stay together which would give the young a sense of belonging (Satterfield and Schell, 1997). In the case of a student who is engaged with an HRB, his/her family should collaboratively work with the respective educational institution

to improve the associated student's behaviours and at the same time overcome the family related conflicts and challenges (Minke and Anderson, 2005). However, in many countries, particularly in the Arab context, this cooperation is missing (Smith, 2006, Oyserman et al., 2007). The reason for this may be the poor educational backgrounds of traditional families and their over dependency on the educational institutions regarding the students' education and wellbeing.

c) Community

The surrounding environment and the community have an impact on people's life (Gorsuch and Butler, 1976, Learmonth, 1995). For example, a disadvantaged neighbourhood may create many jobless people which can ultimately influence many of them to be engaged with HRBS like drug use and substance abuse. Additionally, they may have high crime rates and therefore there may be a widespread availability of firearms and violence. All these risk factors in the neighbourhood increase the chances of an individual being involved in risk behaviours (Yoshikawa, 1994). However, it has also been seen that some of the poor neighbourhoods serve as motivators for students who view education and success as a way to escape the challenges they are facing (Calkins et al., 2007). As such, some students may be highly focused and strive to achieve their best in order to leave their poor environments for better ones.

In the community/environment, some of the protective factors that may insulate individuals from engaging in risky behaviours include social support initiatives. People in a society or community should therefore form positive groups to promote general welfare in their communities (McKay, 1993). These may include community policing to control availability of drugs and firearms. Religious organisations can also have a

remarkable impact on inspiring people to participate in social initiatives which can prevent risky behaviours, including HRBs (Harland et al., 2002).

d)Peers

The friends and associates of an individual have a great influence on his/her intentions and behaviours. One of the main risk factors related to peer groups is peer pressure which influences individuals' behaviour in order to have a sense of belonging to a particular group of friends (Ramsay and Spiller, 1997). Peer pressure may encourage individuals to become engaged with many risky behaviours, including drug and substance abuse and criminal activities. Lack of acceptance may also cause individuals to engage in risky behaviours. When an individual feels that he/she does not fit in any social group, he/she becomes isolated and feels lonely (Berthoud, 1998a). Such an individual may end up taking drugs or engaging in other HRBs that compensate for his/her loneliness. Conversely, picking the right friends may lead to positive influences. This perspective however has not been focused significantly in the literature whereas greater emphasis has been given on the possibility of negative influences.

To avoid negative peer influences, people, particularly young adults, need to be carefully guided (Shiner and Newburn, 1996). One of the protective factors that young people can use is to change their peer group (Ramsay and Spiller, 1997). Having a group of peers that can influence the individual positively is an effective strategy in this regard. In fact, picking the right kind of friends is vital because they generally do not have negative influences on an individual's life (Warr, 1993).

e)University

Higher educational institutions, particularly their operational policies, learning and social environments, and state of facilities, may present new risks to the students (Baer et al., 1975). Poor academic adjustment, where the students lack the cognitive capacity to undertake the required level of study, and overly high family and community expectations, may also cause this problem (Baer et al., 1975). Furthermore, learning difficulties may lead university students to disillusionment and a sense of hopelessness which may ultimately lead them to be engaged with several risky behaviours, including HRBs (Warr, 1993).

Universities can take effective strategies to protect their students from being engaged with risky behaviours, particularly HRBs. Some of the major strategies may be the preventative measures, healthcare facilities, and ensuring cleanliness. These are briefly discussed below:

- For promoting healthy living, universities can ensure that the students are educated in preventative measures (Shiner and Newburn, 1996). However, it is important make the students at their primary (from 3-11 years) and secondary (12 to 16 years) stages of education aware of HRBs, as at these periods they develop various risky behaviours and carry those on to the rest of their life. The (WHO, 2009a) insists that effective health promotion programmes remain one of the major investments that many nations should invest in.

- Universities can also provide proper healthcare facilities to students and ensure that they are treated at the right time (Rauch et al., 2006a). It is noticed that the sexual activities are high amongst students at university (Satterfield and Schell, 1997) and for this reason researchers (such as Patterson et al., 1998) suggest that the university administrations around the world have the responsibilities to educate students on how to avoid risky sexual behaviours and ensure that they have access to medicines and safe sex tools, such as condoms. Universities can also encourage abstinence through organised events (Satterfield and Schell, 1997). Additionally, various risky behaviours, including HRBs, can be properly addressed in the academic curriculum (WHO, 2012). A strong emphasis on preventing risky behaviours and HRBs through university policies and procedures can provide effective help to students to stay safe from the risks (Light et al., 1993, Patterson et al., 1998).
- One of the effective approaches a university can follow to promote better living is to ensure a clean and healthy campus along with the provisions of pure drinking water and proper sanitation (Larzelere and Patterson, 1990). Proper sanitation prevents any transmission of diseases such as colds, flu, bacterial and viral infections among others. This not only promotes better health but also creates a congenial environment for learning (Berthoud, 1998a).

The features of these protective factors indicate their reciprocal role in the engagement processes with HRBs. Based on this it can be assumed that, although

these factors can be effectively utilised to safeguard people from possible engagement with HRBs, they can also influence them to be engaged with HRBs or enhance any existing HRB practices. It is therefore vital to ensure that these protective factors, such as individual personality, family, peers and community, contribute positively towards an individual's life. In fact, one of the key objectives of this doctoral study is to understand the role of these protective factors in the life of the students of a Saudi University in order to consider how engagement with HRBs can be prevented (please see Section 1.3 of Chapter 1 for the research questions of this study and their explanations).

3.5 HRBs in early adulthood

Adolescence is one of the most confusing periods of an individual's life. According to DiClemente et al., this 'is a period of rapid and transformative physical, psychological, sociocultural, and cognitive developments' (DiClemente et al., 2009, p 4). Critical physical, emotional, and mental developments are recorded in this stage and therefore in an attempt to cope with these changes an individual may engage in risky behaviours (Bachman et al., 2013). Consequently, some people do not succeed in developing into citizens of the expected calibre by their society under these conditions. Furthermore, lack of experience and information may cause the risk to escalate to dangerous levels (McGuire, 1995). The decisions that people make at this stage of their lives shape their futures. Individuals also get attracted towards HRBs at this stage. For these reasons, DiClemente et al. marked adolescence, more specifically the ages from 12 to 25, as a high risk period due to the increased involvement with HRBs (DiClemente et al., 2009).

Personality, family, and educational institutions play an important role in early adulthood for the engagement with risky behaviours and HRBs. Young adults are generally rebellious to authority which can lead them to committing crimes and engaging in anti-social behaviours (Barker, 2007, Kelly, 1995). Different HRBs also contribute to high rates of deaths and disabilities among young adults (Blum et al., 2000, Centre for disease control and prevention, 2012). On the other hand, during adolescence and early adulthood the family acts as the most important institution in the life of an individual. Family provides a base point and a sense of identity for an individual (Bachman et al., 1981). However, any lack of support from family and negative treatment from parents can lead to low self-esteem among adolescents which may influence engagement in different HRBs such as drug and substance abuse, unsafe sex, delinquency in school, and eventual drop out from school (Baer et al., 1975, Kelly, 1995, Patterson et al., 1998).

3.5.1 Preventive measures

Because of the diverse influence of protective factors and their complex features the preventive measures to avoid engagement with HRBs seem to be difficult and demanding. Researchers (e.g. Kolvin et al., 1990) generally focus on individual HRB factors and provide solutions on that particular area rather than considering a more holistic approach. For example, to prevent young adults from the engagement with HRBs it is suggested that they should be provided with continuous mental and emotional support. However, addressing a particular factor to recommend any solution to prevent HRBs does not seem to be feasible because individual, family,

society and state factors frequently interact with each other and thus they all need to be considered in the process holistically.

Firstly, it is important to realise that people need to have a strong sense of self-esteem and self-worth which should be inculcated in children from a young age (Elliott et al., 1989) Positive reinforcement is necessary for them to feel adequate and not to develop the need to engage in HRBs to prove their worth. Self-esteem prevents individuals from engaging in behaviours that could be harmful to them (DiClemente et al., 1996). Similarly, parents and communities need to be aware of and actively help to control risks.

Apart from the individual, family and social levels the major stakeholders such as government and educational institutions also need to properly play their roles effectively. The government has authority to regulate behaviour through laws and policies. Some of the ways through which governments can do this is through criminalisation of consumption and possession of drugs especially narcotic drugs and the enforcement of laws (Elgar et al., 2003). The mental wellbeing of young people is important if the problems brought about by HRBs are going to be solved (Hoggett and Hambleton, 1987). This can be enhanced through participation in various programmes such as guidance and counselling, which can be conducted through the initiatives of parents, schools, government, or religious organisations (Yoshikawa, 1994).

It is obvious that, in Saudi Arabia, the research context of this study, the HRB related preventive measures would be different from those in any Western country because of dissimilar upbringing of individuals, family structures, and social and cultural conditions (please refer to Chapter 2 for a detailed description of Saudi Arab country

context). Research findings on these aspects of life are very limited in the country, so it may be difficult to propose a context-friendly solution for preventing its people from their engagement with HRBs. It is also crucial to anticipate how any recommended initiatives could be implemented within Saudi society and government structure which are unique with their traditional and faith-based features.

3.6 Outcomes of HRBs among university students

Generally university students around the world are aged 25 years and below. These young people interact with their peers and teachers from different backgrounds and experiences. The exuberance that is brought about by their youthful age combined with the influence of their peers often results in high level of risky behaviour that could be injurious physically, emotionally or psychologically (Berkowitz et al., 1978, McGuire, 1995). Similar to the interactive nature of the HRB factors, the negative outcomes of HRBs may impact on multiple aspects of life. According to Jessor, university students' behaviours that result in risks can be divided under four general categories, namely health, social roles, personal development outcomes, and outcomes affecting the preparation for adulthood. The outcomes are briefly discussed below Jessor (1992b).

a) Health outcomes

Some of the risky behaviours that university students are involved in can result in serious repercussions on their health. For example, unintentional injuries is rated as one of the commonest negative health outcomes among university students (Shiner and Newburn, 1996). Smoking and drug consumption, reckless driving, unhealthy

sexual relationships and unhealthy dietary also result in serious physical injury or death.

Smoking, which has many health implications for people, is presently the largest preventable cause of death in the world (Abolfotouh et al., 1998). Besides leading to death, smoking is the leading cause of most cancer occurrences, impaired pulmonary function, low birth weight, bronchogenic carcinoma and chronic obstructive pulmonary diseases (Gorsuch and Butler, 1976, Chaaya et al., 2004, Maziak et al., 2004, WHO, 2006). University students who smoke often also engage with other HRBs such as drugs and high-risk sexual behaviours (WHO, 2009a). Smoking and drug consumption may also lead them towards stress, depression, anxiety and delinquent acts which in their advanced stages may result in graver mental conditions with cognitive impairment and victims may attempt to suicide (Smith and Blackwood, 2004, Rauch et al., 2006a). Moreover, these aspects predispose these young people to poor adult lives. Such individuals therefore need rigorous professional help and counselling (Scott et al., 2001).

Reckless driving is potentially more dangerous to the health and safety of university students than other behaviour types. Internationally, traffic-related fatalities are by far the most prevalent in this age group (Blum and Nelson–Mmari, 2004). The most recent statistics available from the WHO show that every year about 1.2 million people die on the world's roads and 3,500 per day, and approximately 50 million are also injured. Many of these victims are young people, including university students (WHO, 2004b).

A serious repercussion of HRBs is the contraction of sexually transmitted infections (STIs) and human immunodeficiency virus (HIV), both of which spread through unprotected sex (Kittleson et al., 2009). Indulgence in unprotected sex may itself be a consequence of HRBs, such as drug abuse, that cause serious lack of judgment by an individual (Kelly, 1995). STIs are common infectious diseases that spread from person to person through sexual contact, including those caused by viruses, bacteria, fungi, protozoa, helminths and arthropods (Memish and Osoba, 2003). HIV, herpes, hepatitis, and syphilis are examples of these diseases. It is estimated that one million people acquire an STI including HIV every day (WHO, 2007). Pre-marital sex also causes unwanted pregnancies and makes young adults suffer from psychological challenges such as stress, depression and birth complications (Mesleh et al., 2001).

There are varied health outcomes linked to poor diets. Poor diet can lead to malnutrition, which is a health risk that may lead to emotional instability, anaemia, bone thinning, hormone deregulation and several other negative health outcomes including death (Al Qauhiz, 2009) and can also cause colorectal cancer, a cancer that occurs in the intestine (Vineis and Wild, 2014). On the other hand, poor diets are also one of the major reasons of obesity (Malhotra et al., 2015). Many university students cannot maintain discipline in their food habits and they are greatly dependent on fast food, which is the major cause of their poor diets (Weeks and Laver-Bradbury, 1997).

b)Social outcomes

Apart from health related outcomes, there may be several social implications among the university students for their engagement with HRBs. These may directly impact on their family, friends, peers and society.

The persistence of HRBs into adulthood reduces the chances of sustaining a healthy family (Laub and Sampson, 1993). In addition to impacting on their own lives, young adults who engage in HRBs affect people around them negatively. The behaviours that they adopt have consequences on the roles they take up in their society and the way in which they interact with other members of the society. According to Laub and Sampson (1993), adults who have records of delinquency and HRBs are less responsible in their work and studies, and they do not act as desired role models for the younger generation. Moreover, people who engage with HRBs at a young age are more likely to carry on the actions that depict them as being socially irresponsible. It has been noticed that when university students take up habits such as alcohol consumption or smoking, they lay a foundation for trouble for their families and peers because if they become addicted to alcohol and smoking this causes impairment of judgment and a breakdown of communication (Light et al., 1993).

As discussed, one of the consequences of unprotected sex is early pregnancies (Field et al., 1979). Children born to young mothers such as the typical age of a university student have been shown to have lower chances of social and academic achievements, higher tendency to get into drugs and antisocial behaviours (Woodward et al., 2001). They generally follow the footsteps of their parents and thus the cycle is perpetuated

(Glendinning, 2002, Chen et al., 2007). This is because they are likely to have been brought up in an environment where HRBs are generally accepted and practised.

c) Personal development outcomes

Engagement with HRBs can impact on one's personal views and personality. For example, the use of drugs such as heroin and cannabis among others may cause hallucination and because of these the users live in their own imaginary worlds (Learmonth, 1995, Vennard et al., 1997). It is therefore common for them to be paranoid, predicting danger in places where there are none (Learmonth, 1995). The hallucinations may also impair their judgment, because of which they may not know when they are at risk and suffer harm in other ways. Many drug abusers have been involved in traffic accidents while crossing roads, since their minds do not register that crossing a busy highway is dangerous (Gorsuch and Butler, 1976). This indicates that HRBs can reduce the quality of life and may negatively affect social and family relationships among other negative personal outcomes.

Some of the risky behaviours that university students are engaged with may cause them to have low self-esteem (Vennard et al., 1997). Depression and suicidal behaviour may set in at this point, and such individuals may become a danger to themselves. Some of their religious practices and the values held in society can also be somewhat discriminatory. For example, feeling guilty in a devout society may affect their personality. To prevent from such negative outcomes university students need to be provided with proper awareness opportunities along with counselling and

treatment facilities, and in the extreme situation, they need to be placed into specialised care and receive ongoing treatment (Seeley et al., 1996).

d) Outcomes on preparation for adult life

As a result of engagement with HRBs, university students may not receive enough opportunities to prepare themselves for the future and consequently lose chances to advance in their life (Tittle et al., 1978). For example, an individual under the influence of drugs may become unable to perform tasks related to a particular job or studies because of his/her cognitive impairment (Hough and Tilley, 1998). The person who cannot recall where a certain item should go or the protocol to be followed in case of a certain event is unlikely to do well in their studies or remain employed (Werner and Smith, 2001). In fact, without a stable job or a source of income such people are also less able to raise their family and therefore this is likely to lead to a lonely anti-social life (Larzelere and Patterson, 1990). The adult lives of youths who engage in HRBs intensively can therefore be predicted negatively.

Furthermore, a university student's engagement with HRBs may result in his/ her dropout from educational life. According to Breslau et al. (2011), there is a reciprocal relationship between HRBs and dropout rates as, in some cases, poor academic achievement is a direct predictor of imminent engagement in HRBs. On the other hand, engaging in HRBs can lead to poor academic achievement and this can easily lead to school dropout. Generally, people who are highly educated are more likely to get meaningful and more satisfying employment. A report by the OECD (2015) shows that in most nations across the world, including Saudi Arabia, graduates receive higher

chances of getting employed than non-graduates. This indicates the vital need of effective and continuous formal education to become successful in future life.

3.7 Conclusion

In this Chapter, the concepts of 'risk' and 'health risk behaviours' (HRBs) have been discussed through studying their factors and interactive features. The theories and research findings discussed here show the relationship between risks, risk taking behaviours and people's engagement with HRBs. Additionally, it elaborates several risk and protective factors of HRBs. In the discussion, young adults have been prioritised because the focus of this thesis is the university students of Saudi Arabia. The discussion on the major outcomes of HRBs among young adults also helps realise HRBs comprehensively within a particular age group. The review has been helpful in exploring the research questions of this thesis, particularly those which deal with the HRB factors and the reasons for students' engagement with them. It also constructs the basis for exploring the tendencies of HRBs in Saudi Arabia, the context of this research, and a detailed theoretical discussion on this issue are addressed in Chapter 4 and 5 respectively.

However, the findings of the literature review establishes the need for exploring social and cultural contexts for an effective understanding of the existing HRB factors and their influences on the people of Saudi Arabia. This review has highlighted that many developed countries have already identified HRBs as a threat for people's health and development along with the peace and stability in the society, and consequently have taken suitable measures to prevent them. Unfortunately, in Saudi Arabia this is a new

area to study and there is no adequate research findings that can help in this exploration process. It is therefore crucial to investigate the state of HRBs, associated factors and how they interact, and most importantly the preventive measures that would be suitable in the Saudi context. The study on the health risk behaviours among university students in Saudi Arabia therefore needs to be a baseline one, exploratory, and context-bound.

Chapter 4 : State of HRBs in Saudi Arabia

4.1 Introduction

In the previous chapter, the concept of risks and health risk behaviours (HRBs) is explored with particular references to young adults. In the discussion, the phenomenon of these two areas is reported with a number of global examples which mostly reflect the situations in developed countries such as USA, UK and a number of European countries. While reviewing the existing literature it has been found that HRB related studies within Saudi context are very limited and this kind of investigation in the country is problematic for various social, cultural and political reasons.

As the focus of this thesis is a Saudi Arabian university, it therefore seems necessary to explore any risk related research findings, especially with the young adults, in the Saudi setting. It is expected that the findings would provide a baseline understanding of the prevalence of HRBs, such as the types of HRBs, in the country and also the rationale for conducting this thesis within an urban University context.

The review of literature on HRBs in Saudi Arabia is complicated due to inadequate government documentation and lack of relevant studies. The reasons for this limitation can be identified through the description of Chapter 2 where the unique social and cultural features of the country have been discussed. In fact, Saudi communities are in general not open to sharing personal issues, particularly those which are negative and harmful. Besides, the government of the country is sensitive in conducting and publishing any study on HRBs as it considers the dissemination of the presence of HRBs may hamper the positive image of the government and the community, both

nationally and internationally. However, a number of studies conducted by individual researchers and foreign organisations provide useful data on the target issues.

Although HRBs were not the key themes of those research projects, some of the findings provide useful evidence to have an understanding about the state of HRBs in Saudi Arabia. For example, Bendak (2005), Abou-Zeid et al. (2009), and National Society for Human Right (2006) studied accidents, health habits, and human rights issues respectively which have provided with some findings that are relevant to HRBs.

Based on a number of research findings, discussed in section 4.2 below, the following six major types of HRBs have been identified in the Saudi context.

4.2 Types of HRBs in Saudi Arabia

A range of literature was consulted to explore HRBs in Saudi Arabia. It has been found that the Saudi official publications, such as reports and websites of government ministries and departments, contain minimum information about many possible HRBs, such as drug abuse and illegal sexual relationships. The reason for this absence of information is possibly because the government considers revealing information about such negative behaviours of Saudi nationals would be derogatory for the country.

Moreover, as there are no private organisations that provide reliable data in the health sector, receiving any data on HRBs in the country from this source was not possible.

However, a number of international research and individual academic studies on HRBs in Saudi Arabia were found, which have proved useful for this thesis. It is important to mention that in many cases the descriptions are supported by the personal experiences of this researcher who was born and brought up in Saudi Arabia and has been working at a university in the country for a long time.

The review of literature has identified the prevalence of the following six HRBs in Saudi Arabia.

- Disobedience of traffic rules and car accidents
- Smoking
- Substance abuse
- Violent behaviours
- Illegal sexual relationship
- Unhealthy eating habits and physical inactivity

The state of the six HRBs within Saudi society is explored in detail in the section that follows which includes several reasons for their engagement. However, the findings are generally based on particular areas of Saudi Arabia, such as urban or rural settings, or only with respect to children. Therefore, caution would be needed in generalising these findings to all the people of the country or university students who are the focus of this research.

4.2.1 Disobedience of Traffic Rules and Car Accidents

In recent years in Saudi Arabia, because of the economic development through oil and mineral industries, the number of rich people has increased dramatically.

Consequently, various vehicles on the roads have increased significantly to cater for these people's needs resulting in dangerous road conditions. In the country, nowadays driving is a common activity among young people, but the tendency of ignoring traffic

rules and regulations while driving is also high (Bendak, 2005). In fact, here, driving without a licence is common (Abou-Zeid et al., 2009). As a result, a high number of vehicle accidents is reported (King Abdulaziz City for Science and Technology, 2012) which recognises traffic fatalities as the major reason for deaths among Saudis (Bener and Jadaan, 1992). According to Ansari et al. (2000, p 22) 5, 64,762 people died or were injured in road accidents during 1971 to 1997 in Saudi Arabia which is about 3.5% of the country's total population. The researchers identified that the excessive speed of vehicles was the key reason for those road accidents. Indeed, deaths among adolescents and young people in the country were mainly caused by vehicle injuries. According to research findings, the age group of 15 to 25 in Saudi drivers accounts for more than half of the total car accidents and most of these teenagers are less than 18 years old (Al-Ghamdi, 2003). Joffe-Walt (2010) noted that the country has the world's highest number of deaths from road accidents among young people between the ages of 16 and 35.

However, despite the loss of young people, the issue of deaths and injury caused by road accidents has not been studied adequately by researchers to identify the main determinates of these occurrences. Furthermore, in response to the current situation, legislators in Saudi Arabia have failed to adopt proper regulations and policies such as increasing the legal driving age and compulsory traffic education. Moreover, the education sector does not offer proper programmes to educate and increase awareness about the risks of such behaviours among adolescents and young students. In this circumstance, King Abdulaziz City for Science and Technology (2012) has predicted that traffic accidents may reach four million by 2030 if no action is taken.

a) Reasons for vehicle accidents

The high rate of vehicle accidents among the young people in Saudi Arabia has various reasons. Firstly, many young people consider driving as an exciting activity and they spend a significant amount of time doing so (Abou-Zeid et al., 2009). Similarly, novice drivers learn to drive during adolescence and after a few months they become overconfident about their skills (Mayhew et al., 1998). Thus, it is highly likely that young drivers are involved in car accidents because they lack sufficient experience. Secondly, laxity of police is also blamed for the high number of accidents recorded among youths in Saudi Arabia (Abbas et al., 2011). Although, the use of seat belts is likely to prevent motor accident injuries, there are young Saudi adolescents who do not fasten their seat belts while driving. It often happens that young people, when in traffic, try to overstretch their skills by driving very fast and staying close to other drivers. This means that they present a high risk to themselves as well as other motorists (Jonah, 1986). Thirdly, dangerous driving activities such as auto drifting, a 'driving technique where the driver intentionally over-steers, causing loss of traction in the rear wheels, while maintaining control from entry to exit of a corner' (Abdulrahim, 2006, p 1), is generally practised by youngsters in places where it is difficult for the police to promptly intervene and stop them. Recently, a YouTube video clip shows how a group of young people, who were identified later as students of the University of Taif, escaped a police patrol (Albader, 2012). Another video clip shows that these risky behaviours have even reached secondary school students in Saudi Arabia who were performing auto drifting inside their school yards (Z350 nissan, 2102).

In Saudi Arabia, riding luxurious motorbikes is generally considered as a fun activity among young people who are often eager to show off their higher driving skills to the public, rather than for commuting purposes. What makes the situation more complex is the fact that driving a car or motorbike without insurance is not an offence in Saudi Arabia. In addition, there is no age restriction by the law with regard to people who can ride them. In many cases, motorbikes are frequently ridden without any protection such as helmets or protective clothing. Moreover, although there is evidence that young drivers drive cars after consuming drugs or alcohol (Noked, 2010), no evidence has been recorded yet from either the Ministry of Health and Ministry of Interior in Saudi Arabia regarding this issue.

Although presently there has been an increase in car accidents in many countries (WHO, 2004b), there are different incentives to challenge this phenomenon as well. Besides the enforcement of law, education programmes and initiatives in developed countries have succeeded to some extent, to tackle and reduce this issue among people. For instance, in 2010, the UK's Department of Environment, Food and Rural Affairs (DEFRA) initiated the 'Road and Safety Education' and in New Zealand, Australia and the United States the 'Graduated Driver Licensing' was designed to educate children and young people about road safety. Both programmes have shown positive implications for young people (DiClemente et al., 1996, Williams et al., 2012).

Education and training programmes have been recognised as successful approaches to inform students about road safety, which have been shown to reduce the number of traffic fatalities globally (Mayhew et al., 1998). Yet, there is no significant proposal in Saudi Arabia to adopt some of these incentives to provide road safety campaigns

which can provide young people with the necessary knowledge and skills regarding decision-making when approaching risks. However, it cannot be denied that no single technique can entirely reduce and prevent young people from indulging in high risk motoring behaviour. For this reason, in Saudi Arabian context, other alternative approaches are needed to be considered for ensuring the highest rate of road safety, particularly among youth groups.

4.2.2 Smoking

Smoking is a highly prevalent HRB worldwide (WHO, 2008b). Despite the dramatic international incentives set by international organisations on smoking legislation in the last ten years, tobacco remains highly popular among adolescents and young adults (Obermeyer, 2015). Here, in part 'a', a brief review on smoking, along with its types and origins is given with a focus on the Saudi Arabian context. Later, the varied rates of tobacco consumption among different age groups and gender are outlined in part 'b'.

a)Types

Tobacco products are extensively consumed worldwide and commercial production are derived from three types of preparations namely (i) pipes including water-pipes, (ii) rolls of tobacco such as bidi, cigar and cigarette; and (iii) oral preparation for chewing and holding in the mouth or placing in the nose such as snuff, snus and betel quid (WHO, 2006). In Saudi Arabia the first two types of tobacco are most popular. The consumption of these two types in the country is discussed below.

Pipes: Water-pipe smoking (WPS), known by a number of different names, including 'argileh', 'hubblebubble', 'shisha' and 'moassel' (Knishkowsky and

Amitai 2005); has been being practised extensively for more than four hundred years (Wechsler et al., 1998). There are regional and cultural phenomena involved in this tradition in Saudi Arabia. In many countries of the Middle East, Africa and South Asia smoking with water pipes is very common and the rates of smokers are also high. For example, the current estimated use of water-pipes at age 13-15 years in the nations of Eastern Mediterranean Region (EMR) ranges from 9% among girls to 14% among boys (WHO, 2011b). At the end of the last century, there was a dramatic increase of WPS use in Saudi Arabia, notably among the young people (Saeed et al., 1996).

One important feature of using water-pipe for smoking is that one or more smokers can inhale the smoke at the same time. The experience of WPS has been found as an extremely sociable activity and this contributes to its popularity among young people in Saudi Arabia (Bassiony, 2009). Another important feature of WPS is that the amount of the tobacco composition used in them is changeable and not well standardised (WHO, 2006).

Research indicates that there has been a considerable resurgence of WPS during the past century in Saudi Arabia due to several reasons (Mamary et al., 2002). First of all, there was a false perception that WPS is less dangerous than cigarette smoking (Knishkowsky and Amitai 2005; World Health Organisation 2006). This view on the use of WPS compared with tobacco smoking links back to the physician Abul Fath in 16th century, who suggested that passing smoking through water can reduce the harmfulness

of its substance (Knishkowsky and Amitai, 2005). In addition to this, a number of other factors including its immediate availability, its low cost and lack of regulation about tobacco consumption, have motivated the people in Saudi Arabia to adopt WPS. Moreover, WPS is linked to the socialising process which often engages peer groups and families, and is consumed in café shops where people spend time chatting and for entertainment.

In Saudi Arabia, different types of WPS have attracted people with different backgrounds. For example, 'shisha' has principally become the habit of elderly and retired men and labourers who spend most of their evenings in traditional cafes, particularly in poor areas. On the other hand, 'moassel' is served in luxurious restaurants and cafes to young and adults alike. Unemployment among young people aged 15-24 in the country, which has reached 28.2% at present, might be classified as the major contributor to influence young people to meet for purposes of chatting and smoking (The Central Intelligence Agency, 2012).

Cigarettes: The WHO (2008b) and the Centre for disease control and prevention (2012) in their report titled Global Youth Tobacco Survey (GYTS) showed that smoking generally starts among adolescents as early as the age of 13. This early behaviour may play a causal role in the development of various HRBs such as drug substance use among the students of higher educational institutions (Omori and Ingersoll, 2005). Data collected through a national survey in Saudi Arabia between 1990 and 1993 revealed that the overall prevalence of smoking was 21.1% for males and 1% for females, whereas

an estimated 6.7% of 13 to 15 year old students were involved in the practice of smoking cigarettes (Jarallah et al., 1999). Jarallah et al. also mentioned that in 1998 the percentage of smoking was 34.4% in the country, which indicates a significant increase of the rate. WHO (2009a) report also supports this claim by showing that tobacco consumption in Saudi Arabia has increased annually by 3.4% up to 2009 (WHO, 2009b). These figures emphasise two major facts: there has been an increase in smoking and more Saudi women have started to smoke over the last two decades. By analysing the statistics it can be predicted that cigarette smoking among the young people at universities in the country might be higher. In a separate survey, (Bassiony, 2009) found that, during 1999 to 2009 in Saudi Arabia, the prevalence of tobacco consumption among young adults at the university level was about 37%. In the study, idleness, peer pressure and enjoyment of smoking were examined as predictors. In relation to this, the vulnerability regarding smoking among young Saudis to start consuming tobacco was projected to be about 14% among girls and 20% among boys in 2010 (WHO, 2011c).

Despite the fact that several studies have been carried out in the Arab Gulf States, including Saudi Arabia and other Arab countries, on tobacco consumption among secondary/high-school students; only a few have focused on university students (Behbehani et al., 2004). However, these studies have demonstrated that smoking cigarettes and water-pipes is a widespread phenomenon in Saudi Arabia which is increasing dramatically over time.

b)Rate of consumption

In 2011, there were an estimated 1.3 billion smokers in the world (WHO, 2011c).

Although the total number of smokers in Saudi Arabia has not been surveyed, it has been identified that the rates of smokers (both WPS and Cigarettes) in the country vary according to gender and age groups. For example, the estimated prevalence of smoking among those aged fifteen years or more in Saudi Arabia in the year 2009 was 24% males and 1% females (WHO, 2009b). These figures may be higher among the university students (Higgins et al., 2010).

In Saudi Arabia, a study among 1382 students at King Faisal University showed that the prevalence of smoking was 28.1% and among those 41.4% were living at homes and 17.0% started smoking before the age of twelve (Al-Mohamed and Amin, 2010). A family health survey conducted in 1996 estimated that 19% of those aged fifteen were current smokers and among them 18% were men and less than 1% were women (Khoja et al., 2000). Another study conducted in King Abdulaziz University among the female university students found that among the respondents 11% were current smokers and 5% of them were cigarette smokers, 8.7% were water pipe consumers and 2.7% were using other tobacco products (Merdad et al., 2007). Similarly, Hashim (2000) found 29% current smokers in another Saudi university; among those, 20% were male and 9% were female. The statistics and study findings discussed here indicate that the prevalence levels of smoking among general people and university students, both male and female, in Saudi Arabia are significant.

4.2.3 Substance Abuse

Substance abuse refers to the risky and unsafe use of psychoactive substances including illegal drugs and alcohol which have been a long-standing problem worldwide (WHO, 2011a). Governments are operating various expensive and complex programmes to protect their people from abusing illegal substances (Lowinson, 2005). Although the data about substance abuse consumption in Saudi Arabia is still not available, it can be assumed by many authorities in the Ministry of Health and General Directorate of Narcotics Control (GDNC) of the country that the situation about the use of drugs among young people is not at an alarming level. However, the growth of agencies to tackle drug consumption and its consequences around the country, which are supported by the government and private sectors, provides a more realistic picture and concerns about the significance of its spread.

In Saudi Arabia the consumption of various illegal drugs such as cannabis, heroin and cocaine is evident (United Nations Office on Drugs and Crime, 2011). By analysing the specialised outpatient visits and inpatient admissions in psychiatric hospitals the Ministry of Health of Saudi Arabia reported that alcohol and substance abuse in the country substantially increased in 2007 compared to 2003 (Ministry of Health, 2009). A cross-sectional study in a hospital in Riyadh specifically identified that 23.75% of its patients were addicted to alcohol (Isa and El-Sabbagh, 2014). Print and electronic media of the country also regularly report government operations leading to the seizure of various amounts of alcohol and drugs. However, this type of media coverage may not be fully trusted as it operates under the censorship of the government, where it is possible that the government tries to present a positive picture by publicising the

seizures (WHO, 2011b). Eventually, no statistics have been published so far by the Police or General Directorate of Narcotics Control (GDNC) department on this area.

On the other hand, alcohol abuse is internationally recognised as a serious public health concern. Research on this topic among the Arab states is however limited (AlMarri and Oei, 2009). Consumption of alcohol or other addictive substances is illegal in Saudi Arabia as the law is based on Islamic Sharia rules which forbid drinking any amount of alcohol and taking any form of illegal substances. It can be assumed that since alcohol and substance use are prohibited by law, fewer people consume them in the country. Yet, in reality, this assumption seems to be false as Faso and Salvador (2001) found in their research that the unrecorded alcohol consumption in Saudi Arabia was 0.6 litres pure alcohol per capita in 1995 among the population that was older than 15 years. However, any finding regarding alcohol consumption is not available from Saudi government departments because these authorities consider publishing such data harmful for the image of Saudi people. Moreover, there may be a concern that this type of published data will put excessive pressure on these departments by the Saudi people to investigate and tackle this phenomenon.

Despite the fact that religious, social and legal systems in Arab countries disapprove and prohibit use of drug substances, in reality a significant Saudi population consumes them for many reasons. First of all, the geographical position of the country gives it the proximity to opiate-producing countries such as Afghanistan, Pakistan and Iran (AlMarri and Oei, 2009). The situation is far more complex because the wide borders of the Kingdom extend to more than 6,760 km and drugs can easily be smuggled into the country. Secondly, there are high numbers of pilgrims who come to perform Haj and

Omriah (two Islamic congregations) every year and among them are people who smuggle in illegal substances (Leghari, 2002). Thirdly, due to the rapid growth of the Saudi Arabian economy, millions of workers have been migrating from different parts of the world to the country, and so it is highly likely that some of those workers are consuming illicit substances (Leghari, 2002, Robins, 2011). Moreover, interacting with these migrants has been causing the change of the demographic characteristics in some cities in Saudi Arabia. It is a reality that the non-Saudi population in cities such as Jeddah, Makah and Medina is greater than the native population. According to government figures, foreign workers constitute approximately one third of the whole population in the Kingdom of Saudi Arabia (Bradley, 2015) and most of them are from poor and developing countries such as Philippines, Pakistan, Bangladesh, Egypt, Somalia, Sudan, and Yemen where substance abuse is widely spread (Madhi and Barrientos, 2003). Fourthly, some Gulf States, namely Bahrain and the United Arab Emirates, are not as strict as Saudi Arabia about the consumption of alcohol and drug substances, which consequently allows a number of private sectors in those countries to serve alcohol. Because of the strong historical, religious and economic ties, many Saudi nationals frequently visit these countries and get engaged with alcohol and drug consumption.

Research findings (Ageely, 2009) provide evidence on the use of drugs in Saudi Arabia by foreigners, mainly by workers and immigrants. According to his study, chewing 'khat', which is classified as a drug by the WHO and the government of Saudi Arabia, is spreading in the South-West of the Kingdom and the border with Yemen. In those regions of the Kingdom where there is a high percentage of immigrant workers from

Yemen and Africa, Jeddah is a particular case, are also taking 'khat'. Ageely (2009) also reported that the overall prevalence of 'khat' chewing among college students in the University of Jazan, which is located in Jazan City close to the Yemen border, was 21.4%. However, there is a shortage of national data about the prevalence of 'khat' chewing in the context of the entire Kingdom.

4.2.4 Violent behaviours

Violence is a widespread phenomenon among young people and it can take various forms, including homicide, physical fights and suicide (Krug et al. 2002). In general, the government of Saudi Arabia does not have reliable statistics on violence. However, by analysing the social, economic and cultural features of the country (please refer to Chapter 2 and 3), a number of identifying factors linked to violent behaviours can be observed, such as the possession of fire arms and negative treatment towards women. Carrying a weapon is a part of the tradition and personal identity of Saudi nationals which can often be a cause for violence. Similarly, violence against family members, particularly against the women, is a concern in the country. In Saudi Arabia many patients are admitted in hospitals with injuries that have apparently resulted from family violence (Almosaed, 2004).

Although the following table (see Table 4.1) indicates a low level of violence in the country (only 3,575 in 2006), the available data are still inadequate in this area (National Society for Human Right, 2006).

Table 4.1: Violence Rate in Saudi Arabia

Total of cases received by the National Society for Human Right

	Admin	Prisoners	Laborers	Family Violence	Personal Status	Civil Status	Judicial	"Others	Total
Year 1425H- 2004	193	271	289	44	37	66	56	158	1114
Year 1426H-2005	822	636	378	284	296	217	251	995	3879
Year 1427H-2006	912	603	422	385	298	307	183	465	3575
Change percentage for the last year	11%	-5%	12%	36%	1%	41%	-27%	-53%	-13%

Moreover, there is no reliable national data about young people in Saudi Arabia on this issue. The key reason behind the government’s reluctance to publish reliable data is that probably wants to reduce the pressure from public and international organisations on government authorities thereby avoiding any chances of harming the image of Saudi society. Furthermore, the lack of government facilities (such as departments, professionals and laws) may be major causes for not collecting data on this issue and also not considering it as a valuable approach for helping researchers and policy-makers to investigate and tackle violence related problems in Saudi society.

4.2.5 Illegal sexual relationship

There is very limited research on sexual behaviours in Saudi Arabian context, particularly with the young people. The country is predominantly Islamic faith-based which strongly prohibits pre-marital sex. However, in some cases this religious value is not completely obeyed by Saudi young adults (Fageeh, 2008b). In fact, there is a wide gap between what is expected from Saudi young adults and what they actually do. Many university students of the country are engaged with pre-marital sex but in a very covert manner so that it is not easily detectable. Fageeh (2008b) stated that, in some cases, most STDs/STIs are not diagnosed and this may easily account for the low

prevalence recorded in the Saudi context. Moreover, it is a taboo for people in Saudi Arabia to discuss STDs/STIs and consequently there is minimal research on this area. However, it has been identified that many university students in Saudi Arabia are unaware of the sexually transmitted disease which leads them to be engaged in pre-marital and unsafe sex (Fageeh, 2008b).

4.2.6 Unhealthy eating habit and physical inactivity

One of the most prevalent HRBs worldwide is unhealthy eating and the habit is widespread among young adults in Saudi Arabia too (Al-Rethaiaa et al., 2010). Based on the religious beliefs and culture, there are certain dietary preferences among the people of the country, however there has been an increase in the proliferation of Western eating habits which is believed to affect young adults more than any other groups (Al-Rethaiaa et al., 2010).

There are different forms of unhealthy eating habits, including, as mentioned previously, overeating and undereating. Overeating is the commonest form of unhealthy eating recorded among the university students in Saudi Arabia (Al-Rethaiaa, et al. 2010). However, Al Qauhiz (2009) stated that in undereating disorders are highly evident among the female students because they wish to have a thin and attractive figure. Whilst under eating is not significant among the males of Saudi Arabia many of them are involved in overeating (Al Qauhiz, 2009; Al-Rethaiaa et al., 2010).

Similar to unhealthy eating, physical inactivity is also common among the Saudi people (Al-Hazzaa et al., 2012). Although this risky behaviour may cause diseases like coronary heart disease, cancer, and premature mortality (Lee et al., 2012), because of the rapid

changes in the lifestyle (such as higher use of vehicles for transportation and the office-based work that does not require any significant amount of physical labour), the habit of physical inactivity is increasing in Saudi Arabia. Consequently, researchers have reported high rates of the prevalence of overweight and diabetes in the country (Al-Nozha et al., 2005, Al Khudairy et al., 2015).

4.3 Summary

The literature reviewed in this Chapter highlights a variety of types of HRBs prevalent in the Saudi community, including disobedience of traffic rules and car accidents, smoking, substance abuse, behaviours that contribute to violence, sexual behaviours, and unhealthy eating and physical inactivity. Unfortunately, most of the studies reviewed are quite general and refer to the general population. To this end, there is a knowledge gap with reference to the state of HRBs amongst the young Saudis, particularly at university and other institutions of higher learning. Yet, the researcher's position as an academic in one of the universities in Saudi Arabia enabled him to observe a number of young adults' lifestyles at the university that could be indicators of a systemic progression in the prevalence of the HRBs. Nonetheless, such observations are subjective and cannot be relied upon to make objective conclusions. To this end, a scholarly investigation is warranted to critically study this phenomenon as it has not been fully explored.

Chapter 5 : Theoretical Framework

5.1 Introduction

There has been a shift in the causes of disease in most of the parts of the world.

Previously, most morbidity was caused by communicable diseases prior to the advancement of medicine and technology. Hitherto, according to Glanz et al. (2008), non-communicable diseases arising from risk behaviours such as smoking, drug abuse, and others claim more lives than before. Indeed, the greatest public health problem is how to prevent health risk behaviours that lead to such preventable diseases. Glanz et al. claim that the greatest hope for reducing the burden of preventable diseases lies with behavioural change (Glanz et al., 2008). This claim could be as a result of the significant drop in the levels of smoking in the USA, down by half since the publication of the first Surgeon General's Report on Smoking and Health in 1964 (US Public Health Service, 1964).

Some studies indicate that many young people are said to be at the greatest risk as a consequence of engagement with various HRBs (Bonino et al., 2005b, Wolfe et al., 2008, DiClemente et al., 2009, You, 2011). Even though a number of health campaigns and other interventions have been formulated, the problem seems to be perpetual. Additionally, many theories and models have evolved to inform behavioural change and or promote healthy living. This is partly due to the fact that optimal physical and mental health are imperative for normal human functioning and for the economic health of countries. Earlier on, psychologists suggested that behaviour could be predicted and that human beings had control over behaviour if there was sufficient motivation. To this end, theories and models such as the Health Belief Model (HBM),

the Theory of Planned Behaviour (TPB), and the Theory of Reasoned Action (TRA) have arisen and evolved to inform about the prevention of HRBs such as those outlined in this thesis.

The current study is underpinned by theories and models that provide an understanding of HRBs especially amongst young persons. To this end, this chapter presents the main tenets of several theoretical health risk behaviour models that later inform the development of a theoretical model by the researcher to guide the research in this thesis. The key models and theories to be reviewed include Health Belief Model or HBM (Hochbaum et al., 1952), the Theory of Planned Behaviour or TPB (Ajzen, 1985), the Theory of Reasoned Action or TRA (Ajzen, 1985), the model for adolescent health risk behaviour by (Jessor, 1992b), the adolescents problem behaviour model (Hawkins and Weis, 1985), the risk and protection model by Armstrong et al. (2005), and the social development model by Hawkins et al. (1980). Others include, the ecological system model by Bronfenbrenner (2005), problem behaviour theory (Jessor and Jessor, 1977) and decision-making theory (Lee, 1971, Ranyard et al., 1997, Byrnes, 2013). The developmental cognitive neuroscience framework (Steinberg, 2008) is also the key to this current study.

Most of the models and theories are to some extent interactionist in nature and they are relevant to this study because they provide an authoritative basis for the formation of a customised model that will be used in this research. Interactionist models present several components that interact to produce either desired or undesired outcomes. For example, some models outline interactions between individuals and their contexts, while others outline interactions between the different aspects of their environments

or social contexts. Interactionism suggests that individuals interact with their social contexts and that these have shared symbols for members of particular social groups (Matthes, 1982). In this case individual behaviour and people's consciousness are influenced by the social processes that take place around them (Matthes, 1982). Interactions between individuals and the contexts in which they live are said to take place in situations defined by people taking part in them and shared meanings and symbols aid these interactions (Matthes, 1982). Interactionism is therefore of immense interest in explaining behaviour because it explains the way people are socialised into their cultural and sub-cultural settings (Matthes, 1982). These are illustrated more comprehensively later in the theoretical framework. The review of the models and theories starts with a group of models that mainly relate to risk and protective factors, behaviours and risk outcomes.

5.2 Models of Risk and Protective Factors, Behaviours and Risk

Outcomes

Jessor (1992b) and Hawkins et al. (1980) in Figure 5.1; and Hawkins et al. (1999a) in Figure 5.2, developed interactionist models that explain the influence of four domains, including individuals/peers, family, school, and community, explained earlier in section 2.4, on the development of HRBs. These interactionist theories are built on the premise that 'human behaviour is predicated by their individual/personal characteristics as they interact with contextual /social characteristics' (Jessor, 1992a,p. 374). In other words, people behave in ways that are influenced by the families they live in, their peers, and the communities in which they live and by the schools they attend. Based on these theoretical perspectives, the present study sought to develop a

model that shows the interactions between the different domains, how they relate to one another, how they may lead to risk taking/ HRBs and the potential consequences of HRBs within a Saudi Arabian context.

Engaging in HRBs eventually leads to negative health outcomes, as explained by Jessor (1992a) in Figure 5.1. Jessor's model outlined risk factors that predetermine adolescent behaviour and these include biology, social environment, perceived environment, personality, and behaviour. All these factors can influence individuals to engage in risk behaviours potentially resulting in negative health outcomes.

The model by Hawkins et al. (1980), Figure 5.2, outlined the factors that affect adolescent risk behaviours and the health outcomes of those risk behaviours. It outlines the influences of biology, social environment, perceived environment, personality and risk and protective factors on the behaviours of adolescents. These aspects work together to determine the behaviours exhibited by individuals.

The model by Armstrong et al. (2005), Figure 5.3, establishes the relationship between risk and protective factors. Armstrong et al. (2005) stated that the relationships between risk and protective factors influence anti-social behaviours. Risk factors include individuals, the school, the community and family, while protective factors include those factors which are attributable to the child; family factors which are attributable to family functioning; and society factors which include the characteristics of the wider society (Armstrong et al., 2005). When protective factors fail, individuals are more likely to engage in antisocial behaviours which may also include HRBs (Armstrong et al., 2005).

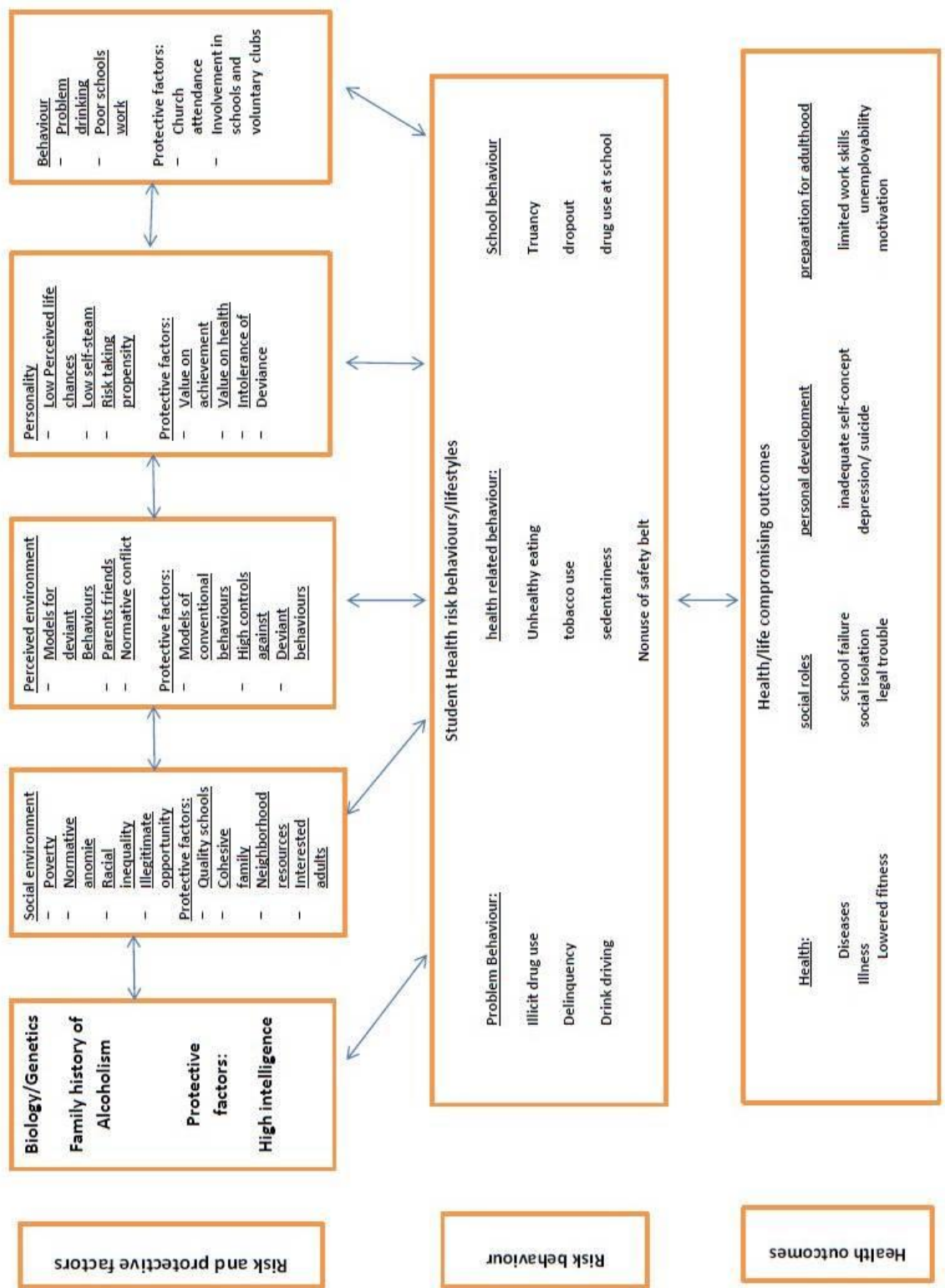


Figure 5.1: Model for Adolescent Health Risk Behaviour (Jessor 1992a)

Domains	Risk Factors	Adolescent Problem Behaviors						Protective Factors
		Substance abuse	Depression/anxiety	Delinquency	Teen pregnancy	School dropout	Violence	
	Risk factors are characteristics of individuals, their families, schools, and community environments that are associated with increases in alcohol and other drug use, delinquency, teen pregnancy, school dropout, and violence. The following factors increase the likelihood that children and young people may develop such problem behaviors.							Factors associated with reduced potential for drug use are called protective factors. They encompass family, social, psychological, and behavioral characteristics that can provide a buffer for young people. These factors mitigate the effects of risk factors.
Community	Availability of alcohol/other drugs	✓					✓	Opportunities for prosocial involvement in community Recognition for prosocial involvement
	Availability of firearms			✓			✓	
	Community laws and norms favorable to drug use, firearms, and crime	✓		✓			✓	
	Transitions and mobility	✓	✓	✓		✓		
	Low neighborhood attachment and community disorganization	✓		✓			✓	
	Media portrayals of violence						✓	
	Extreme economic deprivation	✓		✓	✓	✓	✓	
Family	Family history of the problem behavior	✓	✓	✓	✓	✓	✓	Bonding to family with healthy beliefs and clear standards
	Family management problems	✓	✓	✓	✓	✓	✓	Attachment to family with healthy beliefs and clear standards
	Family conflict	✓	✓	✓	✓	✓	✓	Opportunities for prosocial involvement
	Favorable parental attitudes and involvement in problem behaviors	✓		✓			✓	Recognition for prosocial involvement
School	Academic failure beginning in late elementary school	✓		✓	✓	✓	✓	Bonding and attachment to school
	Lack of commitment to school	✓		✓	✓	✓	✓	Opportunities for prosocial involvement Recognition for prosocial involvement
Individual / Peer	Early and persistent antisocial behavior	✓	✓	✓	✓	✓	✓	Bonding to peers with healthy beliefs and clear standards
	Rebelliousness	✓		✓		✓		Attachment to peers with healthy beliefs and clear standards
	Friends who engage in the problem behavior	✓		✓	✓	✓	✓	Opportunities for prosocial involvement
	Favorable attitudes toward the problem behavior (including low perceived-risk of harm)	✓		✓	✓	✓		Increase in social skills
	Early initiation of the problem behavior	✓		✓	✓	✓	✓	
	Gang involvement	✓		✓			✓	
	Constitutional factors	✓	✓	✓			✓	

Figure 5.2: Risk Factors for Adolescents Problem Behaviour Model (Hawkins et al.1992)

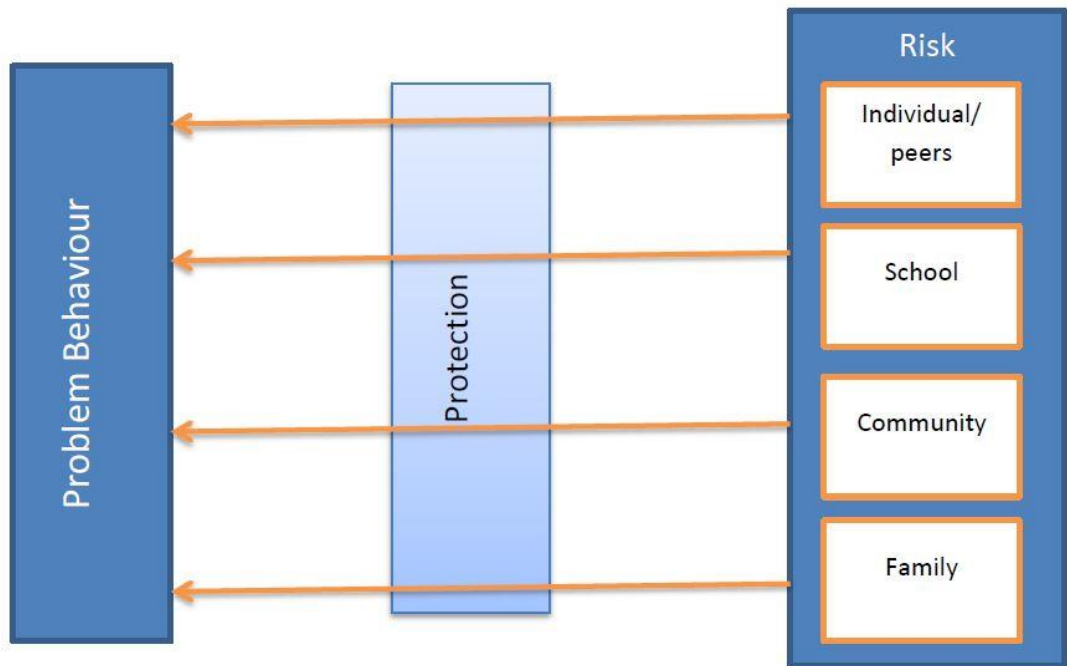


Figure 5.3: Risk and Protection Model (Armstrong et al. 2005)

5.3 Social Development Model

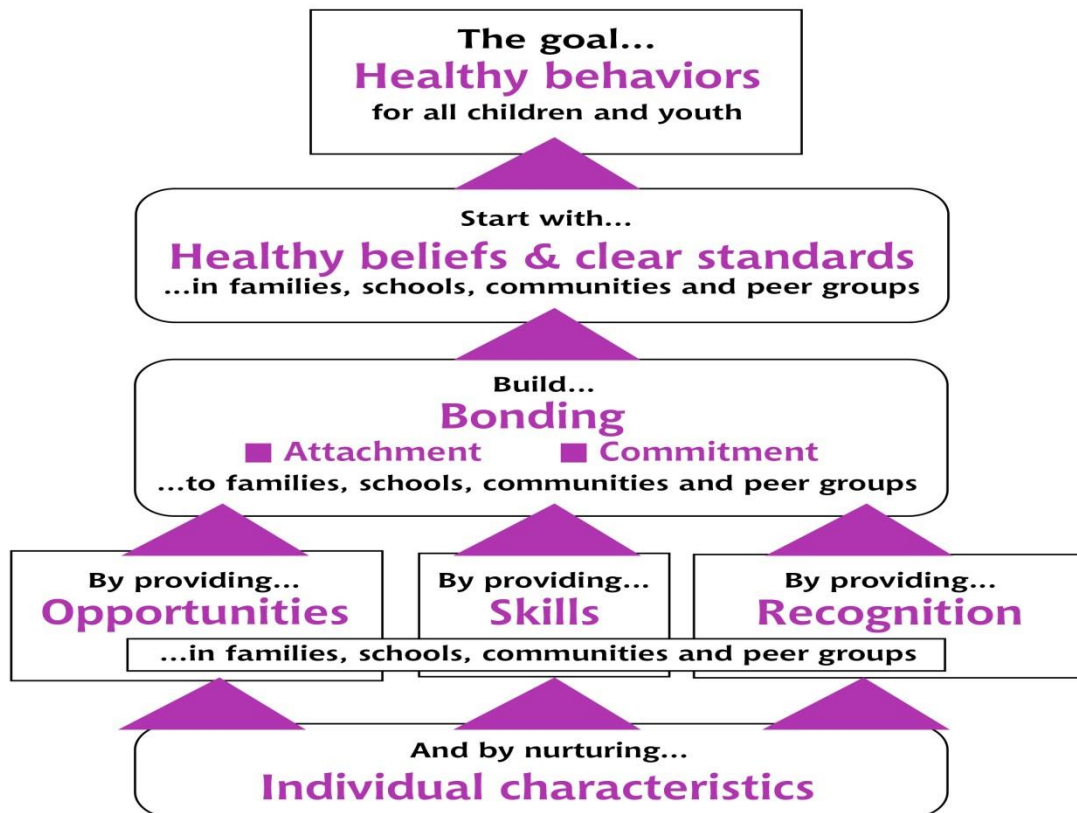


Figure 5.4: Social Development Model or SDM (Hawkins and Weis, 1980)

Hawkins and Weis (1980) developed a social development model (Figure 5.4), from the interactionist model outlined earlier. This model is also interactionist in nature and it lays emphasis on bonds with the family, peers and school as determinants of behaviour. Bourdieu and Putnam, cited in Siisiainen (2003), related bonding to the levels of social capital within a community which affects the levels of positive interaction between community members. Social capital theory is closely associated with the works of James Coleman, Robert Putnam and Pierre Bourdieu. According to Putnam, 'social capital has three essential components: moral obligations and norms, social values (especially trust) and social networks (especially voluntary associations)' (Putnam, 1995,p2). These forms of social capital are recognised as fundamental factors for the promotion of civil communities and societies in general. Bourdieu and Putnam stated that the higher the levels of sociability, social connectedness, collaboration, reciprocity and trust that exist, the better behaved individuals turn out to be. Simply, social capital can bind members of a family, community or a social network together. Therefore, the greater the interactions between individuals, the less likely they are to engage in socially unacceptable behaviour. Coleman defined social capital as 'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual' (Coleman and Coleman, 1994,p320). According to Coleman, social capital is an integral feature of families, child-parent relationships and the structure and organisation of family life. This has clear resonances within the domains, especially the effect of family that influence HRBs discussed earlier (see section 3.4). With high levels of social capital, bonding will be strong and therefore exert a high level of influence on a member of the family. Whilst it is acknowledged that strong bonding may have not always leads to positive

outcomes, individuals from such families may be less likely to take part in HRBs.

Bourdieu adopts a more social class-based approach and he considers social capital networks as part of social obligations that define group membership and create a sense of identity (Bourdieu, 1986). Again, this has clear links to the domains discussed earlier in terms of student identity in belonging to a peer group and a community of students, and may have either a strong positive or negative influence on HRBs depending on the social norms of the group, as earlier discussed in the risk and social acceptance in Section 3.3.1.1 (Shiner and Newburn, 1996, Bennett, 1998).

The different bonds highlighted by Hawkins and Weis (1980), Figure 5.4, determine opportunities that are presented, the skills developed by each type of bond and reinforcements available to individuals at the different levels of bonding. The interactions between the different bonds can either increase chances of engaging in HRBs or may reduce the same. This means that as people develop stronger bonds within the school, family, community and peer-group settings, the chances of taking part in HRBs reduce and vice versa (Hawkins and Weis, 1980). The model supports a preventive approach to dealing with HRBs (Hawkins and Weis, 1980) and thus encourages the development of contexts and relationships that prevent HRBs, as opposed to dealing with them after they have occurred. Another model (please see Figure 5.4) that is similar to that of Hawkins and Weis (1980) discussed above is the ecological systems theory.

5.4 Ecological Systems Model

The ecological systems theory was developed in 1979 by Bronfenbrenner (Figure 5.5) which postulates that individuals develop in complex environmental systems that

influence their progress (Bronfenbrenner, 2005). The theory is based on the belief that people do not grow and develop in a vacuum, but instead they interact with other people and things around them. The model is interactionist in nature, where people interact with different elements microsystem, mesosystem, exosystem and macrosystem (see Figure 5.5 below). Bronfenbrenner (1979) proposed several dimensions that are influential in the way people turn out to be and these include the context, personal characteristics, time, and process. These have been also examined by other scholars including Kail and Cavanaugh (2011), Santrock (2007), Gonzalez-DeHass and Willems (2012) and Allen-Meaers and Lane (1987). It is argued that contexts include the environments in which people live; personal characteristics, such as values and attitudes which determine interactions with the environment; variations in time, such as history or the age of development; and developmental processes that characterise human development. These elements interact in shaping the behaviour exhibited by individuals. The ecological systems theory is well aligned with the overall aim for this research because it does not only identify factors in the microsystem, mesosystem, exosystem and macrosystem (these are explained in more detail later) but also outlines the interactions between them which define individual development and behaviours, including HRBs. Bronfenbrenner's theory acknowledges the element of specificity in the interactions between people's personalities and the environments in which they live, which are important in this research because they reflect the relationships and interactions amongst students, from particular families within a broader university environment that is also nested within a broader national context.

As already outlined, the model has four main ecosystems: the microsystem; the mesosystem; the exosystem; and the macrosystem which represent levels of interaction between individuals and their environments (Thyer, 2008, Mizrahi and Davis, 2008, Thorpe and Schmuller, 2012). They are similar to other discussed models, such as the social development model which discusses interactions between individuals and their environments. The interactions are similar because the individual is affected by family, peers, school and the community, as in the previously discussed models. Nonetheless, ecological systems theory differs from other interactionist models because it has static tiers of interaction, as well as additional components such as mass media, industry and local politics within the exosystem. In other words, it outlines more components of interaction.

The systems affect people at different levels. The microsystem is at the innermost level, being the most influential out of the four ecosystems and includes the family, school and peers (Thyer, 2008, Mizrahi and Davis, 2008, Thorpe and Schmuller, 2012). The mesosystem is the second level, occurring after the microsystem and it also includes the family, school and peers but adds elements such as religious affiliations and covers the internal interactions between components of the microsystem (Thyer, 2008, Thorpe and Schmuller, 2012). The exosystem follows the mesosystem and it includes neighbourhoods, mass media, social services and legal services (Mizrahi and Davis, 2008, Thorpe and Schmuller, 2012). The macrosystem is the least influential system and is therefore located at the outermost segment of the ecosystem and includes attitudes and ideologies (Berkes et al., 2003, Thyer, 2008, Thorpe and Schmuller, 2012). Even so, this may apply differently to the Saudi Arabian context

where religious ideology highly determines people’s behaviour and may be applied differently to Western culture directly.

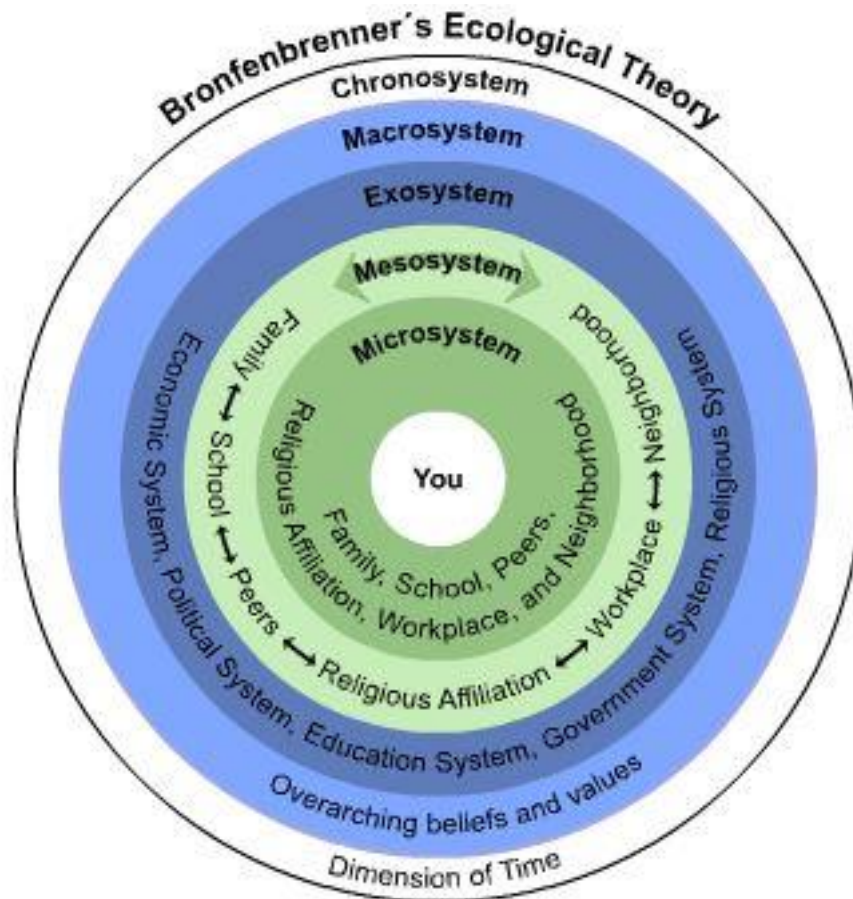


Figure 5.5: Ecological System Model(Bronfenbrenner, 2005)

5.5 The Health Belief Model (HBM)

The HBM is one of the most influential behaviour change models developed by social psychologists and it suggests psychological approaches to predicting human behaviour (Hochbaum et al., 1952). The overarching assumption the theory takes is that human beings are rational and that they have control over their behaviour. According to this theory, people who perceive themselves as at risk of illness and disease are more likely to uptake health behaviour that promises better health and wellbeing. Specifically, the

model suggests that there are six aspects of individual control that may make people take action to prevent and or control diseases, which include susceptibility, perceived severity of contracting the illness, the perceived benefits and barriers of taking a particular behaviour, the available cues needed to initiate the decision, and self-efficacy to perform the chosen behaviour (Glanz et al., 2008; School of Public Health, 2015).

This model is the key to this thesis as it has been used to understand why people may take up, as well as fail to adopt, certain risk control strategies recommended to them. This could inform the theoretical framework for this study in that it would partly highlight why young persons and other people tend to be engaged with HRBs regardless of the health campaigns against such risks.

It is, however, important to note that this theory is inadequate to a certain extent, as it fails to acknowledge the other factors besides cognitive control that predict behaviour. Moreover, the assumption taken by this theory, that human beings are rational and that they have control over their behaviour, has been questioned (Glanz et al., 2008). It has emerged that sometimes there are many variables that mediate someone's willingness to adopt healthy behaviour (see, for example, Bronfenbrenner's 'Ecological Systems Model', discussed above). It is for this reason that other theories and models evolved out of this model. Worth noting also is the theory of planned behaviour, which is an extension of the theory of reasoned action (Glanz et al., 2008) and which is discussed in the following section.

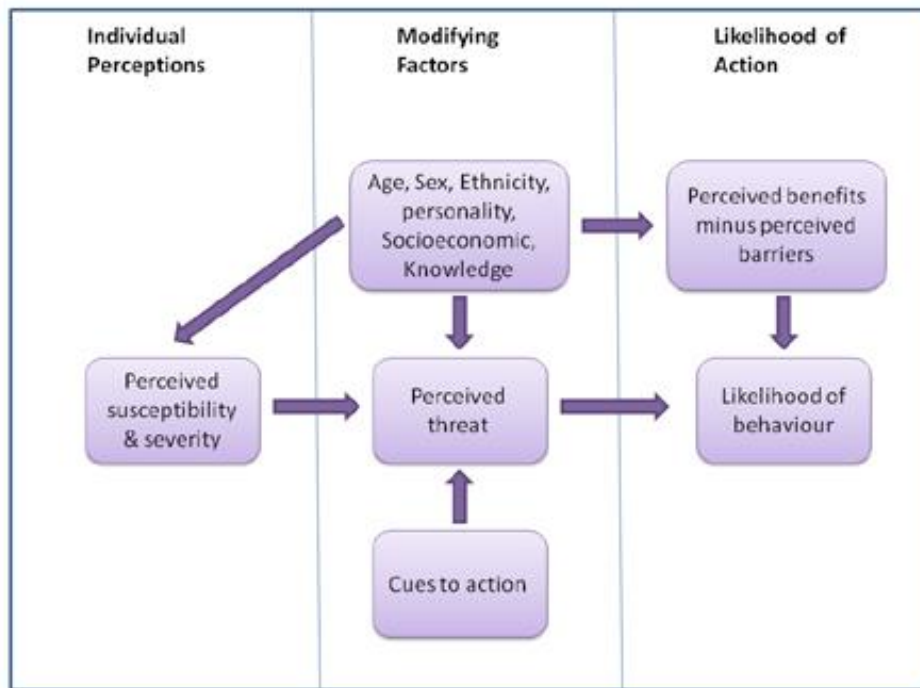


Figure 5.6: Health Belief Model (Glanz et al., 2008)

5.6 The Theory of Planned Behaviour

The theory of planned behaviour (TPB) evolved from the theory of reasoned action (TRA). Both theories are concerned with individual motivating factors that determine the likelihood of an individual to perform and engage in a specific behaviour (Glanz et al., 2008).

The TPB assumes that the most important predictor of behaviour is intent.

Furthermore, intention is said to be a function of attitude towards the behaviour and the social norms associated with such behaviour.

Specifically, the TPB asserts that people's control over behaviour is reflected in four constructs or dimensions, including attitudes towards a particular behaviour; intention or motivation to influence particular behaviour; subjective norms in terms of approval or disapproval of a particular behaviour; and the perceived behavioural control in

terms of ease or difficulty of performing a particular chosen behaviour (Glanz et al., 2008, School of Public Health, 2015).

This theory is important in this research because it focuses on the process that individuals use to either engage or not in HRBs. According to this model, people's attitudes are shaped by individual beliefs of whether or not the behaviour change adopted would result into positive outcomes. To this end, the TPB indicates that where positive beliefs are held, positive attitudes would result and hence increase the intention of adopting the change. The reverse is also assumed to be true. Similarly, people's subjective norms are shaped by expectations of their peers or society in which they live and therefore if behaviour change is expected and approved of by peers, there will be a higher likelihood of adopting the health behaviour. The reverse is also assumed to be true (Glanz et al., 2008).

It is important to note that whereas this theory has been applauded for informing better understandings of behavioural change, the fact that it assumes that behaviour change is only predicted by intention makes its applicability somehow limited. The model ignores the key elements of behaviour change, including threat, fear, and self-efficacy (World Bank, 2010).

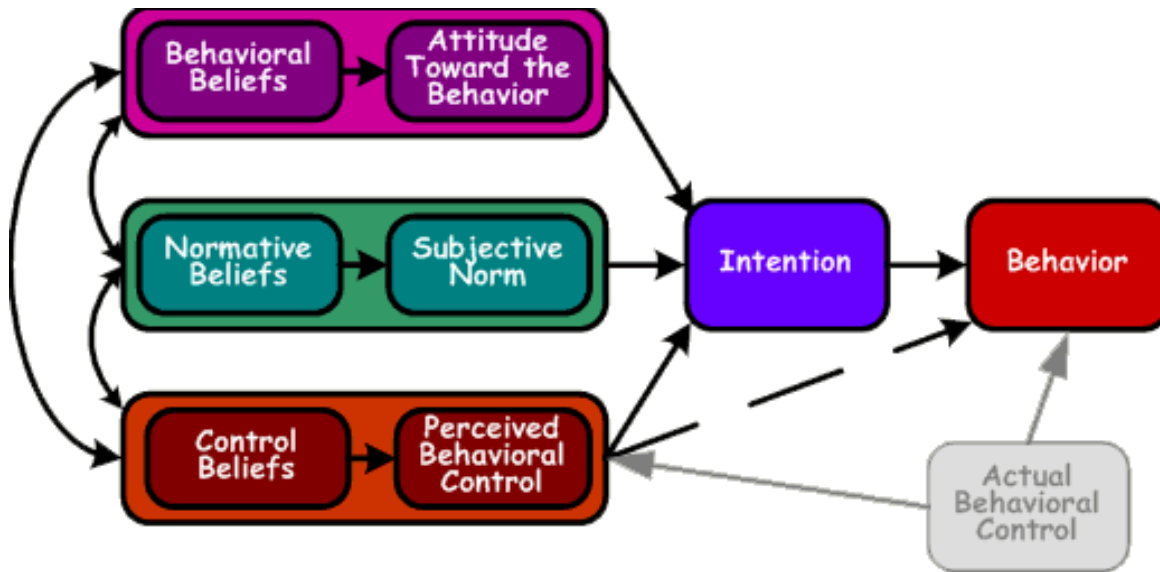


Figure 5.7: Planned Behaviour Theory (Ajzen, 1991)

5.7 Developmental Cognitive Neuroscience framework (DCNF)

The Developmental Cognitive Neuroscience framework is related to the theory of planned behaviour. This is because they both depend on the cognition of individuals. The major difference between the two is that the DCNF captures the greater biological perspectives to behaviour (Green and Myerson, 2004). According to this framework, the level of risk behaviour is determined by the level of the brain development which is also influenced by one's biology and experience. This framework asserts that the biological and neurological development of persons greatly predicts their risk taking behaviour (Richards et al., 2015). For instance, whereas adolescents tend to have heightened sensitivity to social context and are more susceptible to more risky behaviour in the presence of their peers, such sensitivity varies, mainly due to differences in their neurological and biological developments (Richards et al., 2015). In other words, according this framework, given the same environment and experiences,

people are bound to act differently based on the level of insulation or buffer provided by their brain development. This is because the level of brain maturing or developing dictates how coding and responses to the social environment occurs.

Casey et al. (2008) reinforce the above assertion by indicating that there are imminent differences in the brain development of individuals and different groups. For example, young people are often attracted to rewards more than children and the older generation. Similarly, in their study on adolescent neurobiological susceptibility to social context, Richards et al. argue that because of the differences in brain development and biology, some adolescents are more prone to risk taking behaviour than others (Richards et al., 2015).

This framework is important in the study of HRBs, especially with young people, given that it integrates genetics with external environmental influences of behaviour. This is key to understanding behaviour given that some people find it hard to control risk behaviour compared to others. The implication is that there is a complex relationship in genetic make-up, brain development and the external environment in determining behaviour.

It is important to highlight here that whereas this framework attributes more importance to brain development in shaping behaviour, it is also appreciative of the immense impact of the external environment (Richards et al. (2015). This is what distinguishes this theory from the rest that rely on either external or internal factors. One such theory, which relies heavily on external factors, is the problem behaviour theory, discussed in the next section.

5.8 Problem Behaviour Theory

Problem behaviour theory (Figure 5.8) is used to explain various dysfunctional behaviours, especially among young persons, such as drug and alcohol abuse (Gullotta et al., 2005, Donovan and Costa, 1994, Ketterlinus and Lamb, 1994). The theory is founded on the assumption that dysfunctional behaviour is a function of personality interacting with the environment in which they live. Specifically, problem behaviour or conventional behaviour could result if one lived in what Jessor terms as proximal or distal environments, together with a positive or negative personality. Jessor indicates that problem behaviour is very much associated with proximal environment and negative personality, while conventional behaviour is associated with distal environment and positive personality. Proximal environments entail negative peer forces and a lack of good role models, while distal environments entail positive support from peers, parents and the community. On the other hand, positive personality is associated with positive attitudes, values and expectations shaped by institutions such the church, school among others. According to this theory, proneness to HRBs is dependent on the ability of one balancing between risk factors (instigators) and the risk protection factors (control variables). To this end, where instigators are more powerful than the controls, the person will be prone to problem behaviour. Moreover, engaging in one problem behaviour is said to trigger further engagement in other problem behaviours (Frances, 2010).

This theory has been developed steadily over the years and it also identifies work, family and friends as the main parties which influence behaviour among teenagers and

young adults (Gullotta et al., 2005). Family, friends and personal characteristics are some of the elements identified in the model for the current research.

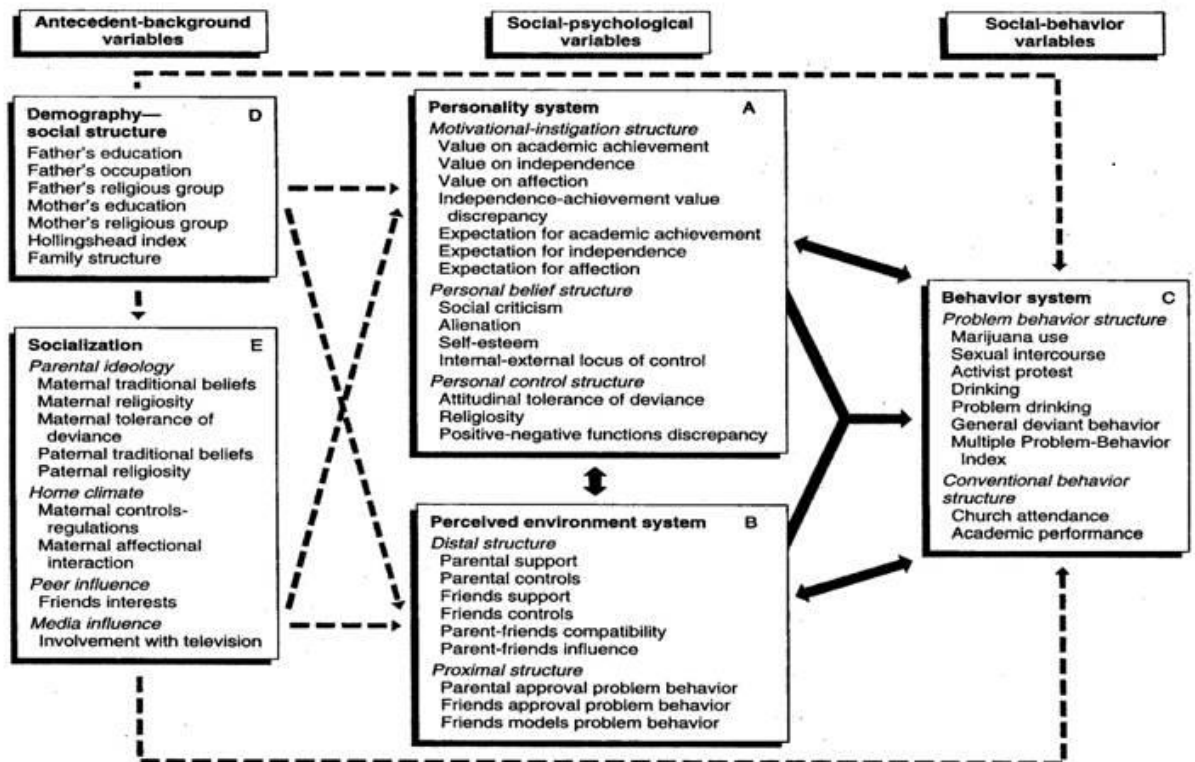


Figure 5.8: Problem Behaviour Theory(Jessor and Jessor, 1977)

5.9 Behaviour Decision Making Theory

Behaviour decision-making theory, developed by Reyna and Rivers (2008), explains the relationship between risk taking and decision-making. The theory is linked to the models of risk and protective factors, behaviours and risk which are credited to Jessor (1992b), Hawkins et al. (1999a), Sutherland et al. (2006), and Armstrong et al. (2005). According to Fischhoff (2008), young people generally consider themselves invulnerable, which means that they actually perceive activities and objects that could cause harm to them as being harmless or that young people may overestimate or underestimate the risks that they face, which is highly related to the concept of

individuality and personality (Jessor, 1992b, Hawkins et al., 1999b, Armstrong et al., 2005).

According to behavioural-decision-making theory, young people are generally governed by subjective probabilities. This means that they can view risks differently in relation to their consequences. Some may view a risk as being too high and others may view it as being low. But sometimes, decisions override risk perceptions such that even when aware of the detrimental health risks associated with a behaviour, it is more likely that some young people would disregard it while taking decisions (Frederickson and Levin, 2007).

This theory has implications for the Saudi Arabian context because it is likely that the students at the university level engage in risk behaviours that are detrimental to their health with probable disregard of the immediate or long-term health risks outcomes associated with such behaviours. On the other hand, some students may avoid health risks by overrating the negative consequences linked to them. What this means is that some individuals are extremely afraid of risk taking because they perceive the consequences of HRBs to be greater than they actually are (Frederickson and Levin, 2007). Conversely, some groups of youths may underestimate the consequences of risk taking and thus become involved in risky behaviours.

All the above discussed theories cover the interactions between individuals and their environments from different perspectives. Although they might differ in their specifics, most of them are interactionist in nature, as they highlight interactions between individuals and their contexts and the outcomes of these interactions. Below is the

developed model, informed by the above theories and models. The explanations of the individual components and a discussion of their interconnectedness are also given after the model.

5.10 The Developed Model

The model developed for this research (Figure 5.9) draws on aspects of the models described above. It has three major components: the first outlines interactions between the 'individual, university, peers, family and the community'; the second has the 'health risk behaviour'; and the third has the 'potential outcomes of the health risk behaviours'. The first component of the model deals with the interactions between the four domains discussed earlier but alterations such as the positioning of the individual, university, peers, family and the community in the model were made to take account of the research setting. At the centre of the first component of the model is the 'individual student', which is the first domain. The student is placed centrally in this case because, as stated by Jessor (1992a), individuals are influenced by their surroundings/contexts. Jessor noted that individuals have intra-personal characteristics which interact with the contexts they find themselves in. This means that individual differences may partially account for the different interactions that people have with their social and environmental contexts. This is captured under the problem behaviour theory by (Jessor, 1992a), Figure 5.9, because it outlines individual characteristics as determinants of interactions with the environment/context. Similarly, the theory of planned behaviour by Ajzen (1991), Figure 5.7, outlines individuals and their subjective reasoning as determinants of interactions with other systems around them, these in turn affect behaviour. This is also the case for the social

development model by Hawkins and Weis (1980), Figure 5.4, which examines the nurturing of individual characteristics as a determinant of behaviour. Additionally, the health belief model by social psychologists Hochbaum et al in the 1950s (Glanz et al., 2008). Figure 5.6 outlines personality as a modifying factor in behaviour determination.

Jessor (1992a) also noted that intra-personal differences justify the placement of individuals as central stakeholders in the interactionist theories. Each person is different in his or her own way and those differences may affect how each of them is affected by context. The ecological systems theory by Bronfenbrenner (2005), Figure 5.5), also places the individual at the centre because he/she is influenced by the microsystem, the mesosystem, the exosystem and the macrosystem.

The second domain that is placed immediately outside the 'individual student' is the 'college/university' domain. This domain is related to the model by Bronfenbrenner (2005), Figure 5.5, which places the school within the microsystem. As stated earlier, this part is closest to the individual and is highly influential in determining behaviour. Although the Search Institute (1997) focused on the early educational settings, similar concepts can be applicable to any selected educational setting. Overt antisocial behaviour within the university context, including violent behaviour, engaging in criminal activities and substance abuse within the university setting, can affect health (Search Institute, 1997). These activities affect health because drugs disturb optimal mental functioning, encourage criminal activities and violent behaviour, making people take part in actions that could lead to physical harm.

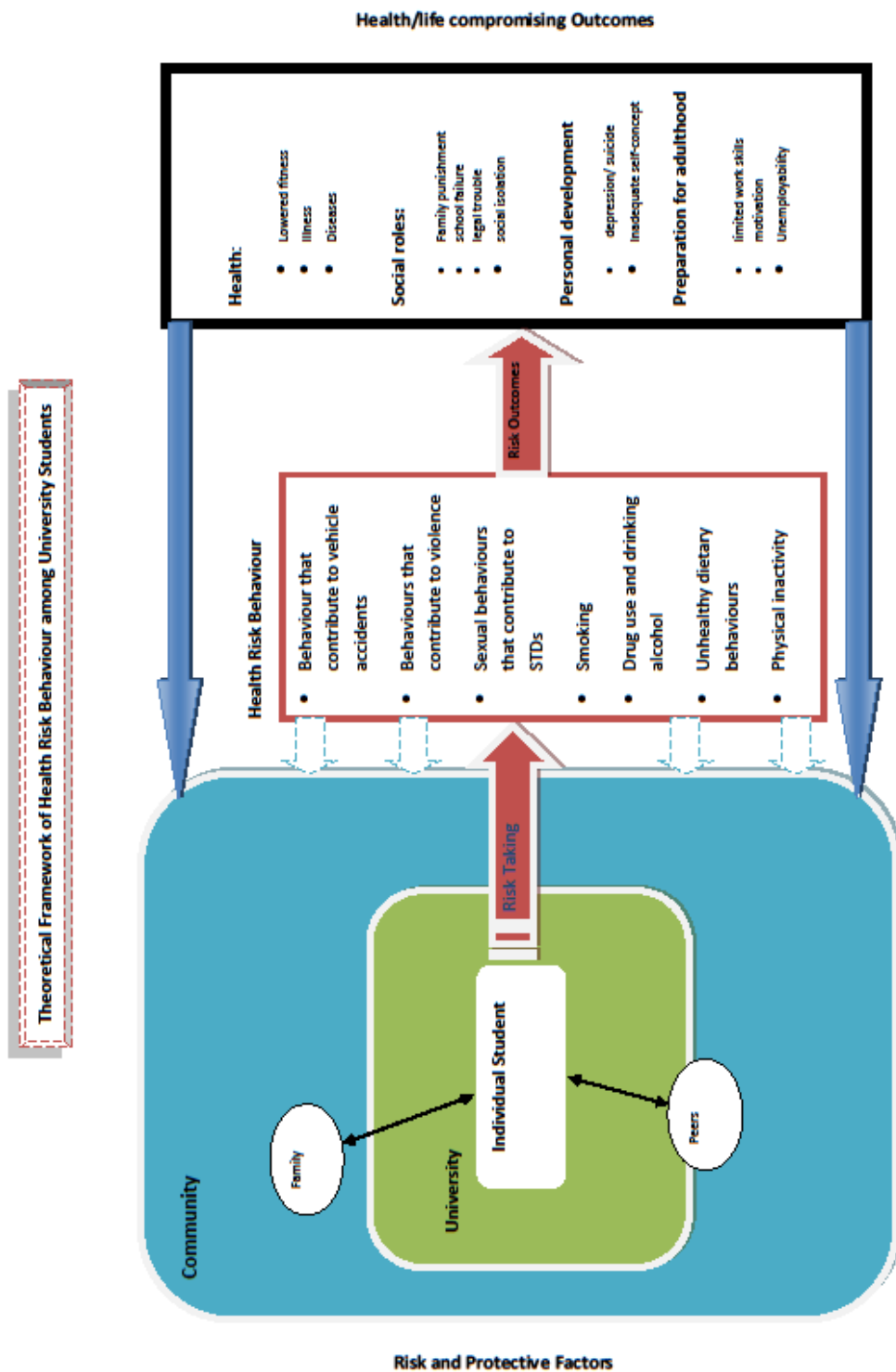


Figure 5.9: Developed Model of Health Risk Behaviour among University Students

The college/university may increase the chances of engaging in risk behaviours by providing an environment in which peers influence one another to take part in activities, such as drug taking, unprotected sex and criminal behaviour (Search Institute, 1997).

The third domain in the model is 'peers', which interlocks with both the 'university' and the 'community' domains. This interconnection is based on the fact that the university forms the main environment where university students make friends who may influence them in positive or negative ways (Jessor, 1992a). In some cases, friends who meet in the university also meet during holidays at the community level. This is related to several models outlined earlier including the ecological systems theory by Bronfenbrenner (2005), Figure 5.5, which singles out peers as being influential at the microsystem; the social development model by Hawkins and Weis (1980), Figure 5.4, which outlined peers as being integral to bonding; and the problem behaviour theory (Jessor, 1992a), Figure 5.8, which outlined peers as being important in the process of socialisation.

The fourth domain is the 'community' and, as noted above, students spend part of their time at home. Those who commute from home may spend most evenings and nights at home, while those who live in campuses may go home during holidays. At the community level, students have the company of their peers; they may also get access to weapons, drugs and other materials that support engagement in HRBs. Students get the chance to interact with their peers during holidays. For example, they may get together at the community level when they are on holiday. Their interactions may pave way for them to share drugs, smoke, and alcohol and engage in other HRBs. The

community thus potentially opens up chances for students to get drugs and guns that support violent behaviour and criminal activities (Search Institute, 1997). In Saudi Arabia, drugs and weapons are sold on the black market within the community and students may then choose to purchase them. Some community norms and laws are also said to favour drug abuse and access to guns, among other social ills, but they also play positive roles, as explained later in this paragraph. Laxity in the laws and norms in the society pave the way for students to engage in HRBs (Abbas et al., 2011). Other characteristics of the community that support risk behaviours include high levels of disorganisation and low social economic status (Search Institute, 1997). In some cases, communities offer support for positive behaviour, as highlighted by Siisiainen (2003), as they have high levels of social capital bonding. Yet the community may also offer optimal sociability, social connectedness, social networks, reciprocity and trust that shape well-behaved individuals (Siisiainen, 2003). There are therefore differences in the way communities are structured and the way they support socialisation. Some communities therefore have a positive impact while others may have negative ones.

Communities are tiered because they exist at the local, regional and international level. The broader levels of the community affect the lower levels and these in turn affect families, universities, peers and individuals. This research will concentrate on the influences of communities on students to engage in HRBs that are regarded as negative. On the other hand, communities have diverse positive influences on students. Communities are hosts to initiatives that support university students and other youths (Seifer and Vaughn, 2004). Communities are hosts to institutional structures, such as mosques and mentors and are governed by rules and regulations

that lead to positive health behaviour (Seifer and Vaughn, 2004). In some cases, communities partner with campuses to support behaviour that does not pose risks that compromise health (Seifer and Vaughn, 2004). This research is based in the Saudi Arabian context. The influences of communities on individuals are covered by different models that have been discussed earlier including: the risk and protection model by Armstrong et al. (2005), Fig. 4.3; the social development model (Hawkins and Weis, 1980), Fig.4.4; and the ecological systems model by Bronfenbrenner (2005), Figure 5.5.

The last domain is 'family' and in the model, the family forms part of the larger community. It is placed at the community level because the proposed study will focus on students who spend extensive periods at the university and potentially their families may have less influence on them. Jessor (1992a) noted that 'cohesive families' reduce the chances of engaging in HRBs. The Search Institute (1997) also built on this by stating that the levels of bonding in families, their belief system and behaviour standards affect predisposition to HRBs. The lower the bonding levels and the weaker the belief systems and standards, the more likely students are to engage in HRBs. The domains discussed above are clearly related to one another at different levels, as explained. Bonding in families is also cited as important in models such as the social development model (Hawkins and Weis, 1980), Fig, 4.4, the problem behaviour theory by Jessor (1992a), Fig.4.8, and the theory of problem behaviour by Jessor and Jessor (1977), Figure 5.8.

The presented model shows some of the outcomes of HRBs that can compromise the health of an individual, such as lowered fitness, illness and diseases; outcomes on their social role that include family punishment, school failure, legal trouble and social

isolation which may lead to increased HRBs; consequences for their personal development that include depression/suicide and inadequate self-concept; and preparation for adulthood that include limited work skills, low motivation and lower chances of getting employed (Jessor, 1992a). The model illustrates that these risk outcomes have their bases in the first partition of the model, which has the individual, university, peers, family and the community. Although health outcomes are presented in the suggested model, exploring these is beyond the scope of this study and therefore they will not form part of the proposed research. Their inclusion in the model is for illustration purposes only.

This research has a clear focus on the discussed domains and their influences on HRBs. In fact, the focus is on the patterns of HRBs that are occasioned by the interactions between these different domains. The cause-effect relationship is limited within the two main partitions of the model. The first main partition contains the four domains, namely individual/peer, family, school, and community and their interactions, while the second partition has the HRBs.

5.11 The benefits of developing a University-Based Model

There are some benefits of adapting the models discussed earlier in the chapter to develop a model that is specific to university or higher education institution settings. The model highlights the most influential domains in the lives of university students. The theoretical perspectives such as those by Jessor (1992a), Hawkins and Weis (1980), and other scholars, discuss all the domains in a universal way, but the developed model narrows down its applicability to the university setting. The established patterns

of HRBs may be pertinent to other universities and this has implications for the model's generalisability and the validity of results.

Adapting the model to the university setting in Saudi Arabia also means that any recommendations that are made will be as specific as possible to the analysed context. This is because recommendations for changing behaviour in the university setting are likely to differ from one country to another, but also from those at the school, the family, and the community levels in some cases. This is why Seifer and Vaughn (2004) outlined the need for establishing partnerships between communities and universities to support change in behaviour. These partnerships support the establishment of behaviour standards that are matched to a greater extent (Seifer and Vaughn, 2004).

5.12 Conclusion

The theoretical framework presented here has highlighted several models and theories whose ideas form the basis of this research. The theories covered include: interactionist models; social development model; ecological systems model; the health belief model; theory of reasoned action/theory of planned behaviour; problem behaviour theory; and decision-making theory. The tenets of these theories form the basis for the development of a customised model that is more relevant to the selected context of the university. The developed model shows interactions at three partitioned levels. The first one outlines interactions between the 'individual, university, peers, family and the community'. The second one considers 'health risk behaviour' and the third partition looks to the 'outcomes of the health risk behaviour'. Within this study, their interactions are specific to the university context in Saudi Arabia where the study has taken place.

Chapter 6 : Methodology

6.1 Introduction

This chapter describes the methodology and structure of the research design and presents the development of the mixed method approach adopted in this study, along with a description of the procedures used to identify the research sample for both the quantitative and qualitative aspects of the research. In addition, the chapter examines and explains the use of questionnaires and interviews as data collection instruments and describes their development for this study. The chapter also elaborates how fruitful the feedback from the pilot study was and how this early data was used to alter the main research with regard to the procedures for collecting data and how the data were then analysed. The processes for the assurance of the reliability and validity of the research methods are described. Finally, ethical considerations of the research are discussed.

6.2 Research aims and questions

The researcher had considered a number of guiding questions before constructing the research design. The queries involved a consideration of:

- the aims of the research
- what the research sought to explore and the questions it sought to answer
- the target population and why Saudi Arabian higher education students were chosen
- the best methods to use
- when and how the data was collected
- how the data was analysed and interpreted

These questions were instigated mainly from the researcher's personal observations and experiences related to the focus of this thesis. They were later complemented and revised with supporting information from the review of relevant methodological literature.

From a personal professional perspective, this researcher has been teaching at a Saudi university for more than ten years where he has often witnessed incidents and the effects of several HRBs, including traffic accidents, smoking, drug consumption, and violent attitudes, all of which are conducted by the students. These behaviours of Saudi youths are also observable beyond academic settings and in the greater part of Saudi society; thus, these observations provided the impetus to initiate this research.

As a result of the review of the literature, the queries instigated by the observations mentioned above were modified and extended to cover issues related to HRBs of young people globally. The researcher discovered that whilst incidences of HRBs among Saudi youths have significant antecedents, the nature and the consequences of these HRBs have not been comprehensively explored. By acknowledging this limitation of the research studies and findings, three research aims were set for this thesis (see Section 1.5 for the brief discussion on the purpose of this study). The aims were to:

- Identify the main health risk behaviours among student participants
- Understand the reasons for Saudi youths engaging in health risk behaviours
- Provide recommendations to deal with health risk behaviours appropriately and effectively.

To address these aims, five research questions were set to examine the level and nature of HRBs among the students of a Saudi university. The overarching research

question of this thesis is 'What are the patterns of health risk behaviours among the students of University X?' which is explored through the following research questions:

- i) What is the present state of HRBs among the students at University X in Saudi Arabia?
- ii) Why are some students at University X engaging in some HRBs more than other students?
- iii) Why are some students at University X engaging in some HRBs more than other HRBs?
- iv) What are the influences of University X that affect students' HRBs?

6.3 Research approaches

This study followed the research design plan shown in Figure 6.1 and utilised both quantitative and qualitative approaches (Creswell and Clark, 2007). The design was planned to accommodate research approaches and theoretical perspectives to ensure the research questions could be answered using appropriate research processes, analysis of the data and its interpretation to formulate reliable and valid findings and conclusions. The process map below (Figure 6.1 on the following page) illustrates the research design used for this study. Both the quantitative and qualitative approaches contained a pilot stage which helped refine the survey questionnaire and the interviews.

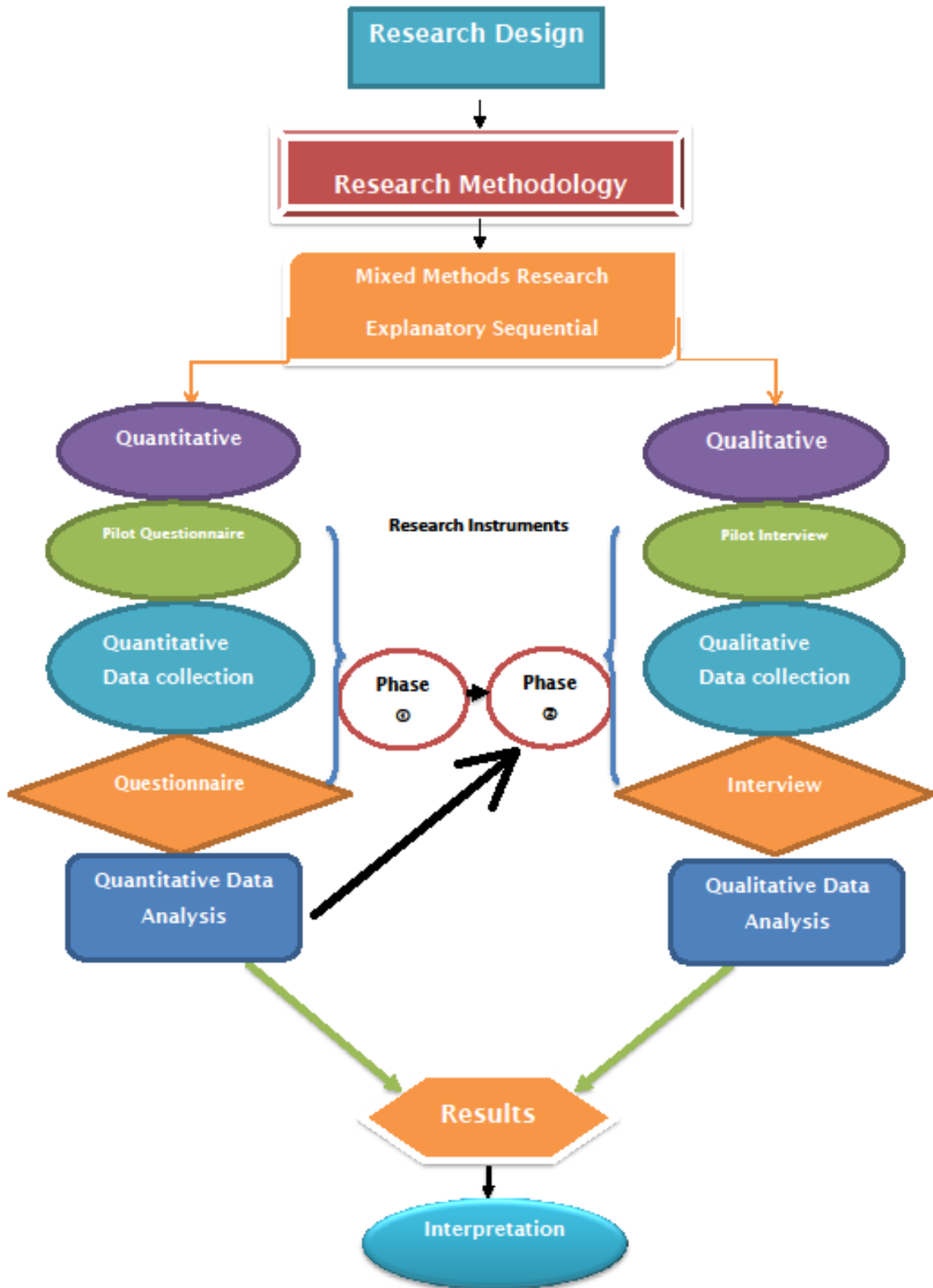


Figure 6.1: Research Design Plan

a) Research paradigm

A research paradigm is defined as a set of beliefs or assumptions that directs researchers in their manner for conducting a study (Jonker and Pennink, 2010). It is further defined as the basic attitude adopted and how researchers view the reality and interprets the phenomenon they observe (Jonker and Pennink, 2010). Therefore, to elaborate on this researcher's structure of inquiry and methodological choices, a discussion of the paradigms adopted for this study will be discussed.

Literature holds that there are two dominant paradigms in research (Jonker and Pennink, 2010, Saunders et al., 2011). The first paradigm is positivism, wherein the researcher believes that reality is objective and separate from him/herself (Jonker and Pennink, 2010). Through the positivist approach, measuring and predicting techniques can be undertaken, so the quantitative research methods seem to be feasible in this first paradigm (Jonker and Pennink, 2010). On the other hand, the interpretive paradigm considers that there are many equally valid perceptions and interpretations of reality which are often related to and dependent on context and time (Jonker and Pennink, 2010, Saunders et al., 2011). Thus this second paradigm prefers a researcher to collect data that is descriptive, explanatory and contextual (Jonker and Pennink, 2010).

Saunders et al. (2011) further elaborate that the philosophical dimensions that differentiate the research paradigms are ontology and epistemology. Ontology is concerned with the nature of reality, while epistemology concerns acceptable knowledge in a certain field of study; therefore the most important determinant of the paradigm a researcher selects is the nature of the research questions (Saunders et al.,

2011). With these explanations in mind, the present researcher asserts that this study can be best undertaken by collecting data using a variety of triangulated methods, thus a pragmatic approach will be adopted in which neither a totally positivist or interpretivist approach will predominate.

b) Pragmatism

Pragmatism provides the underlying philosophical framework for the mixed method research adopted in the current study (Tashakkori and Teddlie, 2003). Using a pragmatic approach, which combines both quantitative and qualitative methods, can be beneficial for social science research as:

... there is a growing recognition of the need to move beyond the use of mono-method research in both the social sciences and those disciplines where social science research methods have been applied (Debats et al., 1995,p 19).

Using the pragmatic framework, the researcher focused on solving and getting to the root of the problem, rather than being paralysed with thinking about which methods are the most appropriate (Tashakkori and Teddlie, 2003). In line with this, the present researcher adhered to the pragmatic framework by using a mixed method or multi-strategy approach to investigate the research questions presented earlier. Pragmatism also supports the mix of modes of analysis (Tashakkori and Teddlie, 2003, Feilzer, 2010).

6.3.1 Quantitative and qualitative investigation

There are two fundamental types of research data; quantitative and qualitative, which may be both utilised in the same study (Creswell and Clark, 2007). Oppenheim (2000)

claimed that the world can be measured by numbers and that numbers can accurately disclose the truth about it (Oppenheim, 2000). Aliaga and Gunderson (2003) defined quantitative research as 'explaining the phenomena by collecting numerical data that are analysed using mathematical based approaches in particular statistics' (Aliaga and Gunderson, 2003, p 34). Cottrell and McKenzie (2010, p 3) suggested that quantitative research is also used to 'answer questions about relationships among measurable variables' (Cottrell and McKenzie 2010, p 3). In contrast, in order to understand the world, qualitative researchers such as Woods et al. believe that one should focus on the context to '...discover the meanings that participants attach to their behaviour, how they interpret situations, and what their perspectives are on particular issues' (Woods et al., 1999, p 18).

In short, research is designed to answer questions about the complexity of the nature of phenomena with the purpose of explaining and understanding them (Cottrell and McKenzie, 2010). The nature of the phenomenon investigated in this study was HRBs among university students and could be conducted using either quantitative or qualitative research approaches, or both. Both quantitative and qualitative research methods have their individual strengths, but this research was aimed at not only asking 'what' but also 'why' risk behaviours are adopted. As the researcher was interested in investigating risk-taking and the importance of promoting health among young people, and what might help to improve healthy behaviours, which are all complex issues, a mixed method approach was selected as the most appropriate in order to gain the fullest possible insight into the focus of the research (Tashakkori and Teddlie, 2003, Creswell and Clark, 2007).

Many authors in social science and education research, including Tashakkori and Teddlie (2010) and Creswell and Clark (2007), recommend the mixed method approach to gain comprehensive answers to the research questions (Gorard and Taylor, 2004). This researcher has taken the position that neither quantitative nor qualitative approaches on their own can give a complete picture to be able to answer the research questions of the study.

The choice of research methods is a technical decision which depends on the needs and aims of the investigation. Different methods are appropriate to different kinds of research questions, and the task of the researcher is to find an appropriate methodology to fit with the questions to which they are seeking answers. Deciding the appropriateness of the method also includes consideration of the analysis of the data or information that will be arrived at through the research tools (Cohen et al., 2007a). Survey questionnaires can be used to help researchers understand attitudes and the meaning that respondents attach to the phenomenon of interest (Cohen et al., 2007a). However, to further gain an in-depth understanding on any particular issue, interviews can be helpful, and this can be conducted before or after implementing any survey. For these reasons, in this study, a number of structured interviews were conducted with a subsample of 17 students after administering a 52 item questionnaire to 722 respondents at the same university.

6.3.2 Mixed method approach

A mixed method approach of research is the combination of quantitative and qualitative data in a research project (Creswell and Clark, 2011). Mixed methods are

increasingly popular because of the depth and breadth of data gathered in using elements of both positivist and interpretivist approaches (Tashakkori and Teddlie, 2003). The strength of a mixed method approach lies in involving the intentional collection of both types of data and using the combination of the strengths of each to answer the research questions (Creswell and Clark, 2011).

Although there is a wide agreement about what constitutes a mixed method approach to research, Johnson et al. defined mixed methods as:

... the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Johnson et al., 2007, p 122).

The advantages and disadvantages of the mixed method research design have been widely discussed (Tashakkori and Teddlie, 1998, Gorard and Taylor, 2004, Ivankova et al., 2006) and these discussions are outlined below:

a) Strengths of mixed method

The major strength of a mixed method approach is its capacity to explore both the qualitative and quantitative results in more detail. Mixed data collection strategies can combine two or more methods, such as structured survey interviews with elements of other methods, such as observation and focus groups (Axinn and Pearce, 2006).

According to Axinn and Pearce (2006,p. 45), using more than one method can:

- provide different data that is not identified by using a single data collecting instrument;

- reduce non-sampling errors by providing plenty of information from a variety of sources;
- ensure that potential bias coming from a particular approach is not replicated in alternative methods.

Similarly, the approach can be particularly useful; for example, when unexpected results arise from a quantitative study, further investigation can be undertaken in the qualitative phase.

Mixed method strategies can afford special opportunities to employ various sources of knowledge from multiple approaches to gain new insights into the social world (Kertzer and Fricke, 1997). Therefore, employing mixed methods in this study can deliver several benefits. It can provide data that may not be gained by a single approach, and it can reduce non-sampling error by providing plentiful information from multiple sources (Axinn and Pearce, 2006). Also, using multiple methods may ensure that potential bias coming from a single instrument is not replicated in alternative approaches. It also allows the researcher to '...simultaneously generalize results from a sample to a population and to gain a deeper understanding of the phenomenon of interest' (Hanson et al., 2005, p 224). Furthermore, mixed method approaches allow the researcher to examine theoretical models and to update them based on respondents' assessments (Greene and Caracelli, 1997). One of the key reasons advanced for this is that research claims are stronger when based on a variety of research methods (Feuer et al., 2002). In addition, combining methods can enhance the flexibility of the research design (Gilbert et al., 2006). Finally, using multiple

approaches can offer both the opportunity to meet the demands for the generalisation of results (based on the use of probability samples) and strengthen the credibility of using qualitative methods of data collection and their customisation in context (Hanson et al., 2005).

b) Weaknesses of mixed method

Apart from the advantages, there are some limitations associated with the mixed method research design, such as it being time consuming (Reams and Twale, 2008), more complex, and the feasibility of resources to collect and analyse both types of data may be compromised (Ivankova et al., 2006). Moreover, using either quantitative or qualitative approach may not be sufficiently focused and utilised (Cojocar, 2010). Thus, the difficulty of methodological rigour fulfillment can be seen as an obvious drawback of this research methodology (Cojocar, 2010). The priority or weight given to the quantitative and qualitative data collection and analysis in the study, and the sequence of the data collection and analysis, are potentially disadvantageous in using a combination of different methods for data collection (Gorard and Taylor, 2004). However, decisions on the paradigm approaches, research design, data collection, piloting, tools for data analysis, validity and reliability checks, and ethical considerations are discussed below.

6.4 Decisions on paradigm and methods

Based on the features of different research paradigms and mixed method approach the researcher took the following decisions for his investigation.

Firstly, due to the nature of the study, the researcher considered that both positivist and interpretivist paradigms would be needed to satisfy the required methodological facets and also to explore contextual circumstances both objectively and through interpretations. Therefore he found it important to combine both the paradigms. As the research on HRBs in a Saudi university context was predicted to involve various personal and social aspects, the researcher believed that a combination of the paradigms would provide the explanations of the HRB related situations in the Saudi Arabian higher education context more comprehensively.

On the other hand, for the following two major reasons, the researcher chose to employ a mixed method approach of research in this study.

Firstly, employing a pragmatic view and understanding the strength of mixed method research, the researcher felt that combining the qualitative and quantitative approaches would provide a richer and a more in-depth insight into the issue of HRBs rather than just using one method alone. Therefore, to be able to comprehensively explore the pattern of HRBs the researcher planned to gather and analyse data using both quantitative and qualitative methods. In order to seek explanations and predictions that can be generalised to other situations, a questionnaire-based survey was used, and the findings of it were complemented by a number of structured interviews.

Secondly, qualitative or quantitative methodologies are two dissimilar but adequate approaches for conducting any research, which means a researcher can apply either of them to gain sufficient and valid research outcomes. However, for confirming any

research findings, a comprehensive discussion in both qualitative and quantitative manner should occur, and triangulating their findings seem more acceptable to the wider research community. Therefore, despite several limitations, a mixed method approach was employed in this study.

6.5 Research design

The researcher employed a 'mixed-methods sequential explanatory design' (Creswell and Clark, 2007), which included two distinct phases, namely the quantitative study followed by a qualitative one (see Figure 6.1). In the process the qualitative data and their analysis were used to elaborate and explain the statistical results by exploring participants' views in more depth (Tashakkori and Teddlie, 2003, Creswell, 2003b). By using a questionnaire, the researcher first collected quantitative data and then analysed it. The analysis of the quantitative data provided a general understanding of the research phenomenon, which informed the second phase of data collection in an iterative process by providing a clear focus of particular topics and areas to be explored during the interviews; therefore helping to refine the interview schedule. The qualitative data was collected through a series of structured interviews and then analysed in a sequence, as it explained and elaborated the quantitative results obtained in the first stage. The qualitative data was built on the quantitative data, and the two phases were connected in the data analysis stage in the study (see Figure 6.1).

6.5.1 Research samples

As the study was an attempt to explore the existing HRBs among the male and female students of a Saudi university and the reasons why they engage in such behaviours, the

study population of this research was university students. The study sample needed to be identified carefully to ensure that the data collected was capable of supporting sophisticated analysis (Central Computer & Telecommunications Agency, 2000).

The total population of students studying bachelor degree level courses at University X in Saudi Arabia was 39,326 in the academic year 2011/2012 (Ministry of Higher Education, 2012). The researcher has ten years' experience as a lecturer at University X and using this personal knowledge and experience, the following features of the students were predicted when establishing and identifying the study population:

- students at this level are independent from their families, giving them greater freedom, and therefore there is a high probability that they may engage in HRBs more than at previous stages of their lives;
- they are greatly influenced by their peers;
- because of the nature of the educational system and the conservative structure of Saudi society, they have limited time and chances to socialise before commencing their programmes university;
- they are less controlled by their families and therefore have more freedom to behave in new ways ;
- they enjoy more flexibility regarding maintaining class time table and personal study time.

The researcher limited his study to University X as he is adequately aware of the cultural sensitivity required in the selected institution. This has enabled him to

understand the processes required to establish an open communication with male students, and with the female section via female colleagues. Furthermore, as this is a doctoral study and therefore smaller in scale than a national government survey, the study aimed to produce highly accurate and rich data, rather than create a large database that has the risk to incorporate an excess of irrelevant variables.

6.5.2 Sampling techniques

According to Cohen and Holliday (1979), there are two principal methods of sampling: probability and non-probability sampling. Probability sampling is also known as a random sampling technique, whereas, non-probability sampling is recognised as a purposive sampling method (Cohen et al., 2007b). Probability sampling gives the same chance for every member of the whole population to be included in the sample (Levy and Lemeshow, 2011). Many authors categorise probability samples as simple random, stratified, cluster and systematic sampling (Cohen and Holliday, 1979, Anderson et al., 2008, Engel and Schutt, 2009, Levy and Lemeshow, 2011). A number of benefits regarding the use of cluster sampling have been found, which include the option for selecting samples randomly without any single list of population and by avoiding 'introduction of confounding by isolating members' (Black, 1999,p 118). Additionally, this sampling technique has been considered as the most appropriate for this study because of its convenience in administering the data collection tools among a large number of the population and the widely distributed locations. Cluster sampling is a 'sampling technique where the entire population is divided into groups, or clusters, and a random sample of these clusters are selected' (University of Glasgow, 1997). This technique is classified as a probability sampling technique and it is usually used when it

is impossible or impracticable to compile an exhaustive list of the whole population, such as university students in one city (Babbie, 2012). The total population in University X of 39,326 students is spread across seventeen colleges and schools; therefore it was difficult to use other sampling techniques. Anderson et al. asserted that using this method by choosing small numbers would provide valuable estimates for the population parameters (Anderson et al., 2008). This sampling technique might also be more practical and economical than simple random sampling or stratified sampling (Easton and McColl, 2007).

6.5.3 Quantitative (questionnaire) sample

To obtain a broad view of the research topic and for pursuing a reliable investigation, it was crucial to involve a representative sample size in the study, ensuring that the sample was taken from a range of different disciplines of the university. The total population for this study was, as mentioned, the 39,326 students who were studying for a Bachelor degree at University X in Saudi Arabia. To determine the sample size, the researcher required a 95% confidence level, so the level of precision is 0.05. The following equation was used to calculate the representative sample as it has been identified in a number of research sources (Israel, 1992, Cohen et al., 2007a), adding to the calculation the required representative sample for this study of 396 students.

$$n = \frac{N}{1+N*(e)^2} = \frac{39326}{1+39326*(.05)^2} \approx 396, N= \text{Population}; n= \text{Sample size}; e = \text{Level of precision}$$

precision

The confidence interval (margin of error) is defined as the ‘...range around a measurement that conveys how precise the measurement is’ (Smithson, 2003, p1). For

instance, if a confidence interval of 4% and 47 % of the sample selects an answer, it is possible to be 'sure' that if the question had been asked of the entire relevant population, between 43% (47-4) and 51% (47+4) would have picked that answer (Muijs, 2010). Nevertheless, it was expected that not all questionnaires would be answered by the participants; the researcher distributed additional questionnaires so the total number of questionnaires was 872 to be sure to get the representative sample. Eventually, 739 questionnaires were collected from the participants; approximately double of the representative sample size of 396, consequently increasing the confidence level of the collected data.

6.5.4 Qualitative (interview) sample

As mentioned earlier, the study is concerned with investigating HRBs among University X students and the importance of identifying the most predominant health risk behaviours. The sample was restricted because the time for collecting data in such a PhD project is limited and the most important reason for collecting qualitative data is to improve the understanding of the complex human issues, more than seeking for generalisability of the results (Marshall, 1996).

The survey data, which was quantitative in nature, needed to be cross-checked with the interviewees having similar features (Tashakkori and Teddlie, 2008). Therefore, seventeen interviewees, from the same seven schools that the questionnaires were collected from, were chosen for an interview. The researcher invited the students to participate by displaying notices with the purpose of the interview and contact details on all the boards in the classrooms of all the university students studying the

compulsory modules. Although 'there are no rules in sample size in qualitative inquiries' (Patton, 2001,p244), the researcher decided to interview seven females and seven males at least, in order to ensure the participation of both genders so that the issues could be explored from a male *and* female perspective, thus enhancing the richness of the data. Moreover, the interviewees came from all seven schools because it was believed that students studying at different schools might have dissimilar characteristics and points of view.

At least one male and one female student were invited from each school, and all the males were interviewed by the researcher himself, whereas the females were interviewed by a female assistant due to cultural considerations. The interviews took approximately 40 minutes each and the following four main questions were asked with 2/3 supplementary questions for each. In the interview, to gain useful information to answer all the research questions of this thesis (see Section 1.3 of Chapter 1) the following three questions were specifically asked.

- (i) Why are some students at University X engaging in some HRBs more than other students?
- (ii) Why are some students at University X engaging in some HRBs more than other behaviours?
- (iii) What are the influences of University X that affect students' HRBs?

The interviews are termed as structured interviews for a number of reasons. Firstly, the questions used in the interviews were created in advance by the researcher. Secondly, all of the questions were presented in each of the interviews without making any change, and by following the same order. Thirdly, during the interviews, the

interviewers played a neutral role and did not ask any supplementary or opinion-based questions.

6.6 Data collection methods

According to Sarantakos, the response rate in a study can be improved by conducting a well-planned study, determining appropriate measures and being cautious (Sarantakos, 2005). To comply with these requirements, the following plans and measures discussed in the next sections were taken for preparing and executing the questionnaire. However, initially the types of questionnaires and their advantages and disadvantages were reviewed.

6.6.1 Questionnaire

Questionnaires usually comprise of a group of questions aimed at gathering respondents' viewpoints (Plante and Canada, 2004). It seems that this method is preferable in many fields of social science, where surveys are usually conducted to gather information on many aspects of a phenomenon from a large sample of the community. However, just how crucial designing a sophisticated questionnaire is can be underestimated (Cohen et al., 2007b). Initially, anybody can write a couple of questions, but if they are of poor quality or not in good order, the outcomes may be meaningless and misleading. However,

...questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers (Dörnyei and Taguchi, 2010, p71).

6.6.1.1 Types of questionnaires

There are two types of questionnaire, namely self-administrated questionnaires and group-administrated questionnaires (Oppenheim, 2000). Oppenheim defined self-administrated questionnaire as:

...a questionnaire which is distributed to the respondents by an interviewer or someone in an official position such as a teacher or hospital receptionist (Oppenheim, 2000, p 73).

This kind of questionnaire, according to Oppenheim, has some advantages, such as a high response rate and accurate sampling, because the sample can be targeted and the required initiatives for collecting responses can be made promptly. Researchers may also employ someone who is not highly skilled to distribute this kind of data collection instrument. Callara and Callara pointed out that the group-administrated questionnaires are largely given to groups of respondents who congregate together, such as school students or invited audiences (Callara and Callara, 2008). This approach may raise issues of bias, but can also guarantee high return rates. The researchers also assisted the respondents by providing clear instructions to complete the questionnaire and maintain the set time for responding. To ensure that these requirements were met, this researcher took two precautions. Firstly, he tried to explain the meaning of the questions and the procedures to fill-out the questionnaire clearly. Secondly, he allocated a comparatively long time (45 minutes) for the students to complete the questionnaire, so that the 'slow to respond' type participants did not leave any significant part of the questionnaire untouched.

6.6.1.2 Advantages of questionnaire

In a questionnaire, all the questions can be directed at the phenomenon of concern (Windsor, 1984). For example, in this research, the questions were entirely focused on students' health risk behaviours. Brace (2008) stated that a questionnaire not only offers a wide coverage of geographic area and population at minimum cost and effort but also offers participants an opportunity to provide more considered and carefully thought out answers completed at their convenience. The investigator can send out thousands of them in the time it takes to do a few interviews. In addition, the financial and time costs of sending questionnaires are small when compared with other research techniques, such as interviews. Measuring HRBs in University X in Saudi Arabia involved a vast population (close to 39,326 students in 2011/2012). Using a questionnaire helped the researcher to reach a large sample of participants. The larger the sample size, the more representative the data will be (Cohen et al., 2007a). Furthermore, questionnaires can be less threatening than face-to-face interviews. In interviews, participants may not reveal their possible engagements in HRBs, whereas in the case of using questionnaires, they might be more honest in this anonymised situation.

In short, a questionnaire has many strong points. It is an effective method to measure attitude and it can derive other thoughts from the respondents. Both self-administrated and group-administrated questionnaires are inexpensive. Well-constructed questionnaires also have high reliability and validity compared with the interview method. Furthermore the questionnaire is easy to analyse, as specific

software can be used for the analysis process. However there are some disadvantages of using a questionnaire.

6.6.1.3 Disadvantages of questionnaire

An effective and efficient questionnaire requires much time to design and develop and is susceptible to several drawbacks (Windsor, 1984). For instance, although a variety of validating questions can be asked, questionnaires are limited in the use of descriptive cues (Windsor, 1984). In addition, questionnaires lack flexibility in terms of response format and may also be unsuitable for respondents who have special needs such as poor literacy, for the visually handicapped, the young (aged below ten years), and very old people.

According to Gillham, '...a fundamental problem is that questionnaires are often completed hastily and carelessly' (Gillham, 2000,p39). The level of confidence may vary regarding some of the answers given and also some questions may not be answered at all. Some people may think before they start filling out the questionnaire about their personal amount of time and effort that has to be spent on completing and returning it. It is also true that the questionnaire is subject to non-returns, a problem which can reduce the size of the sample. Gillham (2000) suggested to use motivation as a solution to overcome a low response rate. Researchers who use questionnaires should be aware about how this disadvantage might affect their study. Fortunately, this was not experienced in this study as the response was nearly double of that required.

Brace (2008) suggested that it is highly possible to misinterpret the questions, especially if they are unclear or ambiguous. Furthermore, one of the most frustrating aspects for a researcher is that the questions might be misunderstood. This sometimes happens due to a poorly designed questionnaire (Brace, 2008). In order to solve this matter, Gillham (2000) suggested that careful piloting can pick up ambiguous and misleading questions. Finally, open-ended questions in questionnaires are mainly appropriate for educated and professional communities (Brace, 2008). However, this type of questions may not always be applicable for less educated individuals because writing takes time and effort.

It can be concluded that a questionnaire has some weaknesses. Low response rates may occur especially for mailed or self-administered questionnaires. Data analysis for open-ended questions can consume the researcher's time. After evaluating the advantages and disadvantages of questionnaires, the researcher identified that his questionnaire should be designed in a short format and piloted before being sent to the research participants. Piloting informed and confirmed the types of questions to be used in the main study.

6.6.1.4 Types of data

Creating a questionnaire that every respondent will interpret in the same way and be able to accurately and willingly answer should be the aim of every researcher (Oppenheim, 2000). However, creating sophisticated questions is very challenging. Questionnaires utilise many kinds of questions, such as closed and open-ended questions, dichotomous questions, and multiple choice questions (Oppenheim, 2000, Cohen et al., 2007a).

Open-ended questions allow for greater freedom of expression (Oppenheim, 2000). For example, one such question in this research questionnaire could ask the students' likes or dislikes about particular teaching approaches to gain skills while they are studying a health education course. The students may have a choice to provide a detailed answer. In this way, the researcher will be able to gain an insight into the specific reasons for their likes and dislikes. These kinds of questions can help discover the phenomenon in-depth, but they are not easy to analyse (Oppenheim, 2000). It is not, however, always convenient for some respondents to answer open-ended questions because they are time-consuming and require more effort; a matter which prompted the researcher to not include any open-ended questions in his research questionnaire.

On the other hand, closed-questions can provide indicators which can be later followed up in interviews. According to Oppenheim (2000), closed questions give participants choices of preferred answers but without giving reasons, compared with open responses. For example, in this type of question, a student becomes able to state that he or she prefers the discussion approach or inquiry approach but without giving any reasons for their preference. In this thesis, the questionnaire was designed with several statements about the experiences of students with health risk behaviours which asked the participants to rate those on a scale according to their preferences and experiences. This approach allowed the respondents express their suitable preferences by picking from a readily defined choice instead of spending long time thinking about and writing out their answers. Additionally, the questions helped obtain

a restricted range of answers for analysing. Additionally, it was easy to analyse the responses by using statistics software such as SPSS.

6.6.1.5 Designing a questionnaire for this study

The aim of constructing the questionnaire is to encourage participants to respond accurately (Gillham, 2000). Gillham emphasised that point by saying:

...questionnaire is clear, unambiguous and uniformly workable its design minimizes potential errors from respondents and coders. And since people's participation in survey is voluntary, a questionnaire has to help in engaging their interest, encouraging their cooperation and eliciting answers as close as possible to the truth (Gillham, 2000, p. 106).

The questionnaire that can elicit accurate and worthwhile data needs to be prepared and planned very well before a single question is written (Frazer and Lawley, 2001) . All the answers for the different items can probably affect the accuracy and reliability of the data collected. From the research goals, it should be clear what data needs to be collected in detail. The logical starting point for designing a questionnaire is to ask what the main purposes are (Gillham, 2000). In other words, these contain what the research questions are. Since the main questions are addressed, the researcher might set up the main topic or areas (hours of work, job prospects, etc.) and then write down many specific questions (Gillham, 2000).

The questionnaire designed for this research was primarily based on the US-based 'National Youth Risk Behavior Questionnaire' and the 'National College Health Risk Behaviors Survey' or NCHRBS (Douglas et al., 1997). It was considered that the NCHRBS in its English version was the most appropriate instrument to measure the HRBs

among the students at University X because it was conducted by the Center for Disease Control and Prevention's 'Youth Risk Behavior Survey' (YRBS) in the United States in 1995, and has been used since then to measure HRBs of the college and university undergraduates (Douglas et al., 1997). Additionally, in terms of reliability, the survey questions have demonstrated good test-retest reliability (Brener et al., 2002). The researcher built his investigation on the results of the NCHRBS which prioritises HRBs among college students and health promotion programmes in college in six categories namely:

... behaviors that contribute to unintentional and intentional injuries, tobacco use, alcohol and other drug use, sexual behaviors, unhealthy dietary behaviors, and physical inactivity (Kann et al., 1996).

These identified behaviours have been found to be practiced by students in Saudi Arabia as well and can, in direct or indirect ways, endanger social and psychological wellbeing and physical health in the present or the long term.

The questionnaire designed for this research (see Appendix 5) measured the attitudes of the study sample regarding HRBs. As a tool for this study, it was designed with 11 aspects as identified in Table 6.1.

Table 6.1: Questionnaire items used in the study

No of Questions	Questionnaire items
Q1-Q8 and Q53	Demographics
Q9-Q14	Safety
Q15-Q16	Violence
Q17-Q18	Sad feelings

Q19-Q24	Smoking
Q25-Q31	Drug use and drinking alcohol
Q32-Q36	Body weight
Q37-Q41	Diet
Q42-Q46	Physical inactivity
Q47-Q50	Transmitted diseases
Q51-Q52	Risk taking

6.6.2 Interview

In this mixed method study, interviews were considered as being highly suitable to obtain rich, in-depth, and descriptive information from the participants (Cohen et al., 2007a). According to Mason (1997), interviews are suitable for diagnosing behaviours, experiences, opinions, feelings, beliefs, knowledge and background, to achieve an in-depth and rounded understanding of the area under investigation. In addition, an interview is a way of gathering data to examine variables of interest and of collecting opinions face-to-face from a number of subjects about specific points (Cohen et al., 2007a). Frankfort-Nachmias and Nachmias asserted that ‘...the interview is a face-to-face interpersonal role situation designed to elicit answers related to the research hypotheses’ (Frankfort-Nachmias and Nachmias, 1996, p 232). Cohen et al. (2007a) support the view that the interview technique enables interviewees to discuss their interpretations and perceptions of the world that they live in.

One significant benefit of employing interviews for data collection is that it allows a researcher to probe responses of the participants in a detailed manner (Hitchcock and

Hughes, 1995). In this study the structured interviews helped gain comprehensive information from the varied research participants in a consistent manner. By following this approach the researcher was able to adapt a number of fixed questions to suit different participants' situations, whilst retaining the general focus of the interview (Cohen et al., 2007a). Moreover, the development of rapport between the interviewers and the interviewees is less crucial with a structured interview and this was deemed more appropriate for both the interviewers and interviewees given the sensitive nature of the topic being discussed. Therefore a series of structured questions that were carefully prepared in advance and used without any change. Another important issue was that female participants were interviewed by a female lecturer and she was trained by this researcher for doing that. A structured interview approach was therefore regarded as more feasible to ensure that the interviews were standardized and would avoid discrepancies in the interview process. The reduction of risk was important for interviewee and interviewer with respect to divulging personal information because HRBs issues are very sensitive in Saudi Arabia and thus deep questioning and detailed discussion were thought to be problematic and may increase resistance from interviewees to answer the question at all. It is however important to acknowledge that, because of the fixed format of interview questions, in some cases, the interviewers and the interviewees were unable to open-up in the dialogue. For this reason, there is a possibility that some data are not as detailed or rich as they might have been using a more open-ended approach, particularly which are sensitive and require further clarification. However, despite this drawback structured interviews were thought to be the most useful way of collecting data form the interviewees.

Advantages and disadvantages of the interview method

In the social and psychological sciences, the interview method is seen as a sophisticated data collection technique for researchers because it is a common and powerful means to explore human interactions (Frankfort-Nachmias and Nachmias, 1996, Cohen et al., 2007a). Interviewing has many advantages. For instance, allowing for flexibility in the investigation process. The interview context is controlled by the researcher, which means that he or she can ensure that the participants answer the questions in an appropriate sequence, whereas in the case of mailed questionnaires, they may not (Frankfort-Nachmias and Nachmias, 1996). The interviewer can ask for extra detailed information or supportive examples. In addition, the interviewer can add longer, open-ended questions. In the interview particularly, because respondents are committed and more motivated, it is suggested that interviews may have a higher response rate than other methods (Cohen et al., 2007a).

The interview, however, also has disadvantages. The cost of interview studies is higher than that of survey questionnaires. Interviewer bias may occur and it is highly challenging for the researcher to cover every aspect with rational control (Frankfort-Nachmias and Nachmias, 1996, Cohen et al., 2007a). However, in this study, interviews have been chosen as one of the data collection tools as it offered an opportunity to gain extended data from the target participants. It is important to consider that this research tried to explore the human psychology and behavioural aspects of a group of university students and also to try to understand their associated social and cognitive roots. It was therefore expected that through interviews, these personal, social, psychological, cognitive and behavioural aspects would be properly realised.

6.6.2.1 Designing the interview schedule for this study

As explained in the research methodology, the research design used an explanatory sequential mixed method approach. Therefore, the interview schedule was finalised upon finishing the quantitative data analyses. However, the following themes were considered as essential. Aspects of the interview were:

- the various factors that influence university students to engage in HRBs
- the function of protective factors in preventing students from engaging in HRBs
- the relationship between HRBs and social acceptance in Saudi society; the impact of risk taking
- the role that the university plays to prevent students from engaging in HRBs
- the expected implications for students and their university
- existing knowledge and previous experiences for students regarding HRBs. (see Appendix 7 for the interview schedule)

6.7 Piloting the data collecting instruments

It is extremely important to test the study instruments of any research project, in this case a questionnaire and interview. A pilot study is described by Van Teijlingen and Hundley (2001) as a small scale trial run of the research with very small numbers of participants chosen based on the same criteria as those in the main study. The main goal for piloting the data collection instruments is to prepare for the main data collection process as:

...conducting a pilot study might give advance warning about where the main research project could fail, where research protocols may not be followed, or

whether proposed methods or instruments are inappropriate or too complicated (Van Teijlingen and Hundley, 2001,p40).

Furthermore, validity and reliability of the data collection tools were measured by piloting them in a systematic manner (see Section 6.11 below).

6.7.1 Piloting the questionnaire

Before the final version of the questionnaire was sent to the participants, the researcher conducted a pilot test to further refine it. Oppenheim stated that a pilot test has several functions; for example, by increasing the reliability, validity, and practicability of the questionnaire (Oppenheim, 2000). Conducting a pilot test is crucial because it might give the investigator an assessment concerning the difficulties of the questions, the length of time needed to complete the questionnaire, and the accuracy of the questions (Oppenheim, 2000). Cohen et al. (2007a) also suggest that a pilot test could generate categories from open-ended answers to use as categories from close-responded modes. It is clear that in order to distribute a valuable questionnaire, everything about the questionnaire should be examined.

In order to ensure the quality of the statements and their wording, the researcher distributed the questionnaire to a pilot sample of twenty students; ten in the female section and ten in the male group in order to ascertain its level of clarity and understanding and suitability to the students. As a result, the researcher was able to estimate the reliability of the whole instrument and modify the questionnaire accordingly. The researcher was not able to access the female section in every college because of cultural and religious aspects. To ensure representativeness of the pilot sample, the researcher asked assistance from the female tutors in administrating the

questionnaires and their collection from the female students. The researcher took into consideration the fact that the participants would deliver fruitful feedback about the questionnaire as they were asked to freely give their opinions of its items, but the researcher received no comments from the students from either the male and female sections. Students were collaborative in completing the questionnaire and indicated that the time required for completing the questionnaire was reasonable; ranging from between twenty to twenty five minutes.

After reviewing the questionnaire with supervisors and receiving final approval, the researcher sent a copy of this to the listed experts (See Table 6.2) who were asked for their feedback about its contents (see Appendix 6). On 20 July 2011, questionnaires were sent to eight educational specialists, in different fields, to seek their comments. They were asked about whether the questions were relevant to the research aims and objectives and appropriately clustered in each section to measure the same category. MK (please see the detailed information about the person in Table 6.2 below) was requested to check the interpretation from English to Arabic and vice versa. Piloting the questionnaire by people from different disciplines improved the construct validity for this instrument (Phelan and Wren, 2006).

Table 6.2: Education specialists involved in the pilot questionnaire

Name	Subject	Institution	Nationality
AA	PhD. in Biology	School of Education, Saudi	Saudi Arabia
AG	PhD. in Religion	School of Education, Saudi	Saudi Arabia
MS	PhD. in Psychology	School of Education, Saudi	Saudi Arabia
AD	PhD. in Public Health	PhD student in UK University	Saudi Arabia

Name	Subject	Institution	Nationality
MH	MA. In Mathematics	PhD. student at UK University	The University of
MR	M.A in Sociology	PhD. student at UK University	Kuwait
YA	M.A in Mathematics	PhD. student at UK University	Saudi Arabia
IA	M.A in Science	PhD. student at UK University	Saudi Arabia
MK	PhD. English	School of Social Science Saudi	Saudi Arabia

Following the experts' feedback, Q49 regarding sexual relationships before marriage was eliminated and the scale used in Q9, Q10, and Q52 was elevated from 8 to 10 points (see Appendix 5). With regard to questions about taking drugs, drinking alcohol, and engaging in sexual activities, the researcher decided to put them in as indirect questions such as 'among your closest friends, how many times do you think they have used illegal drugs....' (Q26). These changes were made as the prior wordings were inappropriate culturally and ethically to ask the participants such questions within the context of the study.

6.7.2 Piloting the interview

In terms of piloting the interview schedule, two Saudi university students were interviewed. Four colleagues at the School of Education were approached for feedback on the interview schedule. Furthermore, the pilot study was proposed to grant experimentation with data gathering approaches to define which approaches would generate the most fruitful data. It was also crucial to identify the differences of data and determine the mechanisms of data analysis. In addition, piloting interviews helped with coding of the qualitative data. Furthermore, it enabled decisions to be made with

regard to the most suitable computer programmes appropriate for analysing qualitative data.

6.8 Questionnaire distribution procedures

Acquiring permission from the host university was completed by the researcher to conduct his study at the end of December 2011. Permissions from participants were also sought. These procedures are explained in detail in the part of Ethical considerations in Section 6.12. The data collection took place at University X in Saudi Arabia and occurred in two stages. In the first stage, in March 2012, quantitative data were collected using a questionnaire, while qualitative data were collected in March 2014, soon after the analysis of the quantitative data was completed. The main purpose was to permit the qualitative data collection to focus on the key findings from the quantitative data and explain the factors and reasons of the identified HRBs more rigorously.

The procedure for collecting the data by questionnaire was conducted in two stages. In the first stage, written approval was collected from the rector of University X for conducting the survey. Then, seven schools were chosen randomly and the researcher went to every one of these schools with the aim of seeking permission from the respective Deans. The Deans were provided with the research details and they gave permission to conduct the survey. The Deans then contacted the lecturers who conducted a brief session after their scheduled classes where students voluntarily completed the questionnaire. A female faculty member was also engaged to administer the questionnaire among the female students of the university. The

questionnaires were completed by the students according to the following schedule as shown in Table 6.3.

Table 6.3: Survey schedule

School	Date	Number of Participants
School of Business and Administration	4-2-2012	119
	6-2-2012	
	7-3-2012	
School of Humanities	11-2-2012	133
	12-2-2012	
	14-2-2012	
School of Engineering	18-2-2012	92
	20-2-2012	
	21-2-2012	
School of Education	22-2-2012	87
School Computer Science	25-2-2012	101
	26-2-2012	
	27-2-2012	
School of Urban Planning and Architecture	27-2-2012	84
	28-2-2012	
School of Science	28-2-2012	106
	29-2-2012	
Total	-----	722

The researcher and his female representative administered the questionnaire and the respective lecturers were requested to leave the classroom to give the students confidentiality while completing the questionnaires. The students were first briefed about the research by the researchers and then they signed the consent form voluntarily for their participation (Appendix 10). Later, each class (of each school) was given around 45 minutes to fill-out the questionnaire. The researcher in the male section and his female colleague remained vigilant at all times to help the participants understand the questions clearly. The same procedures were applied for both the male and female sections of each school. The questionnaires were completed anonymously and no information was collected about the participants. Also, participants were asked

to leave a distance between each other so no one could negotiate the answers with their classmates. In addition, the researcher and his female assistant ensured complete silence in the room where the questionnaires were being completed.

6.9 Interview conduction procedures

The interviews were conducted at the very beginning of the academic year 2013/2014.

The researcher interviewed the male students while the female students were interviewed by a colleague from the female department. The researcher employed a highly skilled female colleague. The skills and ability of the female colleague were assured so that she would be able to elicit valuable data from the female interviewees. This colleague has experience in conducting interviews and was provided with the necessary training in achieving the stated research mission. The researcher was aware that the quality of the data collected by the female interviewer needed to be consistent with that collected by him. Therefore, steps were taken to handle this issue. Constant contact by phone and email between the researcher and his colleague took place when conducting the interviews to identify any issues and difficulties that may have arisen during the data collecting process.

The interviews were conducted in the Arabic language as it is the native language for the participants. The interviewees were informed about the purpose of the study and the approximate length of the interview and a consent form was filled by every participant (Appendix 9). The process of conducting the interview began by confirming the time and the location. Prior to the interview, the interviewer assured the interviewee that the audio-recording equipment (Sony V16 audio recorder) was

working accurately, its battery was sufficiently charged, and the memory card had enough space for at least an hour of recording. The advantage of recording the interviews provided the researcher with the ability to re-listen to the verbatim responses multiple times to ensure that no detail was missed during the transcribing. The interviews were conducted in suitable environments to ensure no interruptions or the possibility of being overheard. In all interviews, the researcher or his female colleague took into account treating the participants with honesty, friendliness, and trust as their answers were much appreciated and of value to this study. At the end of each interview, the researcher acknowledged and thanked the interviewee for his/her collaboration and valuable inputs. The recordings were kept confidential and uploaded in a password protected computer at the University of Southampton.

6.10 Tools for data analysis

This study adopted different approaches of data analyses for its quantitative and qualitative sets of data. Data analysis was concurrent with data collection as the quantitative data (through the survey) were analysed before conducting qualitative data collection (through the interviews).

The initial concern for quantitative data analysis was choosing the appropriate software or programs. Many programs have been widely utilised in social science studies, such as, SPSS, MS Excel, R, S-PLUS, and SAS. The Social Package for the Social Science (SPSS) is the most common software used in education research because of its availability for the majority of higher education institutions and it is user-friendly (Muijs, 2010). Therefore, the researcher adopted SPSS version 18 to analyse the

quantitative data. The researcher conducted descriptive analysis to look for characteristics and explain.

The analysis of the qualitative data, however, followed a set of stages. Holloway indicated that 'the analysis of qualitative data is an ongoing process that is best begun early, as soon as the data collection begins' (Holloway, 2002,p39). In this study, qualitative data analysis was started by transcribing the recorded interviews collected by the researcher or his female colleague as soon as possible after each interview. While transcribing, emerging interpretations derived from initial contact with the data was immediately documented for further contribution to data analysis.

Analysing qualitative data is not primarily about description but is more about generating themes and concepts from the collected data in order to interpret the phenomena under investigation (Holloway, 2002). A thematic approach was used to analyse the interview outcomes. Holloway (2002) suggested that coding is the central link between collecting data and developing a theory to explain the data. The interview data was passed through a thematic analysis process. First, codes were identified, and then grouped into categories, which were organised into themes (Smith et al., 1995). This coding process helped keep the investigator close to the data and avoid preconceived ideas and assisted in influencing decisions as to whether further data needed to be collected (Smith et al., 1995). This systematic procedure was needed to be followed by the researcher as the research subjects and the research context of this study were personally and professionally familiar and connected to him, and these could raise the risk of bias while analysing the data.

6.10.1 Meta-analysis

In this thesis, the meta-analysis procedures have been followed with the literature review, and the survey and interview findings to explore the research questions. The term 'meta-analysis' refers to the analysis of analysis. For example, if a researched topic or the research findings are further examined through different themes, patterns and approaches, the new analysis can be considered as the meta-analysis. Meta-analysis can integrate various individual study findings and can compare and contrast those together to explore new results (Glass, 1976). Egger et al. (1997) suggested that the meta-analysis procedures should be carefully conducted with a complete investigation plan. They also mentioned the need for comprehensive examination of every individual findings, researcher's rational views and assumptions, and descriptions of findings through graphical displays.

Based on the suggestions of Egger et al. (1997), and Miller and Pollock (1994), this thesis has conducted the meta-analyses of the findings in three steps. In step one, the relevant research findings of the previously conducted research work were reviewed and listed for comparing with the findings of this thesis. In step two, two types of datasets, the survey and the interview data, were gained and findings reported with references to the literature review. Lastly, in step 3, the findings were again analysed on new themes and patterns (please refer to Chapters 9 and 10) which provided different aspects of the findings and helped to realise the research context more extensively.

6.10.2 Methodological triangulation

Triangulation is defined by Cohen et al. as '...the use of two or more methods of data collection in the study of some aspect of human behaviour' (Cohen et al., 2007b,p112).

The researcher believes that employing more than one method can advance his research in two ways. First of all, using more than one instrument can help to obtain more information which cannot be gathered by using one approach. Secondly, applying different instruments can lead to the acquisition of rich and appropriate data from different dimensions about the same investigated phenomena. Perlesz and Lindsay stated that:

Triangulation between the evidence produced by different research methods is thought to be a simple and common form of combining methods. Various reasons have been advanced for the use of combined methods triangulation, including increasing the concurrent, convergent and construct validity of research, the ability to enhance the trustworthiness of an analysis by a fuller, more rounded account, reducing bias, compensating for the weakness of one method through the strength of another, and in testing hypotheses (Perlesz and Lindsay, 2003, p 31).

Therefore, using more than one research method is highly recommended to meet the needs of the research by obtaining complementary data (Hutchinson, 2002).

Methodological triangulation can potentially enhance the reliability and validity of a study and validate the potential findings. As stated, this study employed two research methods, namely questionnaire and interview, in order to provide this enhancement.

6.11 Validity and reliability

Validity and reliability are two fundamental aspects of any persuasive research (Sim and Wright, 2000). In the case of a questionnaire, the validity is ensured when the gained data represent what they are meant to represent (Sim and Wright, 2000). For example, if a test that claims to evaluate overall language proficiency measures only writing skills, the test is not valid in terms of evaluating language adequacy; nevertheless it may be highly valid to measure writing skills. Reliability on the other hand, means that '...the assurance that the measure is consistent' (Aday and Cornelius, 2006). Cohen et al. (2007a) emphasise that reliability in quantitative research is essentially a synonym for dependability, constancy and replicability over time, over instruments and over groups of respondents. However, there are three basic kinds of reliability which are stability, equivalence, and internal consistency. It is clear that validity is a more important aspect than reliability as the latter is directly dependent on the measurement of the earlier one. According to Cohen et al. (2007a), a research might be judged worthless if it fails to be considered valid. Reliability on the other hand, is easier to assess using different techniques, such as test-retest reliability or internal consistency.

The researcher of this thesis used techniques to retest the validity and reliability of the questionnaire used for this study. First of all, in order to measure the validity, it was arbitrated by experts from a wide range of disciplines, from both national and international universities.

The questionnaire utilised for the current study was given due consideration, and processed through several stages as described below:

- In preparation, previous studies were reviewed in order to adopt and inform some questions.
- Questions included in this questionnaire were formulated to be suitable to the Saudi students.
- The researcher ensured the logical consistency of the themes to obtain rich data to meet the research objectives.
- Both supervisors for the researcher were asked for advice and comments.
- Experts from different universities in Saudi Arabia and Kuwait piloted the questionnaire. They were asked for their suggestions and opinions for both the Arabic and English versions.
- The pilot study was operated with small numbers of participants who were similar to the main targeted population and accordingly results from the pilot study were analysed.
- The translation for the questionnaire was examined by a language expert, who checked the interpretation from English to Arabic, spelling and layout.

The final version was sent to the representative sample to be piloted at the beginning of February 2012.

Researchers in qualitative research assess the credibility of their interviews by judging their transparency, consistency-coherence, and communicability (Rubin and Rubin, 2005). In order to judge transparency, the interviewer is required to record accurately

all interviews. This step offers the opportunity for the researcher to play back the recordings or read the notes. It is stated that consistency-coherence of interviews can be examined by allowing participants to comment on their responses and ideas which might be seen by the researcher as inconsistent and in conflict (Rubin and Rubin, 2005).

The researcher has to be well-prepared through utilising extensive background information to prepare interview questions to help him or her to elicit specific and detailed information (Rubin and Rubin, 2005). The interviewer introduced a design and structure to the interview questions, to obtain extensive data regarding the research questions. To meet communicability demands, it was the duty of the researcher to ensure that the interviewees are expressing their thoughts about their experiences rather than presenting others' views and experiences. To ensure this, in this research the researcher maintained the following strategies:

- Before the interview sessions, the interviewees were assured that the information would be anonymous and it would be used only for research purposes. This strategy enhanced the validity of the interview outputs as the interviewees did not need to hide any sensitive information or provide any false data.
- The researcher and his female colleague tried to focus on the personal experiences and perceptions of the interviewees on HRBs and thus they often wanted to know the similar incidents in their life and their own opinions and reflections on them. The approach allowed the interviewees to pick answers,

particularly the examples, from their own life which had been the major aim of the interview conduction.

- After asking any question, the researcher tried to make sure that the interviewee fully understood it. This checking of understanding enhanced the validity of the interview data as the interviewee could remain focused on the question he/she was asked to answer and consequently the answers were mostly relevant.

Additionally, in many cases and after asking the pre-set question, the researcher asked some supplementary and investigative questions like 'why', 'why do you think so', 'how', 'when did it happen' etc. for receiving with the aim of clarifying responses. This strategy was successful in enhancing the validity of responses as the responses to the supplementary questions clarified the answers given of the core question with elaborate descriptions and examples.

The researcher and his female colleague used audio-recording in all the interviews.

These were then transcribed into English. The respective transcript of the interview was later provided to individual interviewees to confirm that the information had been correctly received and transcribed. No objection and misinterpretation in this regard was mentioned by the interviewees.

6.12 Ethical Considerations

Educational research has historically engaged in research that introduced minimal risk to the participants (Creswell, 2003a). However, in recent years ethical considerations across the research community have come to the forefront (Social Research Association, 2003). According to Mertens (1998), ethics in research should be

considered at the planning stage and during the research procedure and then applied through the different research phases. Therefore, the researcher has an obligation to meet the needs, rights, desires, and the values of the people under investigation. In this regard, in Saudi Arabia, cultural values and traditions created problems in directly approaching female participants. To minimise this issue, the guidance and help of the female head of the institutions of University X in Saudi Arabia was sought.

The research was conducted in accordance with the ethical procedures and guidance of the University of Southampton, as summarised in the Ethical Protocol document. The ethics reference number is SSEGM-12 (Appendix 11). In the main fieldwork phase, data needed to be collected from University X. Firstly, a request form for consent was sent to University X to gain permission to conduct this study; this was granted in December 2011. Permission was also sought and received from the Saudi Cultural Bureau in London to collect the data.

In order to enhance the response rate of the questionnaire and interview, the procedure was explained verbally to all participants by the researcher and his female colleague who collected the data from the female section. It would have been inappropriate to financially compensate the participants for their cooperation, because in Saudi culture, people, including young adults, are encouraged to participate in educational, social welfare and religious activities voluntarily, not for any gaining financial benefits. The researcher therefore strongly emphasised the importance of this study for Saudi youths and shared the hope that the findings would be beneficial for the overall development of Saudi Arabia.

There are further ethical considerations when using a questionnaire because it usually investigates people's attitudes toward a phenomenon. The questionnaire will always be an intrusion into the life of the respondent, be it in terms of time taken to complete the questionnaire, the level of threat and sensitivity of the questions, or the possible invasion of privacy (Cohen et al., 2007b). Researchers should take into account many basic points as they design and distribute questionnaires. First of all, participation should be voluntary; secondly, the results should be:

... for the good of society, not random and unnecessary. Participants also should be allowed to terminate their involvement at any time. Finally, researchers should terminate research if any ethical concerns arise (Cohen et al., 2007a,p 77).

The researcher was aware of these ethical issues and took measures to address them.

Consent letters were sent to students to invite them to participate in the study.

Informed consent was sought and requested in written form for the questionnaire and the interview. Anyone who was eager to volunteer was required to sign the consent form (Appendix 10), which made clear that all responses from all the participants would be kept confidential and will be used for the purpose of the current study only.

The participants were informed that the data would be owned by the researcher and no one else will be able to access it. The same procedure was taken with the interview participants (Appendix 10). Data was stored in a password protected computer file at the University of Southampton. Upon finishing the research project, all the data was destroyed and all the related source documents; the questionnaires and interview transcripts were also destroyed.

Initially, consideration was given to the fact that some students might be rather unsure about taking part in this research because they would not know what to expect and the sensitivity of the subject matter of this study might arise at any time. The respondents were assured by the researcher that the collected data would remain confidential and would not be accessible by others and will be used only for research purpose.

To assure anonymity and confidentiality, students were told that their names would not be disclosed at any point and any references to staff or students' characteristics would be anonymised. Extra care was taken to protect the confidentiality and anonymity of the participants given the reliance on heads/directors help in accessing female participants in University X. The researcher ensured that the participants had the choice to withdraw from participating in this study without any consequences to them personally.

It is important to ensure the secure atmosphere of the surroundings in which to conduct the interviews and the researcher's top priority was to confirm that the participants felt comfortable. The respondents might have been reluctant to participate because of two main reasons. First, the subject of investigation in this study is sensitive to Saudi culture, and second because of respect for the status of the researcher in the culture of the country, as has been claimed by many (Alansari, 1995, Al-Sudais, 2004). The researcher consciously avoided leading the participants' answers and avoided persuading them to make specific claims (Cohen et al., 2007b).

In reporting the findings, no references were made to the specific departments or subjects of the individuals who completed the questionnaire and/or participated in the interviews. This protected the respondents as their information is non-identifiable.

6.13 Conclusion

This chapter has explored the importance and the requirements of research methodology, justifying the research design for carrying out this study. This study is based on a mixed method approach as a methodology to explore HRBs among university students. In order to study this phenomenon, questionnaires and interviews were employed. The ways in which the participants were chosen to gain a representative sample has been described. Previous researchers, including (Cohen et al., 2007b) considered pilot studies beneficial to assist in achieving the goals of research. Consequently, the data collecting instruments were piloted. It was also beneficial to check the quality of the research methods through consultation with PhD supervisors and specialists at the School of Education at University X in Saudi Arabia, who identified those individuals best placed to assist with collecting the data from various sources. The tools used for collecting the data and the techniques used for analysing the data have been discussed and ethical considerations have been elaborated. The next two chapters (Chapter 7 and 8) report my survey (quantitative) and my interview (qualitative) findings. Then, Chapter 9 critically analyses these two datasets and presents my understanding for the investigated context in relation to the previous literature.

Chapter 7 : Quantitative Findings

7.1 Introduction

This chapter presents the findings from the data collected via the questionnaire.

Descriptive statistics are used to present the profile of the respondents and to answer the research questions. It begins with a description of the respondents and then presents the findings regarding each of the nine HRBs and concludes with a chapter summary.

7.2 Profile of the respondents

The sample consisted of 722 students (431 males and 291 females), with nearly two thirds being male. The complete profile of respondents is shown in Table 7.1.

Table 7.1: Profile of the questionnaire respondents

(Questions)	Respondent	Frequency	Percentage
Q53: Sex	Male	431	59.69
	Female	291	40.31
Q7: Marital Status	Married	47	6.5
	Divorced	17	2.4
	Widowed	4	0.6
	Never been married	653	90.4
	Missed	1	0.1
Q8: With whom do you currently live?	Alone	62	8.6
	Spouse	36	5.0
	Relative	57	7.9
	Friends	35	4.8
	Parents	530	73.4
	Missed	2	0.2

The largest group of students 653 (90.4%) for the question about marital status was in the 'never been married' group. This might be due to the fact that most young Saudis get married at the age of twenty five or more (Al-Khateeb, 1998). Only a small number of the students fit into the 'married', 'divorced' or 'widowed' categories. Generally,

more than half of the students stay with their parents. Out of the 720 students who responded, 530 (73.4%) still stay with their parents even though they are now studying at university. Generally, in Saudi Arabia children stay with their parents until they get married.

Table 7.2: Mean and standard deviation of age, current year of study and grade for students

Questions	Respondents who answered the questions	Minimum	Maximum	Mean	SD
Q1: Age	718	19	28	20.77	1.34
Q2: Current Year at college	720	0.5	6.0	2.43	0.97
Q6: Grade	686	1.20	4.96	3.61	0.67

Table 7.2 shows that most of the respondents were young adults within the age range of 19-28 years and the Mean age being 20.7. Most of the respondents were in their second year (mean=2.43) with some in their sixth year at university. This therefore implies that most students are likely to engage in HRBs, given that quite a long time is spent on their own. Furthermore, the Mean grade (3.61) indicates that most of the respondents are academically able. In some instances, higher Mean grades could point to the fact that such students are from average or better social backgrounds and schools (Wiseman et al., 2008). It is imperative to note that the Saudi university system uses a cumulative grade point average (GPA) to grade students' performance on a scale of 0-5.

7.3 Students' health risk behaviours

As described in the literature review chapter, HRBs among young persons can include many different types of behaviours (Centre for disease control and prevention, 2012) .

However, this study concentrates on seven major aspects as listed below:

- i) behaviours that contribute to vehicle injuries
- ii) behaviours that contribute to violence
- iii) tobacco use
- iv) alcohol and other drug use
- v) unhealthy dietary behaviours
- vi) physical inactivity, and
- vii) sexual behaviours that contribute to sexually transmitted diseases

In addition, the questionnaire monitors the prevalence of body weight and emotions among students at X University. Each of the above HRBs is explained in detail below followed by the participants' self-assessment regarding some risky activities.

7.3.1 Behaviours that contribute to vehicle injuries

This section presents items on students' HRBs focusing on the topic of safety. Table 7.4 shows the Mean score, standard deviation, minimum and maximum value with the level of risk of all aspects of safety. Different aspects of safety were included in the questionnaire, such as the number of times students wear a seat belt, either when they are driving or as passengers, how often they have been involved in an accident, go through traffic lights when they are red, exceed the speed limit or text or talk on a

mobile phone while driving. For consistency, these items are scored on a ten point scale and later collapsed into three categories, that is, 'never', 'sometimes', and 'always'. Using the scores, between 1-3 are classified as high risk, 4-6 medium risk, while 7 and above are taken as low risk on safety aspects (Warden et al., 2003).

According to Table 7.3, the Mean score for Q9 regarding the frequency of wearing a seatbelt when riding in a car driven by someone else, shows a high risk for all groups. The Mean is 3.07 times with its minimum value as 1 for 'never' and the maximum value 10 for 'always'. These findings suggest that the respondents seldom wear a seat belt when they ride in a car driven by others, with female respondents showing a higher risk (Mean=1.95) compared to males (Mean=2.56). This might be because females are unlikely to be checked by police because of the culture of Saudi society.

Table 7.3: Number of students wearing seat belt (by gender)

Questions	Gender	N	Minimum	Maximum	Mean	SD	Interpretation of level of risk
Q: 9 How often do you wear a seat belt when riding in a car driven by someone else?	All	722	1	10	3.07	2.47	High
	Male	431	1	10	3.82	2.56	High
	Female	291	1	10	1.95	1.84	High

Table 7.4: Risks taken during driving (male respondents only)

Item	N	Mean	SD	Minimum	Maximum
Q:10 How often do you wear a seat belt when driving a car?	428	4.24	2.94	1	10
Q:11B During your life how many times have you been involved in car accident?	428	2.65	2.26	1	20
Q:12B During the past 12 months, how many times have you jumped the traffic lights?	430	11.64	14.41	1	104
Q:13B During the past 30 days, on how many times did you exceed the speed limit?	431	17.48	18.51	1	120
Q:14B During the past 30 days, how many times did you drive a car or other vehicle while texting or talking on a mobile phone?	431	18.92	18.66	1	100

The items in Table 7.4 apply only to male respondents as females are not allowed to drive in Saudi Arabia. The responses to Q10 averaged at 4.24 on a ten point scale. Based on Warden et al. (2003), this score falls in the range of medium. Responses to Q11b, indicates that on average students have been involved in car accidents approximately three times in their lives. However, there were some students who indicated that they had been involved in an accident 20 times in their lives. Given that each accident is a sign of risk, it can be claimed that students are involved in risky behaviours. The other risky behaviours in which the students have been involved in the past twelve months include going through red traffic lights (Mean =11.6 times), exceeding the speed limit (mean=17.5 during the past 30 days) and texting or talking on the phone while driving (mean=18.9 times during the past 30 days). In each of the risks mentioned above, some students lie on both extremes, suggesting that some are highly risk prone while others are averse.

7.3.2 Behaviours that contribute to violence

The violence category includes two main aspects: first, the number of days a student carries a weapon, and second, the number of times they have been in a physical fight. Table 7.6 shows the Mean score, the minimum and maximum value of aspects concerning violence for all respondents. The result indicates that 90% of the students have not carried a weapon (Table 7.5). For the minority of students (9.8%) who have done so, during the past 30 days, they have carried weapons such as a gun, knife or club on 13.58 days on average (see Table 7.6). This is an alarming finding and indicates a high level of risk for these individuals and potentially those they associate with regard to physical fights, although nearly 78% of students have not been in a physical fight

during the past 12 months and the rest of students have a very low incidence of this risk behaviour (22%). Furthermore, the few who have been involved in physical fights have done so approximately three times in the past 12 months (see Table 7.6).

Table 7.5: Frequency and percentage of violence aspects for all respondents

Questions		Frequency	Percent
Q:15A During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?	Never	651	90.17
	Yes	71	9.83
Total		722	100
Q:16A During the past 12 months, how many times were you in a physical fight?	Never	564	78.12
	Yes	157	21.74
	Missed	1	0.14
Total		721	100

Table 7.6: Mean score of violence for all respondents

Questions	N	No of respondents who answered yes''	Minimum	Maximum	Mean
Q:15B During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?	722	71	1	30	13.58
Q: 16B During the past 12 months, how many times were you in a physical fight?	721	157	1	20	2.83

Figure 7.1 and 7.2 show the variations in Mean scores of violence by gender. For instance, on average, males carried weapons such as a gun, knife, or club on more days on average (14.96) compared to females (10.05) (See Figure 7.1 and Tables 8 and 9 in Appendix). However, females reported having been involved in physical fights many more times on average (mean=3.23) during the past 12 months compared to males (Mean 2.6) (see Figure 7.2 and Tables 8 and 9 in Appendix).

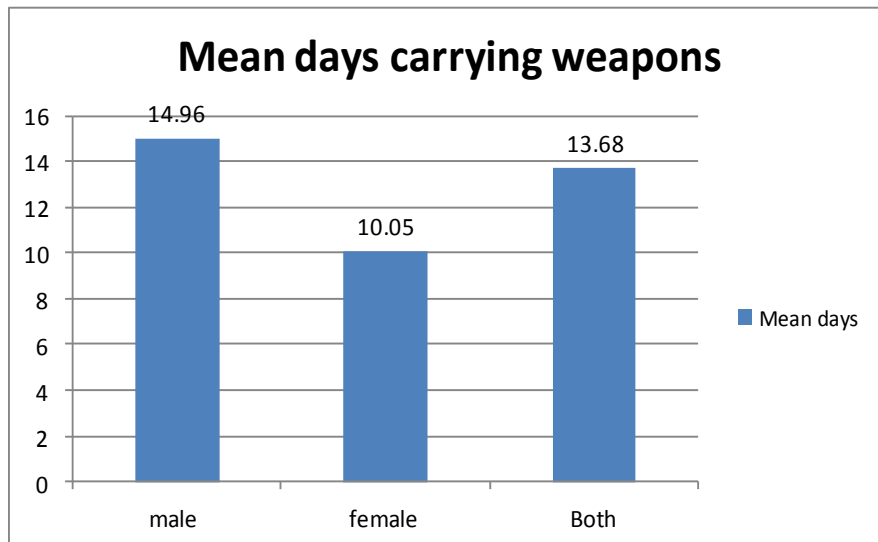


Figure 7.1: Carrying weapons

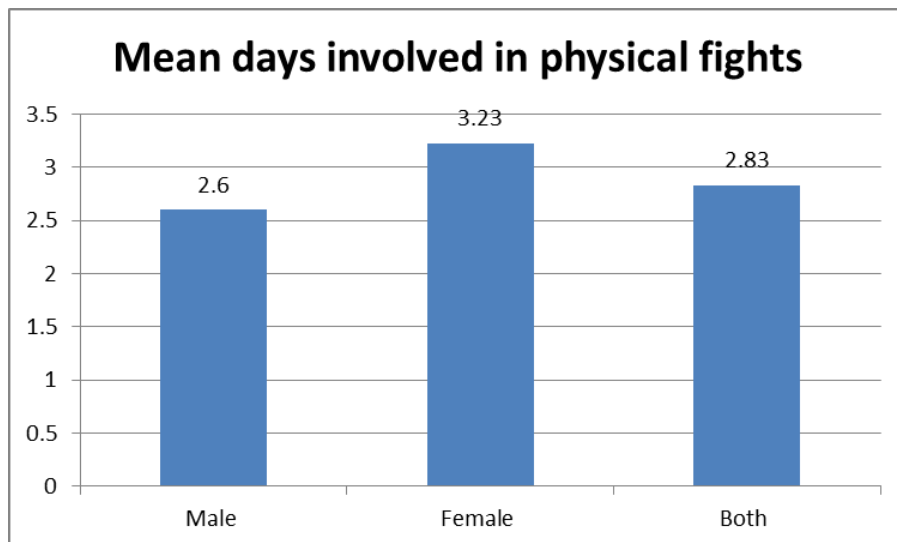


Figure 7.2: Physical fights

7.3.3 Sad feelings

This section has items that elicit responses about the sad feelings of the students.

Table 7.7 shows that almost two thirds of students felt sad and hopeless for two weeks compared to those who do not (Q17). This shows a high level of risk behaviours as feeling sad is classified as depression according to CDC (Centers for Disease Control and Prevention, 2013). For personal problems, most of the respondents tend to trust

their friends to talk to and the second choice is not to talk to anyone or to keep the problem to themselves (Q18). Interestingly, over three quarters of the respondents said that they do not speak to their relatives, parents (77.1%) and/or siblings (81%). 24.7% of the respondents claimed that they do not speak to anyone and kept their personal problems to themselves, which can lead to heightened emotional risk (see Table 7.7).

Table 7.7: Frequency and percentage on sad feelings aspects

Questions		Frequency	Percent
Q:17 During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?	Yes	465	64.4
	No	254	35.2
Total		719	100.0
Q:18 If you have a personal problem, in your life, who are people can you trust to talk to?	A: Yes	12	1.7
	No	710	98.3
A. Specialist	B: Yes	165	22.9
	No	557	77.1
B. Parents	C: Yes	265	36.7
	No	457	63.3
C. Friends	D: Yes	137	19.0
	No	585	81.0
D. Siblings	E: Yes	26	3.6
	No	696	96.4
E. Spouse	F: Yes	178	24.7
	No	544	75.3
F. No one			

7.3.4 Tobacco use

This section considers the responses on smoking. Figure 7.3 shows the frequency and percentage of aspects concerning smoking (See Table 10 in Appendix). Approximately two thirds (468) of the students have tried cigarette smoking at some stage in their

lives. Among those, 331 participants have been smokers during the last 12 months. Of these, more males (238) than females (93) reported smoking (see Figure 7.4 and Table 11 in Appendix). Further, students are likely to start smoking at aged 17.26 years, although this varied by gender. For example, males are more likely to start smoking at an earlier age (16.65 years) compared to females (18.5 years), see Figure 7.5 and Tables 15 and 16 in Appendix.

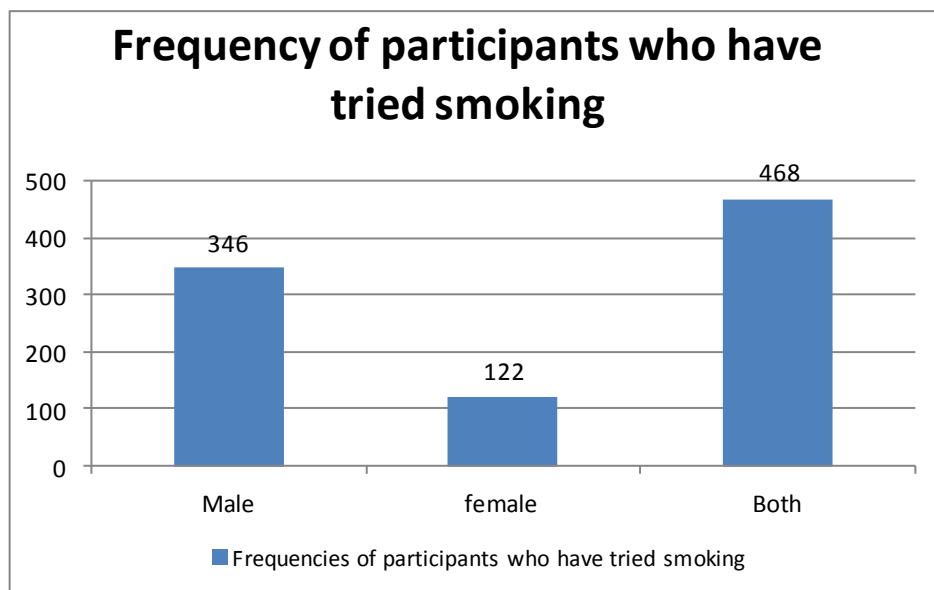


Figure 7.3: Ferquency of the participants who have tried smoking

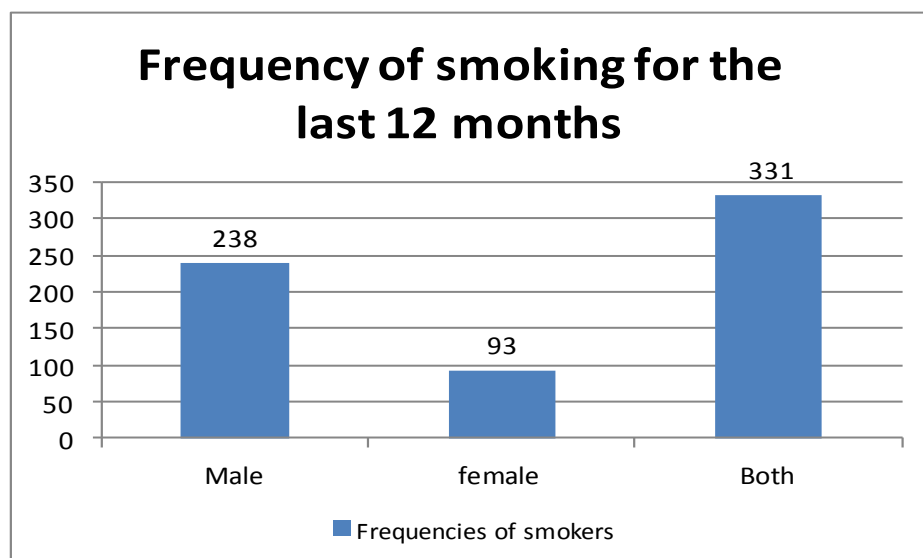


Figure 7.4: Frequency of smoking during the last 12 months

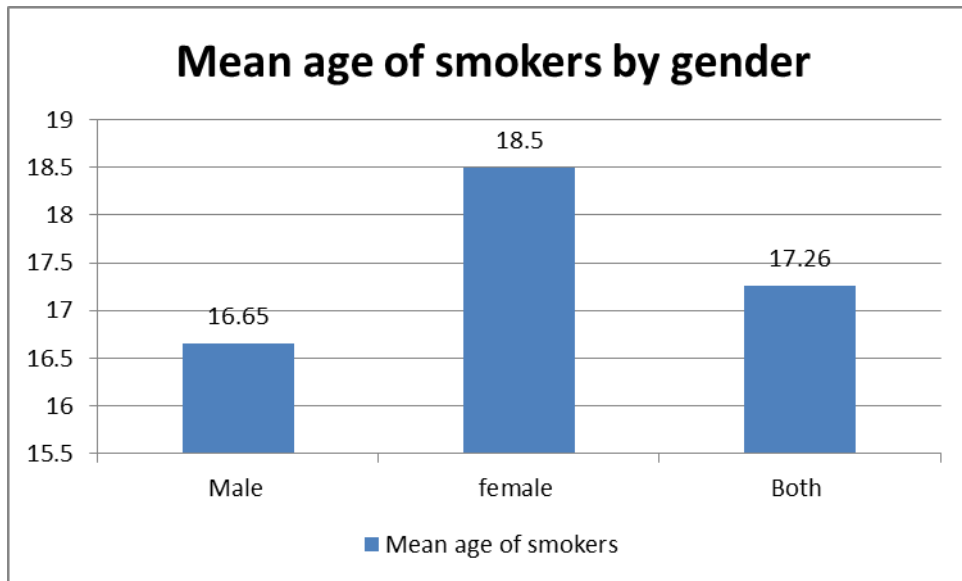


Figure 7.5: Mean age of smokers by gender

When asked about their smoking habits over a period of 30 days both males and females spend more days smoking cigarettes than not (Mean days for smoking cigarettes = 18.95), as shown in Figure 7.6 On the other hand, an average of 9.52 days and 8.57 days are spent by both males and females smoking moassal and shisha respectively (see Figure 7.6 and Table 14 in Appendix). Overall, a number of students (133) were contemplating quitting smoking. Of these, the males form the highest proportion (76) compared to females (57), see Figure 7.7, whereas only a small percentage of them (12.4 %) have not tried to quit smoking. Compared to male and female data concerning these factors, the percentage of male students who have tried cigarette smoking is slightly higher than female students (Table 11 and Table 12 in Appendix), and the percentage of those who have tried to quit is slightly lower in the case of the male respondents (Q24) (see Table 12 in Appendix).

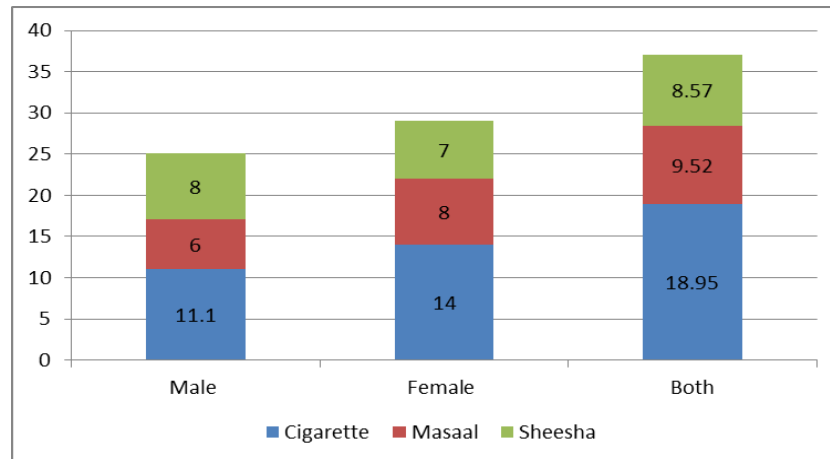


Figure 7.6: Mean days smoked by gender and type

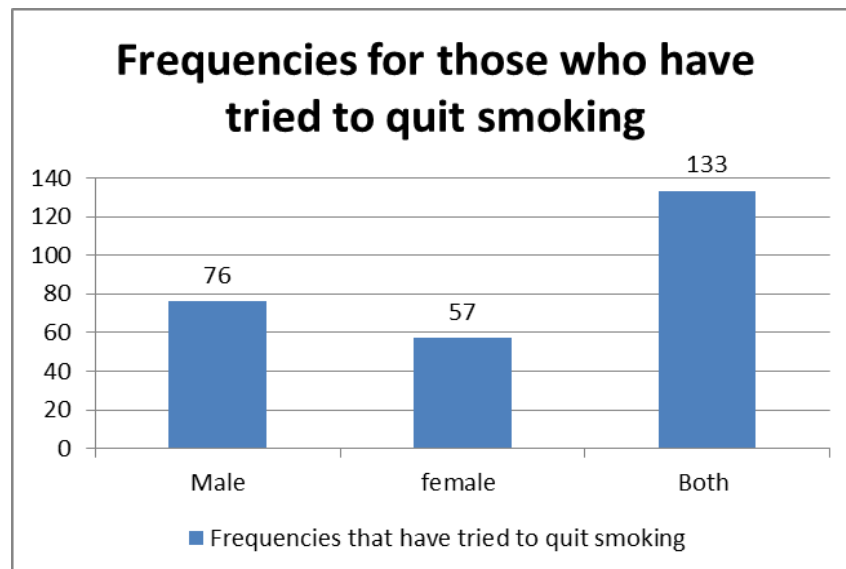


Figure 7.7: Quitting smoking

7.3.5 Alcohol and other drug use

This section presents the findings on drug and alcohol use. Table 7.8 shows the frequency and percentages of the aspects of students' use of drugs and alcohol. A very small number of students claimed to chew khat (4%), take steroid pills (7%), or to have encountered someone of their age using marijuana or cocaine or sniffing glue. This shows that students' risky behaviours in terms of drug use is low, however almost 25% of students have encountered someone of their age who has drunk alcohol.

Table 7.8: Frequency and percentage of drug use and alcohol

Questions		Frequency	Percent
Q:25 During the past 12 months, did you ever try to chewing Khat?	Yes	29	4.0
	No	682	94.5
	Prefer not to answer	10	1.4
	Missed	1	0.1
Total		722	100
Q:26 During your life, how many times have you taken steroid pills without a doctor's prescription?	Yes	50	7.0
	No	655	90.7
	No response	14	1.9
	Missed	3	0.4
Total		722	100
Q:28 During your life, did you encounter someone your age who has been drinking alcohol?	Yes	181	25.1
	No	532	73.7
	Prefer not to answer	9	1.2
Total		722	100
Q:29 During your life, did you encounter someone your age who has been using marijuana?	Yes	83	11.5
	No	638	88.4
	Missed	1	0.1
Total		722	100
Q:30 During your life, have you ever been asked to use cocaine, including powder, crack, or freebase?	Yes	37	5.1
	No	683	94.6
	Missed	2	0.3
Total		722	100
Q:31 During the last 12 months, has any of your closest friends sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high?	Yes	47	6.5
	No	661	91.6
	No answer	14	1.9
Total		722	100

For the item concerning illegal drugs, as seen from Graph 6.8, 638 (88.4%) students indicated that they had never met anyone using illegal drugs in the last 12 months. On the other hand, 84 (11.6%), of those who had met someone using illegal drugs, 9 (10.7%) were female while 75 (89.3 %) were male. This indicates that males are more likely than females to have encountered someone using illegal drugs.

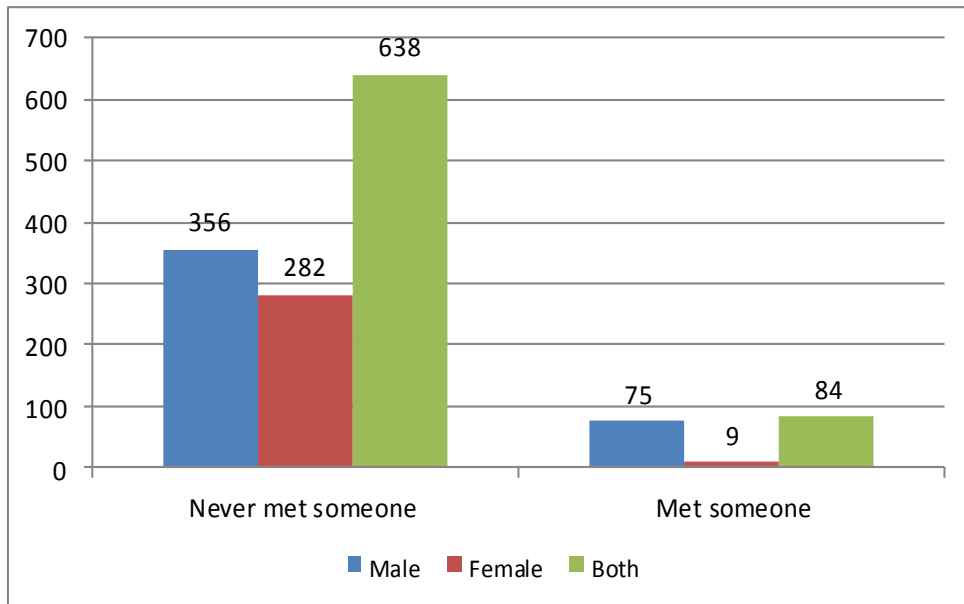


Figure 7.8: Frequency of friends' experience of illegal drugs in the last 12 months

Furthermore, as seen from Figure 7. 9, it is indicated that on average the maximum number of times a friend had used illegal drugs is approximately once (See Table 18 in Appendix). Males represent a higher Mean score of approximately two times as the maximum number of times they know of a friend using illegal drugs (See Table 19 in Appendix). On the other hand, on average females seldom knew of a close friend using illegal drugs (Mean 0.05), see Table 20 in Appendix. It is important to note that the male responses reflect wider variations, ranging from 0 minimum score and 60 as maximum score, however most of the responses are close to one.

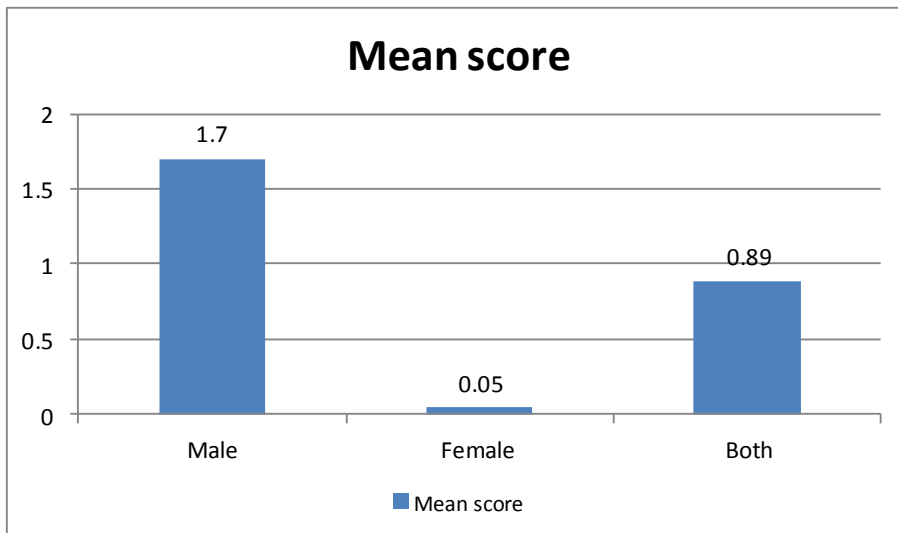


Figure 7.9: Mean of Maximum number of items a friend has used illegal drugs

7.3.6 Body weight

Table 7.9 shows the frequency and percentage of students' views about body weight.

Overall, for body weight, it shows that almost half (47 %) the respondents considered that they were at about the right weight. About half (51.1 %) of the students were trying to lose weight, by exercising and eating less food. A significant percentage (82.5%) indicated that they did not go without eating for a day or more, although they were trying to lose weight.

Table 7.9: Frequency and percentage of body weight aspect

Questions		Frequency	Percent
Q:32 How do you describe your weight?	Very underweight	39	5.4
	Slightly underweight	92	12.7
	About the right weight	339	47
	Slightly overweight	220	30.5
	Very overweight	31	4.3
Total=N=721		721	100
Q:33 Which of the following are you trying to do about your weight?	Lose weight	369	51.1
	Gain weight	136	18.8
	Stay the same weight	180	24.9
	Not trying to do anything	37	5.1
Total		722	100
Q:34 During the past 30 days, did you exercise to lose weight or to keep from gaining weight?	Yes	369	51.2
	No	349	48.3
	Missed	4	0.5
Total		722	100

Q:35 During the past 30 days, did you eat less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight?	Yes	344	47.6
	No	377	52.3
	Missed	1	0.1
Total		721	100
Q:36 During the past 30 days, did you go without eating for 24 hours or more to lose weight or to keep from gaining weight?	Yes	126	17.5
	No	593	82.5
Total		719	100

Tables 7.10 and 7.11 indicate the body weight aspects by gender. As seen from the responses from Q32, approximately 43.9% of males and 51.5% of females considered that they were about the right weight. Further, approximately half of the respondents, females (54%) males (49%), were trying to lose weight. More males (51.9%) reported that they were trying to lose weight by exercise, while more females (55%) had chosen to eat less food to lose weight. Nonetheless, both genders indicated that they had not gone without food for 24 hours or more to lose weight.

Table 7.10: Frequency and percentage of body weight for male respondents

Question		Frequency	Percent
Q:32 How do you describe your weight?	Very underweight	61	14.1
	Slightly underweight	29	6.7
	About the right weight	189	43.9
	Slightly overweight	126	29.2
	Very overweight	26	6.0
	Missed	1	0.1
Total		432	100
Q:33 Which of the following are you trying to do about your weight?	Lose weight	212	49.1
	Gain weight	95	22.0
	Stay the same weight	108	25.0
	Not trying to do anything	17	3.9
Total		432	100.0
Q:34 During the past 30 days, did you exercise to lose weight or to keep from gaining weight?	Yes	224	51.9
	No	204	47.2
	Missed	4	0.9
Total		432	100
Q:35 During the past 30 days, did you eat less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight?	Yes	184	42.6
	No	247	57.2
	Missed	1	0.2
Total		432	100
Q:36 During the past 30 days, did you go without eating for 24 hours or more to lose weight or to keep from gaining weight?	Yes	66	15.3
	No	363	84.0
	Missed	3	0.7
Total		432	100

Table 7.11 frequency and percentage of body weight for female respondents

Question		Frequency	Percent
Q:32 How do you describe your weight?	Very underweight	32	11.0
	Slightly underweight	10	3.4
	About the right weight	150	51.5
	Slightly overweight	94	32.3
	Very overweight	5	1.7
Total		291	100.0
Q:33 Which of the following are you trying to do about your weight?	Lose weight	157	54.0
	Gain weight	42	14.4
	Stay the same weight	72	24.7
	Not trying to do anything	20	6.9
Total		291	100.0
Q:34 During the past 30 days, did you exercise to lose weight or to keep from gaining weight?	Yes	145	49.8
	No	146	50.2
Total		291	100.0
Q:35 During the past 30 days, did you eat less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight?	Yes	160	55.0
	No	131	45.0
Total		291	100.0
Q:36 During the past 30 days, did you go without eating for 24 hours or more to lose weight or to keep from gaining weight?	Yes	60	20.6
	No	231	79.4
Total		291	100.0

7.3.7 Unhealthy dietary behaviours

Table 7.12 shows the frequency and percentages in relation to diet for all respondents, with Table 7.13 showing male responses and Table 7.14 showing female responses.

The Mean number of days eating breakfast each week is 5.23. However, when it comes to eating at fast food restaurants, the Mean is 4.13 days per week and this could be considered as a risk for the long term health of the students. However, female respondents did not eat at fast food restaurants frequent as often as their male counterparts, indicating that female students are at a lower risk, which might be a result of the restrictions on females eating outside their homes without being with relatives and therefore female students have less chance than male students to indulge in fast food habits.

Table 7.12: Mean scores on diet for all respondents

Question	N	Minimum	Maximum	Mean
Q:37 How many of the past 7 days did you eat breakfast?	720	1	7	5.23
Q: 38 During the past 7 days, how many times did you eat at a fast food restaurant?	718	1	15	4.13

Table 7.13: Mean scores on diet aspects for male respondents

Question	N	Minimum	Maximum	Mean
Q:37 How many of the past 7 days did you eat breakfast?	430	1	7	5.00
Q:38 During the past 7 days, how many times did you eat at a fast food restaurant?	430	1	15	4.65

Table 7.14: Mean scores on diet aspects for female respondents

Question	N	Minimum	Maximum	Mean
Q:37 How many of the past 7 days did you eat breakfast?	291	1	7	5.58
Q:38 During the past 7 days, how many times did you eat at a fast food restaurant?	289	1	14	3.23

Table 7.15 shows the percentages of students who ate fruit, green salad and drinking soft drinks, such as Coke, Pepsi or Sprite. Almost half (45.4%) of the students ate fruit only one to three times a week and this dropped to 37.4% for green salad. However, 24.2% and 28.7% of students totally ignored fruit and salad respectively as part of their diet. This pattern of eating healthy foodstuffs can be considered a risk as fruit and green salad are necessary for a healthy diet. Significantly, only 15% stated that they did not have a soft drink in the past week, most of them reported having soft drinks one to three times a week. Overall, 34% of all respondents reported having soft drinks at least once per day.

Table 7.15: Aspects of diet

	Question (Q :39) During the past 7 days, how many times did you eat fruit?	Question (Q:40) During the past 7 days, how many times did you eat green salad?	Question (Q:41) During the past 7 days, how many times did you drink soft drinks such as Coke, Pepsi, or Sprite?
Did not consume	24.2	28.7	15.0
1 to 3 times per week	45.4	37.4	33.1
4 to 6 times per week	11.1	15.0	18.1
1 time per day	12.9	14.4	16.3
2 times per day	5.3	3.0	11.5
3 times or more per day	1.1	1.5	6.0
Total	100	100	100

7.3.8 Physical inactivity

Tables 7.16, 7.17, 7.18 show the Mean scores in relation to physical inactivity. The Mean value of all the three items is small (3.4). It shows that the students were not physically active which indicates high risk behaviour in terms of their health. Physical activity aspects differed by gender, for example, males spent more days (Mean=3.7) than females (mean=3.45). Further, males spent more time (Mean=3.9) on doing exercise to strengthen their muscles compared to females (Mean =2.8). Both genders reported spending on average similar times in physical activities for at least 20 minutes.

Table 7.16: Mean scores on physical activities aspects

Question	N	Minimum	Maximum	Mean
Q:42 During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?	722	1	7	3.59
Q:43 On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as football, running, swimming, or similar aerobic activities?	722	1	7	3.21
Q:44 On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	722	1	7	3.51

Table 7.17: Mean scores of physical activities aspects for male respondents

Question	N	Minimum	Maximum	Mean
Q:42 During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?	431	1	7	3.66
Q:43 On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as football, running, swimming, or similar aerobic activities?	432	1	7	3.26
Q:44 On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	427	1	7	3.87

Table 7.18: Mean scores on physical activity aspects for female respondents

Question	N	Minimum	Maximum	Mean
Q:42 During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?	291	1	7	3.45
Q:43 On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as football, running, swimming, or similar aerobic activities?	291	1	7	3.05
Q:44 On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	291	1	7	2.84

However, Table 7.19 indicates that most students watched TV for only about one hour per day and nearly half of the students did not play video or computer games, or use a computer for something that is not school work. However, it is possible that respondents were spending much time sitting with friends or family members instead of being physically active.

Table 7.19: Percentage of some aspects of sedentary activities

	Question (Q:45) On an average school day, how many hours do you watch TV?	Question (Q:46) On an average school day, how many hours do you play video or computer games or use a computer for something that is not school work
Did not do	9.8	40.6
1 hour per day	34.3	21.2
2 hours per day	23.4	14.4
3 hours per day	14.7	10.0
4 hours per day	7.9	4.7
5 hours or more per day	9.8	9.0
Total	100	100

7.3.9 Sexual behaviours that contribute to sexually transmitted diseases

Generally, most of the students were not aware of STIs (See Figure 7.10), see Table 35 in the Appendix, which is reflected in their responses which indicate that 68% of females and 64% of males had not received information about STIs in schools (Q50). On the other hand, both genders seemed to have fairly similar levels of STI awareness, although at low levels. For instance, 29% of the females said yes to having received information about STIs, compared to 32% of males (See Tables 36 and 37 in Appendix). However, some students were not sure about having received information about STI awareness; these were 3% female and 4% male (See Graph 6.10), see Tables 35, 36 and 37 in the Appendix.

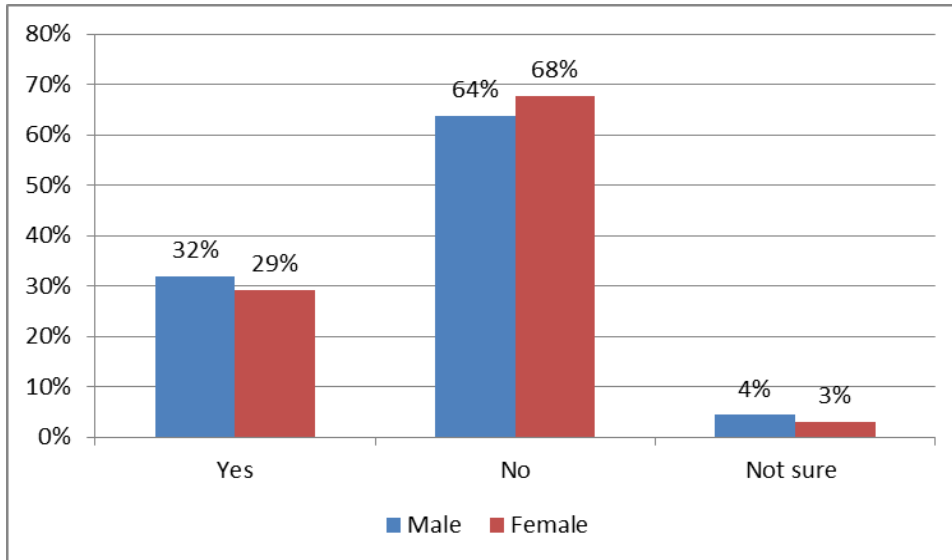


Figure 7.10: General awareness of STIs in schools

Schools are trying to make students aware of the major STIs; that is, HIV/AIDS and Hepatitis, although on a lower scale. For instance, as seen in Figure 7.11 (See Tables 36 and 37 in Appendix), 47% of males and 46.4% of the females reported having been taught about HIV infection in schools. On the other hand, 21.5% of males and 32.3% of females reported having been taught about hepatitis in school. In both instances, females seem to be more knowledgeable about HIV/AIDS and hepatitis than males, although the differences look insignificant.

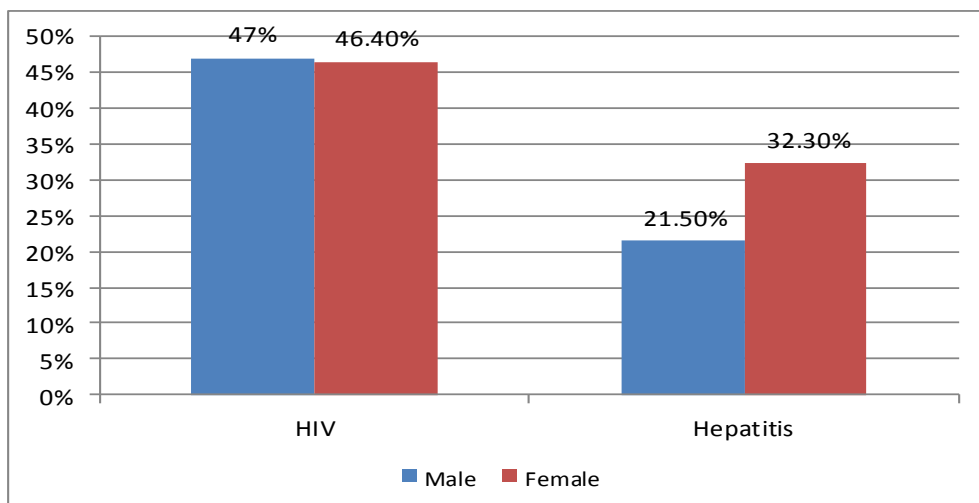


Figure 7.11: STI level of awareness in schools

Further analysis shows that even when some students were aware of STIs, a significant number of males and females had not been tested for such diseases. As seen from Figure 7.12 (See Tables 36 and 37 in Appendix), 95.5% of the females reported never having been tested for STIs compared to 4.1% who indicated yes. On the other hand, from Figure 7.13, 95.1 % of the males had never been tested for STIs while only 4.2% had been tested.

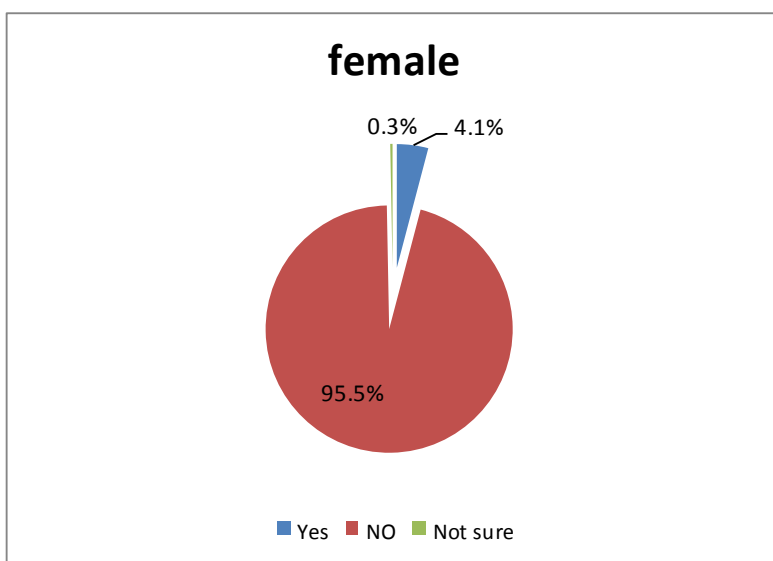


Figure 7.12: level of HIV/AIDS testing among female respondents

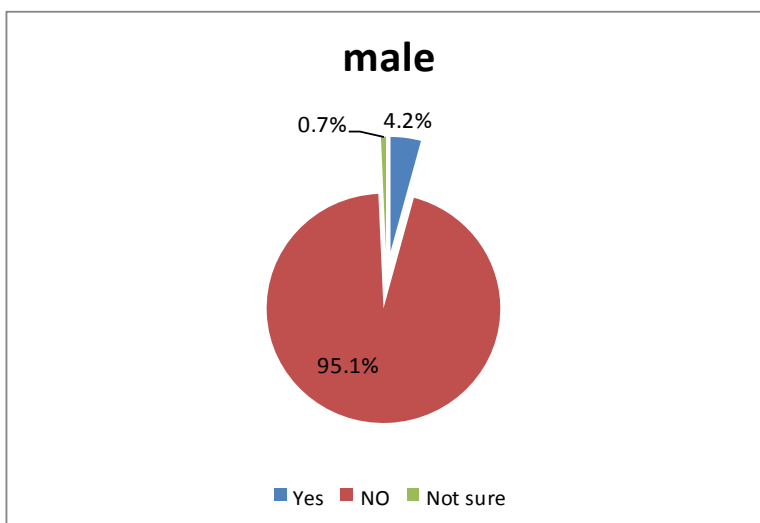


Figure 7.13: Level of HIV/AIDS testing among male respondents

7.3.10 Students' risk attitude and risk taking activities

This section includes data for male and female respondents. However, male respondents were only asked about particular activities (Q51A-F) which were not available for female respondents because of the social restrictions. However, Q52 asked to both male and female respondents to evaluate themselves about risk taking activities and their attitude towards risk. The activities for risk taking included participating in scuba diving, auto racing, motorcycle-racing, thrill-seeking and martial arts. Table 7.20 shows that most of the male students did not get involved in these types of risk taking activity. For instance, only 23.7 % of the males were involved in scuba diving, while 19.5% took part in auto racing. Also, only 4.9% of males reported being involved in motorcycle racing while, 38.1% in thrill seeking. Those training in martial arts were only 21.6% of the males (see Table 7.20). Several studies have used a 10 point scale to measure risk attitude among individuals (Gloede et al., 2011, Ding et al., 2010, Rohrmann, 2005) . However, on a ten point scale, overall all respondents have a Mean score of 4.21 (see Table 7.21), with males having a Mean score of 4.82 of themselves as risk takers compared to the females' score of 3.29 (see Tables 7.22 and 7.23). This implies that both males and females considered themselves as moderate risk takers, although perceptions of risk taking was higher among male respondents.

Table 7.20: Frequency and percentage of risk taking activities for male respondents

Which of the following activities have you done:		Frequency	Percent
Q:51A: Scuba diving	Yes	102	23.7
	No	329	76.3
Total		431	100
Q:51B: Auto racing	Yes	84	19.5
	No	327	75.9
Total		431	100
Q:51C: Motorcycle racing	Yes	21	4.9

	No	410	95.1
Total		431	100
Q:51D: Thrill-seeking	Yes	164	38.1
	No	267	61.9
Total		431	100
Q:51E: Doing martial arts	Yes	93	21.6
	No	338	78.4
Total		431	100
Q:51F: None of these	Yes	120	27.8
	No	311	72.2
Total		431	100

Table 7.21: Mean of a self-assessment of all respondents risk attitude

Question	N	Minimum	Maximum	Mean	SD	Interpretation
Q:52 To what extent do you consider yourself to be a risk-taker?	715	1	10	4.21	2.46	Moderate

Table 7.22: Mean of a self-assessment of male respondents risk attitude

Question	N	Minimum	Maximum	Mean	SD	Interpretation
Q:52 To what extent do you consider yourself to be a risk-taker?	427	1	10	4.82	2.55	Moderate

Table 7.23: Mean of a self-assessment of female respondents risk attitude

Question	N	Minimum	Maximum	Mean	SD	Interpretation
Q:52 To what extent do you consider yourself to be a risk-taker?	289	1	10	3.29	1.99	Low

7.4 Summary of the results

Descriptive statistics have been used in this chapter to explain the respondents' profiles and to answer the research questions. Ten major aspects have been covered, which included safety, violence, sad feelings, smoking, drug use and alcohol, body weight, diet, physical inactivity, transmitted disease and students' risk attitudes.

Demographic data have disclosed that two thirds of the respondents were male and one third female. Most of the respondents were living with their parents and the Mean

age was approximately 21 years. The data showed that the respondents spent an average of 2.5 years at University X and the academic achievement was good with a Mean of 3.61 out of 5.

The outcomes in safety aspects have shown that the respondents rarely wore seat belts while riding in cars with someone else. Female respondents showed higher risk in this area than male respondents. The outcomes revealed that a minority of respondents were carrying weapons but for those who did so, they had been doing so for about half of their time. However, both genders who admitted carrying weapons did so on an average of 10 to 15 days out of 30 days. It was also revealed that female respondents were involved in physical fights more than male respondents.

In relation to sad feelings, two thirds of the respondents disclosed that they had been sad or felt hopeless in the past 12 months with just over 1 in 3 of them tending to speak to their friends and 1 in 4 keeping it to themselves.

Regarding smoking behaviour, nearly two thirds of the respondents (64.8%) claimed that they tried smoking even one or two puffs. Among the students who said they were cigarette smokers, less than 20% tried to quit. Data about smoking shows that males are slightly higher users of cigarettes than females. In addition, it has been found that respondents started smoking as teenagers, with a Mean age of 17.26 years old. Males tended to take risks by smoking cigarettes earlier than females. Moreover, taking moassel has been discovered to be more popular than shisha among the respondents and even more than cigarettes. Data about drugs, alcohol and khat showed that respondents were at low risk levels; however, 25% of all respondents stated that they met someone who had drunk alcohol.

Data on body weight showed that about half of the respondents felt that they were the right weight. Diet data show that the respondents ate fast food on average four days a week, with female respondents being at lower risk as they reported lower frequency. On the other hand, about a quarter of the respondents were not eating fruit and green salad. More than a third of the respondents admitted that they drank soft drinks once a day or more.

With regard to STIs, data show that just under half the respondents have not been taught about HIV/AIDS and two thirds have not been taught about hepatitis and other sexually transmitted diseases.

Finally, the data regarding the students' risk attitude and risk taking activities reveal that about one fourth of the students were engaged in some risk activities, such as scuba diving, thrill seeking and auto racing.

Nevertheless, it has been found that the level of risk attitude for all respondents was moderate (a Mean score of 4.21 for both males and females). However, data from male respondents show that they were more likely to be high risk takers (a Mean score of 4.82) than their female counterparts (a Mean score of 3.29) with respect to all the categories.

Chapter 8 : Qualitative findings

8.1 Introduction

In March 2014, a total of seventeen interviewees, who were studying in the University X in Saudi Arabia, were interviewed about HRBs. Among them there were ten female and seven male interviewees. The researcher and his female colleague conducted interviews in the Arabic language that were audio-recorded and then transcribed. The interviews lasted between 25 to 36 minutes (see Chapter 6, Section 6.9 for detailed procedures of interviews) and contained questions to explore students' opinions about the prevalence of HRBs at the University X and associated reasons for these behaviours. The questions related to personal, peer, family, community and university issues. A few examples of the interview questions are provided below (see Appendix 7 for the complete list of questions used in the interviews):

- What do you think the major HRBs among students at this university? (state of HRBs)
- How does self-esteem of students help avoid HRBs? (personal reasons for HRBs)
- Do you think that the peers at this university influence others to be engaged in HRBs? If so, how do you think they do that? (peer-related reasons for HRBs)
- What could our Saudi community bodies or sectors do to improve the university students' health and lifestyle behaviours? (community-related reasons for HRBs).

After conducting the interviews, the researcher transcribed the audio recordings and translated those into English (see Appendices 12 and 13 for the sample Arabic transcription and its English translation). Then, the data were coded and categorised in several themes and sub-themes for reporting.

8.2 Data coding and reporting procedures

As the responses were based on specific questions, it was possible to code according to the objective of each interview question. The researcher therefore coded the theme and subthemes according to the objective of the question by highlighting the printed transcriptions with different colours. For identifying the themes and sub-themes easily, first he categorised the themes and collated those for different themes and sub-themes (see the detailed data coding procedures in Chapter 6, Section 6.10). In order to ensure the anonymity of the interviewees, numbers and letters were used instead of their real names while coding and presenting interview data. For example, 3F refers to the third interviewee who is a female, and 4M is the fourth interviewee who is a male.

The objectives of the interview questions were to obtain the research participants' opinions about the state of HRBs among the student population of the University X and the reasons why students were involved and engage in HRBs. Therefore, responses of the participants were mainly on the following two themes:

- state of HRBs
- reasons for HRBs

(Please refer to the Definitions and Abbreviations section in page XIII for the definitions of 'state' and 'reasons')

Responses about the state of HRBs provided information on the types of HRBs and the levels of their engagement by the students of the University X. These findings are presented in Section 8.3.1 of this Chapter.

The reasons influencing the engagement with HRBs among the students of the University X were grouped under five HRB factors, namely self, family, university, peers and community. These factors emerged from the literature review, including theories and models from multiple disciplines (see Section 3.4 of Chapter 3 and Chapter 5). Section 8.3.2 of this chapter introduces briefly this area while Section 8.3.3 answers the research question 2 of this thesis.

The identified reasons in the four mentioned factors reflect two major aspects of health risk behaviour: firstly, the reasons why University X students are involved in HRBs and secondly, the reasons why they are engaging with some HRBs more than others. The reasons for University X students' involvement in the HRBs answer research question 2. Similarly, interviewees' information on why they consider students to engage in some HRBs more than others answers research question 3. The reasons are reported in Section 8.3.3 of this chapter.

The data on 'university and peers' explains the influences of the University X on students' HRBs and answers research question 4, which is elaborated in Section 8.3.3 of this chapter.

A meta-analysis of the qualitative data revealed features that were interrelated within the responses and these form two overarching superordinate themes that are categorised as a) gender-based differences and b) levels. These themes are presented in Section 8.4 of this chapter (see Section 6.10.1 of Chapter 6 for the description of the procedures).

Whereas the quantitative data gained through the survey questionnaire mainly answers the Research Question 1 (see Chapter 7 for the detailed description), the

interview-based qualitative data provided valuable information to explore all the research questions. However, for achieving greater perspectives this qualitative information is later triangulated with the quantitative data gained from the survey (see Chapter 6, Section 6.10.2 for the detailed procedure). These two datasets are compared and analysed together in the Discussion Chapter of this thesis.

8.3 Findings

In this section, the interview findings are presented in three sections. Firstly, the state of HRBs is presented. Thereafter, the risk factors are briefly explained and how they were categorised of as a result of the literature review. The reasons are further explored within each identified factor. Finally, a meta-analysis of the data revealed two superordinate themes that transcended the factors and reasons, but illustrate the interconnections between these categorisations that influence engagement in HRBs by the students at University X. These are gender-based differences and three macro levels of influence.

8.3.1 State of HRBs in University X

One of the initial questions ‘what do you think are the major HRBs among the students at this university?’ was mainly used to gain a general understanding of students’ opinions about the state of HRBs in the University X. The interviews revealed that students were thought to engage in various HRBs. The prevalence of HRBs in the University X can be realised by the types of HRBs the interviewees mentioned in their responses. However, all the types were not equally mentioned by all the interviewees, and therefore the prevalence of HRBs is reported using the following schema:

- ‘commonly seen’ if the type is mentioned by 13 or above interviewees
- ‘generally seen’ if the type is mentioned by 9 to 12 interviewees
- ‘sometimes seen’ if the type is mentioned by 5 to 8 interviewees
- ‘rarely seen’ if the type is mentioned by 1 to 4 interviewees

The findings are as follows:

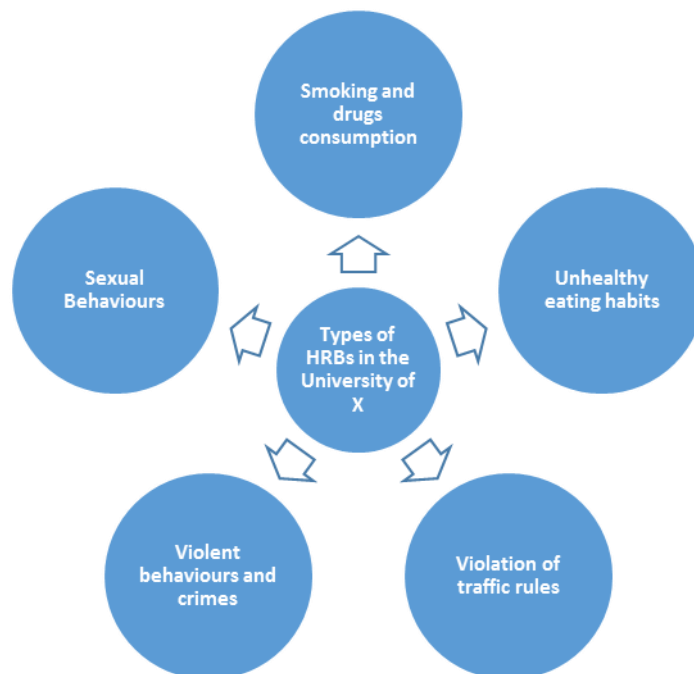


Figure 8.1: Types of HRBs among the students

a) Smoking and drugs consumption

The interviewees reported that smoking and drug consumption were commonly seen among the students of the University X. Both male and female students took tobacco in the forms such as a cigarette, Moassal, Shisha and Snuff (M4, M6 and F7). Female

students generally took Moassal, Shisha and Snuff, and some of them chewed Khat (F6). Levels of smoking were so high that M3 commented that he is 'very annoyed by the density of smoking inside the university building'. M3 also reported that some 'male and female students especially those who live at the university accommodation regularly take drugs'. Another point was mentioned by F6 that the students of this university who travel abroad without their families easily become a smoker or drug consumer.

b) Unhealthy eating habits and physical inactivity

Unhealthy dietary behaviours were also reported as commonly seen HRBs among the students of the University X. Many students did not follow any regular timetable for taking their food (F9) and while staying at the university they 'love to take rich oily food' (F6). M5 reported that there were many students who were continuously consuming the same type of junk food which are harmful for them. M6 and F1 indicated that there is a high number of obese students at the University X which relates to their unhealthy dietary practice. In this respect F8 said that 'imagine that young females cannot climb stairs'. While talking about the outcomes of this type of HRBs F2, M1 and M7 mentioned that, although many students consumed high calorie food at this university, they did not do regular physical exercise; rather they stayed physically inactive.

c) Violation of traffic rules

Violation of traffic rules is another form of HRB which is generally seen among many students of the University X. This type of behaviour is mainly limited to the male

students as the females are not allowed to drive in Saudi Arabia. However, females often 'do not wear a seat belt while traveling' and as a result suffer from vehicle injuries (F4, F9). M6 reported that vehicle injuries in Saudi Arabia are frequent, 'but students do not seem to be aware of this' (M6). He also mentioned that the traffic rules are not properly enforced by the police, which may be one of the reasons for this risky behaviour. M3 added that 'many students do not have a driving license and many do not follow the traffic rules and regulations'. Moreover, reckless driving by university students in Saudi Arabia can be often seen because of the 'show-off tendency and the act of heroism considered by these [Saudi] youths' (M4).

d) Violent behaviours and crimes

Students of the University X are thought to be sometimes involved in violent behaviours and criminal acts. The volume of these activities is not high, but is noticeable within and outside of the university premises. As a cultural practice, many students carry weapons (for example, a knife) which 'they show or use while in a heated argument with others or in a physical fight' (M2). Some female students have also been seen to be engaged in physical fights for 'silly reasons' (F3). Both male and female interviewees (F6, M1 and M6) mentioned that many students shout in the university premises and show anger in 'harsh and impolite' manners. F10 reported that, she is 'quite upset seeing how intolerant some of her university mates can be'.

e) Sexual Behaviours

The interview data show that different sexual behaviour related HRBs are thought to be rarely evident among the students of the University X. M2, M7 and F1 mentioned the presence of sexual diseases among a few students. M7 showed his worries about

the increasing number of 'illegal relationship' among male and female students which according to him is 'anti-religion and against the long Arabian culture'. F2 mentioned that she is aware of one case of homosexuality between girls and believed there might be more cases like that. While the interviewees were asked about the reasons for sexual HRB, F1 said it is because of the invasion of Western culture and M6 pointed to students' frequent visits to foreign countries alone.

8.3.2 Risk Factors of HRBs

Four risk factors were identified as a result of a review of the literature, which included a critique of associated theories and models (see Chapter 5). The factors were classified as: self/personal; family; university peers; and community. However, the interviews highlighted many reasons for engagement in HRBs among the students of the University X. Even though some reasons could be attributed to more than one factor, the reasons were subsequently classified under one of the four factors depending on which factor was most appropriate (see Figure 8.2 below). The researcher then critically explored the reasons for HRBs engagement within each of these factors.

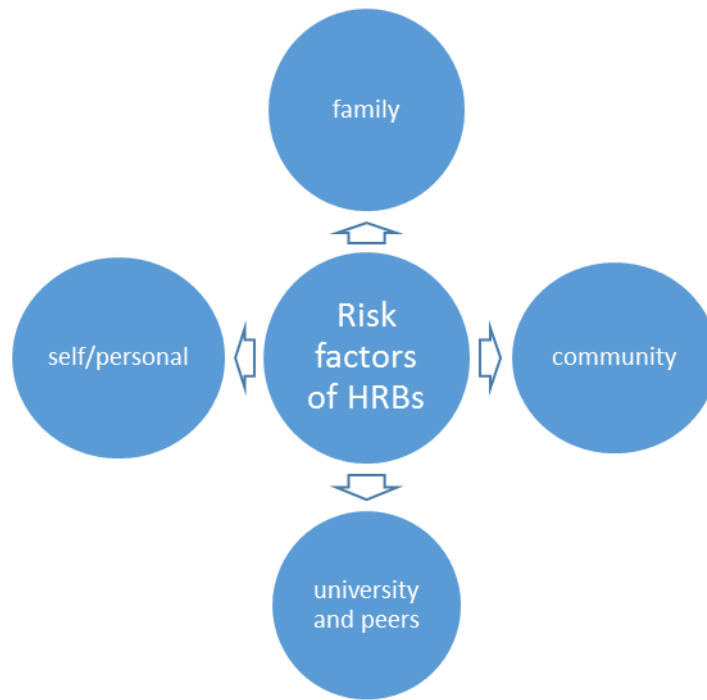


Figure 8.2: Risk factors responsible for HRBs among students at University X

Analysis of the data revealed that each of the factors (self, family, social community, and university and peers) has several associated reasons for the engagement with HRBs. A list of the aspects of each factor is provided in the next section (Section 8.3.3) and they are reported with references to the interview participants' responses. These data explain the reasons under the four factors which influence students to engage in various HRBs and answers the research questions 2 and 3 of this thesis ('why are some students at University X engaging in some health risk behaviours more than other students?' and 'why are some students at University X engaging in some health risk behaviour more than other behaviours?'). Although the reasons are classified within four categories, by analysing their characteristics it is seen that they are often interrelated. For example, low self-esteem is reported as the reason for 'self' factor which can be developed from various aspects of the family, community and university factors.

8.3.3 Reasons for HRBs involvement

Based on the four risk factors namely self, family, community, and university and peers the associated reasons for HRB engagement among the students of the University X are reported below.

a) Self/personal reasons

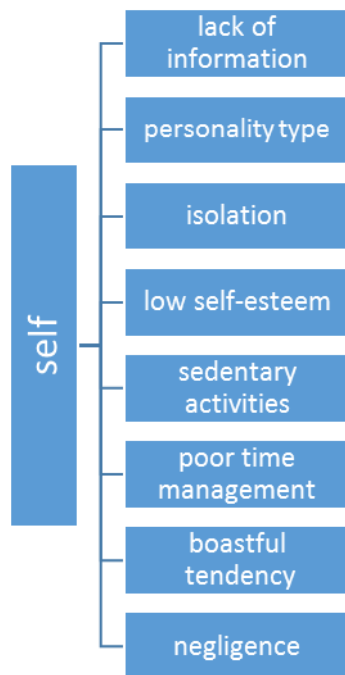


Figure 8.3: Reasons within the self/personal factor responsible for HRBs

According to the interview data, a number of personal reasons, such as personal knowledge, behaviours and personality type, are responsible for the students' involvement in HRBs. Lack of information about HRBs is regarded as a reason for a range of risky behaviours, including dangerous driving. For example, M3 mentioned that 'there is a lack of education in the society about the disobedience of laws and regulations [...of driving]'. Similarly, M5 said that 'unhealthy diet is very common

among Saudi youths as health and nutrition education in the typical Saudi Arabian family is largely absent’.

Another reason is the student’s personality type. In this regard, F6 thought that the ‘attitudes of the individuals and the surrounding environment are responsible for students’ engagement in HRBs’, whilst M6 mentioned that ‘the main motivator ... may be the difficult situations that the students experience’. Therefore, generally engagement in HRBs by university students appears to be a personal decision (F6). M5 mentioned that students who lack social skills due to extreme isolation from the community before starting their degree, may more easily choose to smoke any type of tobacco, whilst M6 thought that low self-esteem causes some students to engage in HRBs. Conversely, some of these students are thought to be involved in risky activities in order to improve their self-esteem (M2). Interview participants also mentioned that some students are bold or fearless in doing HRBs because ‘they want to be praised or admired by their peers’ (F9), thus raising their self-esteem. F3 thought that this went further with students wanting to be noticed for their risky behaviour and its associated glamour, as she said,

... most of the current female smokers are doing so because they want to be famous and show how modernised or civilised they are ... that is the influence of the media as they watch foreign channels and see foreign women smoking... (F3)

Personal enjoyment was also regarded as a reason for engagement in HRBs, as some students considered that university life was the only suitable time to be engaged in HRBs ‘because there will be no chance to cheer themselves up once they have the responsibilities of marriage and a family’ (M5).

Many students were thought to have problems in managing their time tables and in identifying priorities (M4), which led them to be less interested and have an unsuccessful academic life, which consequently resulted in HRB engagement. Some students were also thought to spend a high amount of time using electronic devices to browse the Internet and chat with people all around the world which is an influence on their HRB engagement (M7). According to M7, 'because of the Internet, students are exposed to pornography and bad culture which do not go with Saudi tradition and values'. F3 also mentioned that many Saudi university students spend long hours for 'chatting or browsing the Internet' and learn many 'bad habits from their foreign friends and connections'.

b)Family reasons

... although the majority of families [... in Saudi Arabia] have respectful relationships, there are some students who are under the negative influence of their families ... the structure of some families have changed and therefore children are likely to indulge in HRBs especially if their parents consume drugs or are involved in violence or have unstable relationships... (M5)

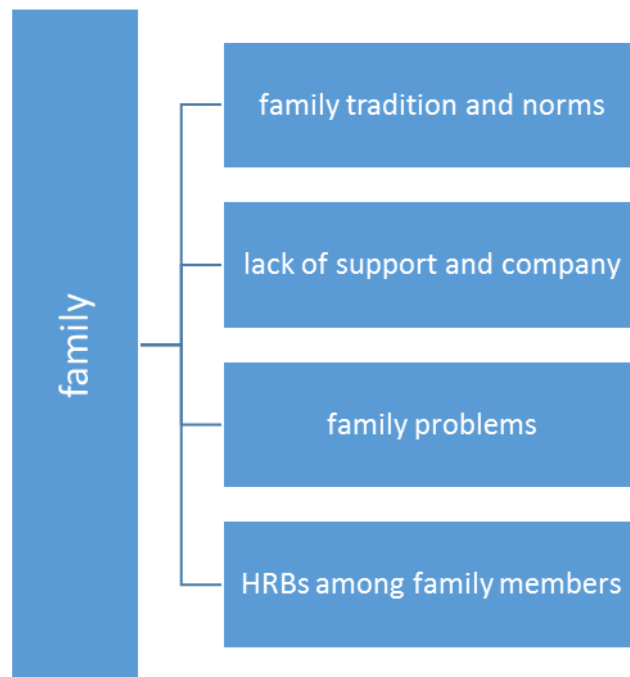


Figure 8.4: Reasons within family factor responsible for HRBs

The interviewees reported four family related reasons which are responsible for influencing students of the University X to engage with HRBs (see Figure 8.4).

Family tradition and norms were thought to negatively influence students' behaviour in several ways. Firstly, some families are extremely controlling and this can cause a reverse reaction resulting in engagement of HRBs (M7), whilst M6 considered anxiousness as 'a reflection of the family environment' and such anxiety may result in risky behaviour. Furthermore, M2 and F3 mentioned the excessive pressure from family members for high performance in academic and social life, which can cause engagement in HRBs. As M2 mentioned, 'the demand of having to keep their families blessed with regards to their achievements ... they do not like to be stigmatised for being a failure in their studies'.

Secondly, interview data revealed that if any family members are involved in problems, such as violence between parents or child abuse (F3), if they are drug addicts such as consuming alcohol (M6) or other drugs (F2), then the children may also become engaged in similar HRBs, such as drug taking or showing a violent attitude to others (M2 and M7). This influence of other family members may mean that children become accustomed to HRBs and readily engage in them without fear of the consequences from their family. According to M3, in some families there are many risky behaviours that are a 'family tradition' and practised by many of the family members for many years.

Thirdly, the social values and attitudes of a family with regard to gender may also be reasons for engaging in HRBs; for example, F3 thought that aggressive behaviour may be a result of upbringing, as she suggested, 'a family who has a boy always fills his mind from an early age to be brave and aggressive with anyone who tries to annoy him or any of his female family members'.

Fourthly, a lack of pure religious beliefs or affiliation in a family was thought to negatively influence the children of such a family, so that they may indulge in HRBs (M5 and F2).

Finally, a lack of family support and company is another reason for HRBs engagement. According to M1, the main reason why students start practising HRBs is 'because of an emotional vacuum' in their family life. Some parents are not well aware of what their children are doing in academic and social life and, in contrast, some parents do not accept low academic or social performances from their children (F9). M7 expressed his frustration by stating that 'we grow up in families that do not encourage and assist [in

our educational activities and future plans]... and community and schools do not promote that as well'. Lack of family support in other ways may cause risky behaviour; for example, in a great number of families of Saudi University students, the mothers have jobs and therefore they do not give enough time for looking after their children, particularly in providing healthy food or by advising on healthy life style (F9). This causes HRBs such as unhealthy dietary habits that may result in the high levels of obesity among the students of the University X. Conversely, interviewees thought that in some cases families know that their child is involved in HRBs, but find excuses for him/her and continue to support them with their social or tribal power (M5). Therefore, 'most university students, females and males, are aware of the potential outcomes [of HRBs] but they do not care anymore' (M3).

In summary, the family is a highly influential factor and this can be either positive or negative with regard to becoming engaged in HRBs. M4 thought that,

The influence of a student's family is great. So, if the family is optimal, their children will be good whatever the environment around them is, while if the family has problems, the probability of transferring the bad habits to their children is great... [Additionally,] the more the family is destabilised, the higher the probability that the student will be engaging in HRBs.

c) Community reasons

'We are influenced by the whole community around us, so there is correspondence between what is happening inside the university and outside in the community' (M6).

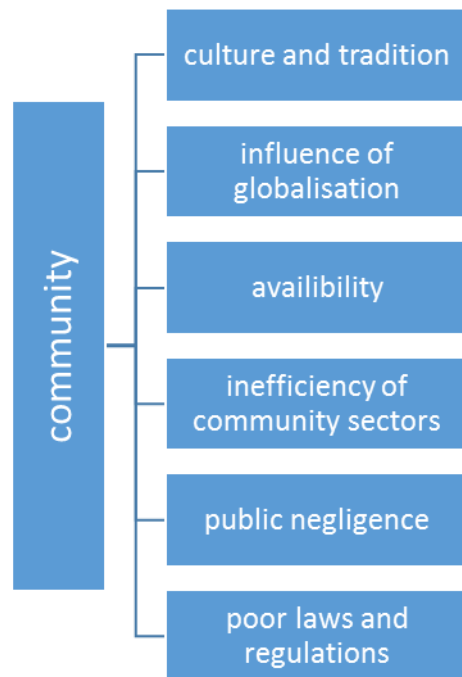


Figure 8.5: Reasons within the community factor responsible for HRBs

The interview participants mentioned that they were greatly affected by their surrounding environment because they were part of the greater city population (M4). According to M2, the community around the students was very important and if it challenged HRBs, it will prevent students from engaging in them. The interviewees mentioned six community related reasons which may influence HRBs among the students of the University X.

The first reason the interviewees mentioned is the community culture and tradition of Saudi Arabia. Because of the strong Islamic faith-based society and strict traditional social rules, most Saudi families maintain strong ties among family members (F2). However, M1 voiced the view that Saudi culture and values were becoming less predominant than in the past and that this may cause some people to engage with HRBs; as he said, ‘there is a decline in the values and norms among the majority of

students and youths of the society'. However, he went on to suggest that risky behaviour is more likely to be tolerated in males than females because of the male-orientated Saudi society and therefore, 'if a young male does something wrong they are lenient towards him, while it is not acceptable for women to commit sins as she brings shame and scandal to her family and tribe' (M1). As a result, in the Saudi context, female students are likely to take less risk because of direct or indirect instructions from families to keep themselves pure (F4). This situation was supported by (F10) in the following statement:

... we are advised from an early age not to take any risky behaviours or be involved in any sort of harsh activities that are just taken for granted by men ... the more we are involved in risky activities, the more we mix with men and therefore lessen our faith ... society is against these trends so it is very difficult for any young girl to get married if she had any experiences of HRBs...

In the Saudi context, generally men are not disgraced by their mistakes like women; they only receive sharp disapproval or criticism from their parents for any unwanted behaviours (M6). M6 described the privileges of Saudi male students in the following statement:

... boys will not be asked about their wrong behaviours or be checked by their family members because our culture and norms support that, and if he is caught practising any sort of bad behaviour, he will receive just a warning; while in the case of female students doing that the punishment will be severe ... Mostly our society believes that a female, just like a match, after burning once it is not functional anymore ... engaging in HRBs such as drugs or alcohol or sexual relationship can bring shame for the girl's family and she will not get married...

The second community related reason that is thought to be responsible for the students' involvement in HRBs is globalisation and its effects on individuals due to the

immediacy of access to different cultures and different values, such as the high usage of the internet and the widespread accessibility of various television channels. These are thought to be powerful influences within the Saudi community and encourage the uptake of HRBs (F1). M4 concurs and mentioned the high rates of smoking and homosexuality among the girls and believed that 'the community is going down in terms of social norms if compared with twenty years ago'. M4 and M6 thought that the ease with which many students can travel abroad also influenced their behaviour as they experience HRBs (such as drugs consumption, and sexual relationships) whilst they are away from home. Moreover, the high number of foreigners who stay and work in Saudi Arabia, and engage in HRBs openly, were also thought to have an impact on the levels of HRBs amongst students, as they live in the city and their influence means that various HRBs are easily spread to others such as university students (M2, M4 and F1).

At the present time in Saudi Arabia, the availability of fast food and drug substances (third reason) is thought to be higher than in the past. According to F9, young people prefer to eat fast food and drink fizzy drinks because of the ubiquity of fast food restaurants and the persuasive advertisements for them. Furthermore, due to the competition between restaurants, other HRBs are also being encouraged, as F7 mentioned: 'nowadays, luxurious restaurants and cafés compete to serve Moassal and give the opportunities for both young males and females to smoke'.

The fourth community-related reason is the inefficiency of various community sectors, such as community organisations, clubs and government Ministries (of Education, Health, Youth, Higher Education). M2 believed that in Saudi Arabia these sectors are

either absent, or 'very inactive in addressing social issues, particularly the risky and violent behaviours among the youths'. He added that

[in Saudi Arabia] government departments have no engagement in introducing comprehensive programmes to challenge HRBs among young people, including those who are at universities and higher education institutions.

In the Saudi context, a number of HRBs are prevalent because the society is lenient with regard to them (M1). Moreover, the social sectors are generally profit-oriented (M7) and weak with regard to helping students to avoid HRBs (M2). M7 found that the social and community sectors take ad hoc and conflicting efforts where there is no national incentive. Consequently, these sectors cannot make an effective and sustainable impact on the Saudi young adults' HRB-related attitudes and behaviours. There are also financial implications associated with this as the government has to allocate a high level budget for these organisations. As a result, these impractical social and community sectors seem to be a burden for both the government and the communities.

Public negligence is also thought to be a reason for the spread of HRBs among the students. As mentioned above, many responsible citizens of the Saudi community often ignore HRB practices of the youths of their society. However, (F5) considered this is due to not understanding what HRBs are, 'It is not only because they do not want to intervene, but also because of their ignorance'. A similar situation was thought to exist at the societal level, where various community sectors and government departments do not know what to do. As F2 said 'there is negligence because they have no idea how to challenge HRBs among young students and they have lack of expertise in this area'. However, M1 considered that interventions could be possible and would be effective

because in Saudi Arabia 'seniors are respected and their suggestions are often followed by all; it is therefore possible to reduce HRBs among the students if they take initiatives'.

Finally, the interview data also highlighted that there is the absence of proper laws against the HRBs in Saudi Arabia and the existing laws are not implemented well. According to M5, 'there are enough laws but enforcing them is a big problem in this country because of the corruption and the power of people over laws'. M2 mentioned that discrimination is based on social classes in implementing laws, as he said 'anyone who has relatives in the government sectors can obstruct the law and get their son or daughter off without any charge'. M6 added to this problem and expressed his frustration by saying that legislation and laws are vague and are not practical to real situations. However, F3 mentioned that 'not at all laws are inefficient, but only a few of them are enforced or implemented'.

d) University (and peers) reasons

The interviewees mentioned that the university itself is one of the strong factors for the students' engagement in HRBs. The academic and social environment of the university, their friends and the university's lack of efforts to minimise academic pressures, lead students to participate in various types of HRBs. The reasons associated to the University X are reported below.

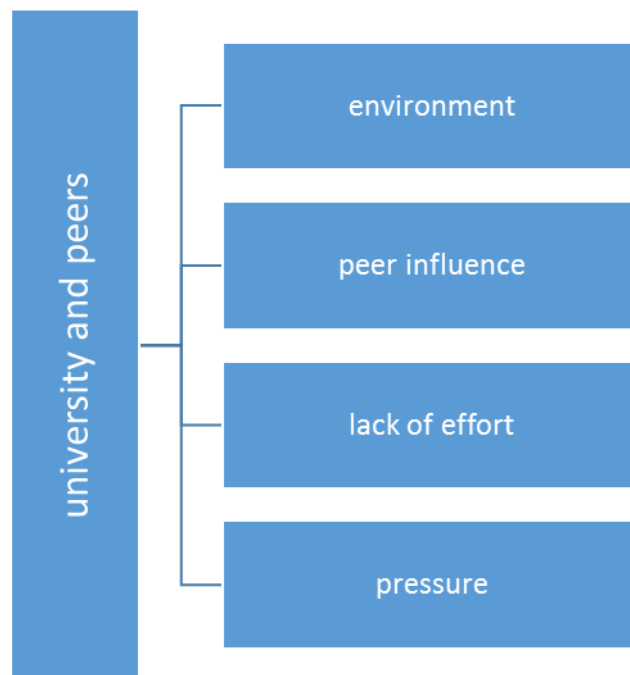


Figure 8.6: Reasons within the university (and peers) responsible for HRBs

Firstly, the academic and social environment of the University X is thought to be responsible for students' HRBs engagement. F10 thought that the university does not offer any environment for practising healthy behaviours. M5 added to this point of view by saying that the university does not provide adequate services to tackle HRBs or help students avoid them. According to him,

... the evidence is huge; look, there are too many students who lack good education about HRBs, and also the staff, they are not qualified to help students to keep away from them ... also different health, environmental, and educational services are not that good at helping students to avoid HRBs...

F2 mentioned that there is a disconnection between the university and families of students studying at the university, which results in weak family influence on their children while at the university. Consequently, many parents do not know much about the university and its systems and therefore they assume that the university is taking

all responsibilities to educate their child and promote his/her healthy behaviours there.

The interviewees also reported the strong influence of peers in involving HRBs. M6 described in the following statement how a student is influenced by his university friends for HRB participation.

Look, we spend long hours with our friends... we share everything with them. If any of our friends is a drug addict, we also gradually become interested to do what our friend does. This is how the HRBs begin at university ...

F9 considered that students coming from different backgrounds and who have already engaged in a variety HRBs attract many of their classmates to follow them and practise HRBs. M4 believed that ignoring friends is impossible and therefore any influence from friends and peers to engage with HRBs is difficult to avoid. However, he suggested that if the students are made aware about the severe impacts of HRBs, they can be kept safe from their risky friends and peers.

Interviewees also considered that there was a lack of effort on the part of the university authority to prevent and minimise HRBs among the students of the University X. M7 complained that the university does not promote healthy lifestyles in terms of education with regards to HRBs. M1 explained the situation further by the following comment,

... the university offers nothing except academic knowledge ... it is not a good environment to promote healthy behaviours ... the food canteens are unclean and not suitable for food consumption ... students smoke everywhere inside the university even in the university hospital ... they conduct some lectures for the students about drugs, Aids, smoking but the funny thing is that they do not force

students to attend them ... students do not have the motivation or the desire to do so ... the university staff and lecturers are smoking intensively inside the university buildings...

M6 showed his concern that public legislation and laws are not properly applied in the university campuses and even the university authority is reluctant to warn students about the dangers of HRBs by avoiding regular health education campaigns. Based on the university's existing situation M4 suggested that,

... the university should seek comprehensive approaches to tackle the issue ... the university must educate young students about healthy food and should not sell them fast food or unhealthy food ... it must educate people about side effects of smoking and should not allow them to smoke inside the university...

The interviewees also mentioned that they sometimes receive tremendous academic pressure from their university which makes them anxious or depressed and this then encourages them to want to practise a number of HRBs to release the tension. F1 said that 'students consume drugs especially at examination periods to reduce stress and exam fear and also drink alcohol at mixed celebrations in different resorts when they are free from family restrictions'. F9 also added to this point of view by reporting that young female students at the university take drugs to reduce the pressure of the overload from the university.

8.4 HRBs related reasons: two superordinate themes

In the previous discussion the state of HRBs among the students of the University X was reported and the HRB reasons are also elaborated in relation to the main factors influencing the engagement with HRBs. A meta-analysis (see Section 6.10.1 of Chapter

6 for the description of this analysis) of the qualitative data also revealed two clear superordinate themes within the data.

Firstly, the gender-based differences with respect to the engagement with HRBs are identified in the data (see Section 8.4.1 below). In Saudi Arabia, there is a sharp division in terms of treatment and facilities towards the male and female genders. As F2 said, 'male students are always prioritised at home and in University' and clear picture of a male dominated Saudi society is portrayed by the statements of the interviewees. The data also showed how different factors (such as family, community and university) treat male and female students differently with respect to engagement with HRBs. The findings regarding the gender focused HRBs are therefore important in this thesis.

Secondly, by analysing the HRB factors and their reasons it is seen that they do not act in isolation; rather they stem from personal to societal domains in three levels of operation: the intra-personal; public engagement; and socio-cultural (see Figure 8.8). Furthermore, the pattern indicates that an HRB can be initiated within any of these levels of operation as result of the reasons discussed in Section 8.3.3. Because the levels are interconnected, the effect of the HRB appears to result in repercussions beyond the initial starting point and may affect different factors.

For example, vehicle injuries among the university students may be caused by a 'boastful tendency' (personality reasons within the personal factor) or because of weak laws and regulations (a community factor). However, anyone's 'boastful tendency' while driving and breaking traffic rules can impact negatively on the family, community and university of that person. Furthermore engaging in one HRB may

influence the threshold for the engagement in another risky behaviour. For example, it is boastful to 'show off' in front of peers may cause smoking and drug consumption which may then result in other HRBs like violent behaviours and unsafe sex, especially when under the influence of drugs or alcohol (see Figure 8.7). The levels are discussed further in Section 8.4.2.

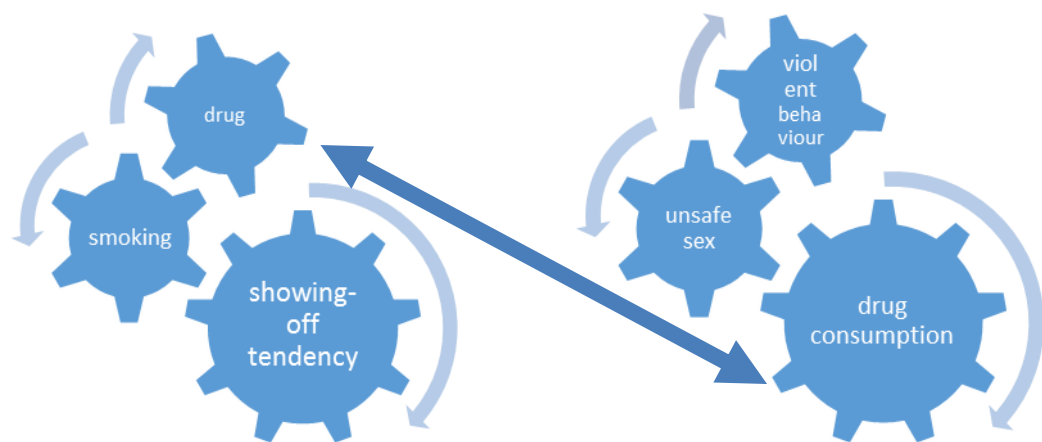


Figure 8.7: Inter-HRBs influences

The levels of HRBs and their interconnections are discussed further in Section 8.4.2 of this Chapter.

8.4.1 Gender-based differences in HRB engagement

Both male and female students were interviewed, and the results reflected a number of similarities as well as differences in the answers from each gender. Even though the number of female interviewees was more, the males provided a more significant amount of useful information. One possible reason for this is the culture in Saudi

Arabia, where the males tend to be more open-minded and forthcoming, and, as the survey dated showed, they tend to indulge more in HRBs than females. F5 clarified the situation of females in Saudi Arabia by mentioning that 'the family and society consider [... HRB- engaged] women as a burden and shameful' whereas 'male students involved in smoking or reckless driving is seen as reflecting their power and superiority'. The data also revealed that the female Saudis, generally lived 'more secluded and family-centred lives' (F3), and they were more culture-orientated (F6). F6 and F9 however mentioned that in recent years the female students in Saudi Arabia have started to become less timid and more willing to challenge societal norms.

There were gender-based differences in the impact of factors such as the individual, family, peers, community and university (see Sections 8.3.2 and 8.3.3 of this Chapter) on students' levels of engagement in HRBs. Specifically, family culture and tradition, globalisation through technology and the association with university peers affected males and females engagement in HRBs differently. Nevertheless, the perceptions and the examples provided by the male and the female interviewees about engagement in various HRBs (see Section 8.3.1) provided in Table 8.1 illustrate less gender-based differences than might be expected.

According to Table 8.1, in Saudi Arabia both the male and female university students are commonly involved in various HRBs, such as tobacco and drug consumption, rich food consumption, physical inactivity, not wearing seat-belt, engaging in physical fights, showing bad temper, participating in risky sexual activity that leads to contracting sexual infection diseases. This finding is quite surprising as Saudi Arabia is such a conservative country where women are restricted in their attendance at all

types of official jobs and social activities (particularly with men). As a male dominated society, Saudi women, particularly in their lifestyles, health related practices and behaviours, are strictly monitored and guided by the family heads, including parents and senior family members. It therefore seems difficult for any Saudi woman to be influenced by her peers, societal or community factors to be engaged in any HRBs. The presence of HRBs among the women in Saudi Arabia therefore raises the questions about where and how they develop these harmful practices, and this could be an avenue for further research.

Table 8.1: HRBs enaggment based on male and female stduents

Types of HRBs		Gender involvement
Smoking and drugs consumption	Tobacco (including cigarette, Moassal, Shisha and Snuff)	Male and female
	Drugs	Male and female
Unhealthy eating habits and physical inactivity	Do not have regular timetable	Female
	Rich oily food consumption	Male and female
	Do not do physical exercise regularly	Male and female
Violation of traffic rules	Violation of traffic rules	Male
	Reckless driving	Male
	Boastful tendency	Male
	Not wearing seat-belt	Male and female
Violent behaviours and crimes	Carrying weapons	Male
	Physical fights	Male and female
	Shouting and show anger	Male and female
Sexual Behaviours	Unsafe sex	Male and female
	Illegal relationship	Male and female

The findings also show that only the male students of the University X are involved in the violation of traffic rules, reckless driving, boastful tendency and carrying weapons. The violation of traffic rules and reckless driving by only male youths is rational and to be expected as driving is prohibited for women in Saudi Arabia and thus the HRBs related to this activity have not developed in Saudi women. According to the data, only the female students have HRBs like not having a regular timetable which may be due to two reasons. Firstly, the female students have to accomplish various household responsibilities which often hamper their planned time table. The other reason may be the conservative and male-dominated culture of the Saudi society where women's choice of work and movements are generally decided and guided by others, particularly by the males. As a result, Saudi women often lack the required confidence and freedom to work according to their own plan. The differences of HRBs among the male and female students of the University X of Saudi Arabia and the related possible reasons are discussed in further details in Chapter 9.

8.4.2 Levels of HRBs engagement

The interview data showed four major factors (personal, family, community, and university and peers) and twenty two reasons for HRBs engagement among the students (see Section 8.3.3). These factors can be categorised in three distinctive levels: from the self to society and more widely to the environment via communication and public engagement. The levels (see Figure 8.8) are termed as 'intra-personal', 'public engagement' and 'socio-cultural' and each of them can impact on the others. The reasons were mentioned by both the male and the female interviewees and it is

therefore assumed that the levels are equally applicable for both the male and the female students.

Whilst there are inevitably links between the factors and the three levels (shown in Figure 8.8 'intra-personal', 'public engagement' and 'socio-cultural'), Table 8.2 shows how the factors and respective reasons are categorised with the key associated level as a result of the findings from the analysis of the interview data.

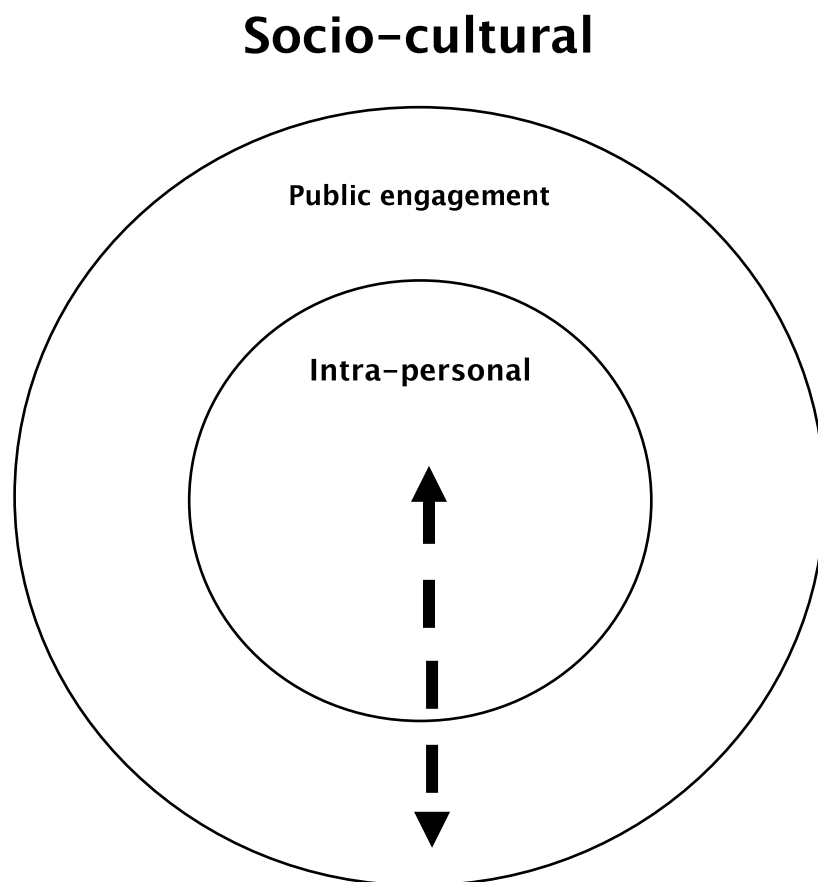


Figure 8.8: Levels of operation of HRBs influences

According to the list, various behavioural and attitude related reasons such as the personality type, low self-esteem, boastful behaviour and negligence influence the students of the University X to be engaged in various HRBs. The reasons are mainly psychological and they are related to personality types and the individual attitudes of

the students. These reasons therefore are embedded within their intra-personal level. Similarly, the socio-cultural reasons such as family tradition, influence of globalisation, insufficiency of community sectors and poor laws and regulations are also responsible for HRB engagement and activation among the students. The reasons are rooted in culture, social organisations, traditions, social structures and norms which indicate a socio-cultural level for HRB engagement. However, the HRBs of a young person can happen through various ways of social attachment and public communications such as peer influence, isolation, lack of information and lack of support and company.

Table 8.2: HRBs factors, reasons and levels

Factors	Reasons	Levels
Self	Personality type	Intra-personal
University and peers	Lack of effort	
University and peers	Pressure	
Self	Low self-esteem	
Self	Sedentary activities	
Self	Poor time management	
Self	Boastful tendency	
Self	Negligence	
Family	Family tradition and norms	socio-cultural
Family	Family problems	
Family	HRBs among family members	
Community	Culture and tradition	
Community	Influence of globalisation	
Community	Availability of fast food and drug substances	
Community	Insufficiency of community sectors	
Community	Public negligence	
Community	Poor laws and regulations	
University and peers	Environment	
Self	Lack of information	public engagement
Self	Isolation	
Family	Lack of support and company	
University and peers	Peer influence	

The relationship of these levels and their impacts on the students of the University X are further analysed in Chapter 9.

8.5 Conclusion

The qualitative data has provided information about the state of HRB participation among the students of the University X, in addition to the influencing factors and their associated reasons for engaging in risky behaviours. Interviewees mentioned a number of reasons that can impact on decisions about engaging in these risky behaviours, whilst also indicating their views about the prevalence of engagement in different HRBs. Additionally, further analysis of the data revealed two superordinate themes; firstly, the gender-based differences of the types of HRBs among the students. Secondly the wider levels of influence that represents the social ecology of the participants that are associated with different factors and reasons and how each factors and reasons are interconnected. These qualitative data supplement the survey findings (see Chapter 7) of this thesis and both sets of data are used to provide a detailed discussion in the next chapter that aims to address all the research questions.

Chapter 9 : Discussion

9.1 Introduction

Several studies (for example, Morash and Rucker, 1989, Satterfield and Schell, 1997, The Office for National Statistics, 2012) indicate the presence of varied forms of HRBs in different countries and also in social and educational settings (see Chapter 3 and 4). However, in Saudi Arabia, particularly in higher educational institutions, the extent and features of HRBs among the students have not been fully explored. This lack of knowledge may be exacerbated because the government of Saudi Arabia considers HRB-related information (particularly on drug abuse and risky sexual activities) as a potential threat to the country's positive image and thus unsuitable to disseminate publicly. As a result, the official reports of the country do not provide any information on HRBs. This thesis is therefore helpful to understand the general features about HRBs in Saudi Arabia, particularly the types, factors, reasons and the overall patterns with a specific focus on the student population in one higher educational institution.

The survey findings (discussed in Chapter 7) identified several types of HRBs and the level of risk among the students of the University X. The interview data (reported in Chapter 8) clarified what was happening in University X by explaining the reasons for students' involvement in HRBs, which are classified under the four main factors.

Together the two datasets highlight the emerging position of university students' engagement with HRBs, such as drug abuse, violence and sexual activity, which have not been explicitly investigated in any other single study in Saudi Arabia before.

Based on the quantitative (survey) and the qualitative (interviews) data the HRB types, states, factors and reasons for engagement in a Saudi university context are critically discussed by addressing the associated theories and concepts, as well as references to relevant empirical research findings. In doing so, each research question is answered and the pattern of HRBs, which is the overall aim of this thesis, are addressed.

9.1.1 Chapter structure

The overarching research question of this thesis is ‘What are the patterns of health risk behaviours among the students of University X?’ This question was explored through the following four research questions.

- (i) What is the present state of HRBs among the students at University X in Saudi Arabia?
- (ii) Why are some students at University X engaging in some HRBs more than other students?
- (iii) Why are some students at University X engaging in some HRBs more than other HRBs?
- (iv) What are the influences of University X that affect students' HRBs?

All the research questions are discussed in Section 9.2 according to the following order:

Section 9.2.1: Research Question 1 (state of HRBs)

Section 9.2.2: Research Question 2 and 3 (reasons of HRBs)

Section 9.2.3: Research Questions 4 (influence of the University X)

In Section 9.3 the discussion from each research question is synthesised to provide a critical examination of the patterns of health risk behaviours among the students of University X. In this regard the nature and the trends of the state, factors and the reasons for HRBs in University X are critically analysed.

Finally, in Section 9.4, the discussion is concluded through reflecting on all the findings of the study and their relationships to each other, which then leads to the review of the theoretical framework in the final chapter (see Chapter 10), which was initially developed and incorporated within the research methodology. Based on the findings of this research, a revised theoretical framework is provided which may offer a more accurate theoretical understanding of HRBs amongst students at University X. In addition the theoretical framework may help to inform HRBs related research more widely in Universities in Saudi Arabia and beyond.

This would support future researchers in designing effective research methodologies to conduct studies in similar areas.

9.2 Answers of the research questions

In this section the state and reasons of HRBs among the students of University X are discussed, which answers the four research questions of the thesis.

The term 'state' refers to the present situation of HRBs particularly the types and the degrees of prevalence among the students of University X. To discuss the 'types' the

different forms and activities that are considered as HRBs are listed. This answers Research Question 1.

Similarly, in this section the 'reasons' that influence University X students' involvement in various HRBs is described. In the discussion, the factors are categorised in three broad levels, namely intra-personal, socio-cultural and public engagement (see Section 8.4.2 in Chapter 8). The reason for this categorisation is to explain how different factors are associated within a level, as well as how they are linked to the other factors in a different level. The discussion of this section addresses Research Question 2.

Three aspects of HRB 'reasons', namely, why a number of students of University X are involved in several HRBs; why some HRBs are more evident there; and the reasons associated to University X for its students' HRB involvement, are also explained in 8.2.3. These three areas address Research Questions 2, 3 and 4 respectively.

9.2.1 The state of HRBs among students of University X

The presence of various HRBs, such as violation of traffic rules (Almosaed, 2004, Abou-Zeid et al., 2009), smoking and drug abuse (Wechsler et al., 1998, Al-Mohamed and Amin, 2010), sexual behaviours (Fageeh, 2008a) and unhealthy eating habits (Al-Rethaiaa et al., 2010) in Saudi Arabia were identified in previous research findings. However the types of HRBs and the level of engagement among the educated youth of Saudi Arabia, more specifically the students of Saudi higher educational institutions, has not been studied. The survey and the interview data of this thesis begin to address this gap by exploring the engagement with HRBs among the students of one Saudi University. The findings also discover the associated HRB factors and the reasons of students' HRB involvement which are discussed in Sections 9.2.2 and 9.2.3.

The survey findings and the responses of the interviews reveal that the Saudi students of the University X are engaged in five major types of HRBs, namely, violation of traffic rules, violent behaviours and crimes, smoking and drug consumption, unhealthy eating habits and physical inactivity, and sexual behaviours. The general features of these types are critiqued below.

a) Violation of traffic rules

A high number of traffic related fatalities are evident around the world (Blum and Nelson-Mmari, 2004). The severity of the casualties of road accidents are reported by the WHO (2004a) and a similar trend is seen in Saudi Arabia (see Chapter 4). According to the survey results, the most common health risk behaviour among the Saudi university students in this study is the violation of traffic rules. The interviews also confirmed the high presence of this HRB and identified several features, such as driving without a driving license or without wearing a seat belt, and the involvement in driving related crimes, such as ignoring traffic rules and driving recklessly. These findings are partly consistent with those of Bendak (2005) who revealed that, in Riyadh, the rates of traffic rule violation vary in different areas. The survey findings of this thesis show that the rates of violation of traffic rules among the students of University X are very high (see Section 7.3.1). The variances of findings of the survey with Bendak may partly be due to the differences in location of the studies and the fact that the study on which this thesis is based investigated adolescents and young people, rather than middle-aged people. Whilst Bendak (2005) highlighted the prevalence rate, he did not specifically explore the involvement of males and females in this HRB type. This study found that both young males and females are involved in the violation of traffic rules.

Although driving is not legal for women in Saudi Arabia, a high number of female youths violate traffic rules, as they do not wear a seat belt while travelling (see Sections 7.3.1 and 8.3.1).

b) Violent behaviours and crimes

In the global context, various forms of violence are common among young people (Krug et al., 2002). However, there are no reliable statistics that can show rates of violence in Saudi Arabia. Although it is believed that the level of violence is low in the country (National Society for Human Right, 2006), health professionals often report various violence-related cases (Almosaed, 2004). The survey findings appear to support Almosaed's findings; they revealed that violent behaviour and crimes among Saudi university students are high (such as physical fights 21.74% and carrying a weapon 9.83%). Engagement with this type of HRB is in the form of threatening others with weapons (for example, a knife or gun), heated arguments, shouting, using impolite words and in extreme cases involvement in physical fights. The involvement of male students is greater in most of these HRBs, as culturally women are suppressed and not allowed to socialise or move freely in the University or their society without supervision. The survey, however, showed that females are also involved in physical fights with other females, and to a greater degree than their male counterparts, which indicates that the Saudi university female students also suffer from violent behaviours and crimes.

One of the significant findings of the study is therefore that Saudi Universities maybe unsafe due to the high number of students who carry weapons as part of their traditional practice. The interviewees also indicated that this practice leads to the

involvement of several related HRBs, such as violent behaviours and physical fights.

The findings reinforce Jessor's argument that the engagement with a particular HRB often expands to others (Jessor, 1992a).

c) Smoking and drugs consumption

The rate of smoking is very high (75.57% have tried at some stage in their lives) among the University X students. However the prevalence of smoking varies according to the type of substance being smoked. According to the survey findings, the use of cigarette and tobacco is the highest, whilst interviewees said that because of the high rates of smoking, the students are also exposed to various other drugs, such as Moassal, Shisha, Snuff and Khat.

The survey data showed that a high number of female students were involved in this type of HRB (see Section 7.3.4). However, the male students were more involved and they become engaged with HRBs earlier than the female students. These findings support the previous research findings of Jarallah et al. (1999), Bassiony (2009), and Al-Huquial and Al-Turki (2006) which were conducted in the adult population outside the university setting. However, these present findings focus on the consumption of tobacco by the university students, which was ignored in the earlier studies and refute the claim of the earlier findings that, in Saudi Arabia, smokers are mainly illiterate, married and involved in manual or casual labour (Jarallah et al. 1999; Bassiony 2009). This thesis in fact provides evidence that, despite being more intelligent, better educated, perhaps having a better understanding of the health risks associated with smoking, the students of University X are still not immune to the factors, levels of influence and the reasons for smoking.

Very few respondents indicated having used drugs other than alcohol. It is imperative to interpret these findings with caution, given the sensitivity that surrounds the use of alcohol and other drugs in Saudi Arabia. Despite the anonymity of the survey, it is most likely that the figures reported here are mitigated due to legal constraints because Sharia law bans the use alcohol and other drugs. Such suppression could partly explain the inconsistency in findings between the current study and those of Al-Haqwi et al. who found significant rates of abuse of alcohol and other drugs like amphetamines, heroin and cannabis, in a Saudi Arabian city (Al-Haqwi et al., 2010). However, the findings of this research also appear to indicate that the trend of alcohol consumption and other illegal drugs is increasing amongst university students in Saudi Arabia. This finding reinforces the study finding of Ageely (2009), which showed that 21.4 % of the overall population of a region of Saudi Arabia were engaged in consuming 'Khat'. A number of interviewees also mentioned that there is a rapid growth of 'Mossal' and alcohol among the students of the University X and suggested that the impact of globalisation and the influence of foreign culture as the main reasons for this increase.

d) Unhealthy eating habits and physical inactivity

The survey findings show that the students of the University X have unhealthy eating habits and were often physically inactive which includes irregular daily routines for taking food, consumption of rich and oily food and lack of physical exercise. Skipping breakfast and consuming fast foods were the reported unhealthy dietary behaviours among the student participants, with similar proportions in terms of gender involved in this behaviour. The prevalence of fast food consumption is attributable to changes in the eating patterns among the families in Saudi Arabia, which can be characterised by

snacking and fast food consumption (Al-Rethaiaa et al., 2010). Moreover, there is an increasing change in the lifestyle in the country, where Western diets and fast food restaurants are replacing the local diets (Midhet et al., 2010, Washi and Ageib, 2010). The interview findings show that, because of the busy university schedule, staying apart from family, and entertaining friends, the university students are increasingly becoming accustomed to a Western diet and fast food.

In terms of physical inactivity, the survey results (Section 7.3.8) indicate that the research participants were physically active for less than half of their time (an average of around three days in a week). This rate is higher than the reports of other Saudi studies highlighting that the Saudi community is increasingly becoming physically inactive (see Al-Hazaa and Al-Rasheedi, 2007). The findings are however context-bound and thus may not be applicable in all the regions of the country. The city where University X is located is multi-ethnic and the university itself is more open to changes compared to other conservative cities. Besides, the University X is among the few higher educational institutes in the country which has invested in gymnasiums for each gender to encourage physical exercises. Despite this however, physical activity remains relatively low especially amongst the female students in this university.

In terms of fast food consumption and physical inactivity, a sharp difference between the male and female students of the University X is evident by the survey and interview findings. The survey findings showed that, while the male students are more engaged in consuming fast food, female students were found to be more physically inactive (see Section 7.3.7). A number of reasons for this gender-based difference were identified through the interviews (see Section 8.3.3 of Chapter 8). For example,

the main reason for the limited movement of female students is the strict conservative culture of the country where the society is highly male dominated. In fact, in Saudi Arabia, males can go out more freely, meet up with friends and so go to fast food restaurants more often than females, whilst females stay indoors unless escorted and so perhaps eat more healthily. However, the confinement of the Saudi females reduces opportunities to be physically active. In a University context, there is often a lack of physical exercise facilities for both male and female students, and due to a busy academic schedule the university students may have to regularly consume fast food.

e) Sexual Behaviours

Given the sensitivity of the aspect of sexual behaviours, relevant direct questions were avoided in the survey and the questions were restricted to knowledge levels of STIs (Sexually Transmitted Diseases) possessed by the students. The survey findings indicate that both male and female students at University X have very limited knowledge of STIs. However, this result should be interpreted with caution given that answers may be less honest because public discussion of sexual behaviours is still avoided. Nevertheless, the findings indicate the lack of knowledge of STIs among Saudi youths is problematic and is exacerbated by the limited campaigns to raise awareness about the risks of STIs (Fageeh, 2008a, Al-Malki Basim Matar, 2014). Low awareness of STIs seemed to have had an impact on the level of HIV/AIDS testing among the young adults, illustrated by there being almost no indication of HIV test uptake among the university students. This finding could imply that the respondents did not perceive themselves to be at the risk of contracting HIV, but it may also be the case that young adults fear going to testing services as it is against the Sharia law for unmarried

persons to be involved in sexual encounters (Gańczak et al., 2007). The interview findings also indicated the low rates of sexual behaviour-related HRBs, such as illegal relationships (see Section 8.3.1), but show the possibility of their rapid growth because of globalisation and the spread of Western culture. The interview data appeared to support this finding in showing that different sexual related HRBs were evident among the students, mainly in the forms of 'illegal relationships', and 'homosexuality'. In a country like Saudi Arabia, where any type of illegal relationship and homosexuality are prohibited, it is therefore really important to explore further how these HRBs are spreading among the University students. As these HRBs were mentioned by very few interviewees, it can be assumed that these are not necessarily highly prevalent among the Saudi university students. The finding, however, suggests the possibility of their existence among other age groups of Saudi people and in different locations of the country.

9.2.2 Reasons of HRBs

This section relates to research question 2: Why are some students at University X engaging in some health risk behaviours more than other students?, and research question 3: Why are some students at University X engaging in some health risk behaviours more than other behaviours?

While the research data identified the major factors and the levels of students' engagement with HRBs, they also showed the specific reasons of engagement with HRBs which originated from these factors and levels. Analysis shows that in several

cases multiple reasons originate from the same factor and levels, and many reasons are found to be interrelated and this HRB pattern is discussed in Section 9.3.

The qualitative data of this study identified three major reasons for students' engagement in HRBs and these findings address research questions 2, 3 and 4 of this thesis respectively. These are discussed below.

9.2.2.1 Reasons for students' involvement

Through analysing the survey and interview findings (Sections 7.3 and 8.3 respectively), seven major reasons are identified which are responsible for the students' involvement in HRBs in the context of University X. The reasons are:

- traditional practices
- gender
- age
- influence of other HRBs
- weak and insufficient laws and regulations
- lack of awareness
- impact of globalisation

The features of the above reasons are discussed below. These address Research Question 2: 'why are some students at University X engaging in some health risk behaviours more than other students?'

a) Traditional practices

According to 'decision-making theory' (see Chapter 5), the basis of people's choices in making decisions relies heavily on traditions and social norms (Janis and Mann, 1977,

Aikenhead, 1991, Koehler and Harvey, 2008). From the literature review and the interview findings (Chapters 3, 4 and 8), it is seen that Saudi culture is mainly dominated by strong Islamic faith and strict traditional social rules. There is also the continuation of traditional practices which cause engagement with certain HRBs. For example, in Saudi society adults often carry weapons. Historically this is a practice to show ethnic identity and to protect female siblings from any harassment. However, in this study the university students, who are young adults, have been found practising the same HRB. This would suggest that they are influenced by social and cultural norms (Elfawal, 1999). The interview findings corroborate this point by showing that this risky practice is part of the students' ethnic tradition. Similarly, physical fights among the students in Saudi Arabia are possibly connected to the tradition that encourages young adults to cope with particular life challenges, such as bullying and ethnic discrimination. The study also revealed gender differences, including tobacco use and this seems partly due to the cultural dogmas that perceive female smoking as abhorrent (Abdalla et al., 2007).

b) Gender

The survey and the interview findings indicated that male students of University X are more exposed to various HRBs, for example, risky driving and sexual behaviours. This gender-based difference of the engagement with HRBs is typical in Saudi Arabia because of the discriminatory rules and treatment towards men and women in the society, particularly the higher flexibility and freedom for men (Baki, 2004). For example, driving is not legal for women in the country, and women are also not allowed to move freely and mix with other people (particularly with men). Similarly, in

the case of smoking, male adolescents are accorded higher personal independence at younger ages compared to females, and so they have easier access to various entertainment places where smoking is regarded as an acceptable social behaviour (Taha et al., 2010). The gender differences, with males reporting slightly higher rates of physical activity relative to their female counterparts, may be due to the traditional nature of Saudi society that restricts females walking by themselves without a male to escort them. This observation therefore highlights the higher risk of physical inactivity among females at the university. It is, however, a significant finding of this research that the female students are more involved than the male students in physical fights, which does not reflect Saudi culture and tradition, and therefore it requires further investigation for understanding (Abou-Zeid et al., 2009).

c) Age

People's age, more specifically younger age groups, has been indicated by researchers such as Odero et al. (1997) one of the reasons for engaging in HRBs (Section 3.5). In the past in Saudi Arabia, the presence of HRBs among adolescents were minimal, but since the 20th century there has been an increase of HRBs among this age group (Pierre et al., 1998, Akala and Semini, 2010, Richter, 2010). The survey and the interview findings of this research confirm the prevalence of several HRBs among the students of University X.

Research of 'problem behaviour theory' stressed the important of people's interaction with their environment in developing behaviour problems (Chapter 5). According to the theory, various behavioural problems start occurring through interactions between people and environments over the course of time (Donovan and Costa, 1994, Gullotta

et al., 2005). When a child becomes an adult, he/she enjoys more freedom to mix with a greater number of people and in diverse environmental situations. In the case of the students of the University X, because of their age and frequent contact with various people, the students may easily become connected to several HRBs. It is important to consider that, because of the rapid economic growth, increased rates of access to education and global cultural exchanges in Saudi Arabia, there is a 'youth explosion' through which there is a dramatic increase of demand of more freedom among Saudi youths (Pates and Riley, 2012). These high demands and curiosity seem to be the major reasons for their engagement with HRBs.

d) Influence of other HRBs

Both the survey and the interview data indicated that in several cases one HRB has caused the students of the University X to be engaged in other HRBs (Section 8.4 of Chapter 8 for a detailed discussion). The interviewees said that one HRB can change the students' perceptions of and engagement with other HRBs. For example, the interview data showed that boastful behaviour led some students of University X to be engaged in smoking and drug consumption, which ultimately caused their engagement in violent behaviours and unsafe sex (Section 8.3.3 of Chapter 8). It might be assumed that when a youth is engaged in a particular HRB, he/she experiences a different relationship with family members, university authority and peers (Crosnoe et al., 2002). In Saudi Arabia, wellbeing and rehabilitation facilities are not easy to access, and it is generally not possible for youths engaged in HRBs to overcome these behaviours (Section 8.3.3 of Chapter 8). Moreover, many young people engaged in HRBs may not consider going to wellbeing and rehabilitation centres as they may think

this would damage their family and community reputation (Abudabbeh, 1996). As a result, there are many students who continue practising a number of HRBs which gradually expose them to other, different, HRBs.

e) Insufficient legislation

The research data, particularly the interviews (Section 8.3.3), showed that in Saudi Arabia there is the lack of legislation associated with people's HRBs. The study reveals that there are a limited number of laws and regulations, and their enforcement is weak and, in many cases, absent. For example, ignoring the traffic lights by the youths in Saudi Arabia is highly evident because of the inaction of the highway police in implementing the traffic laws. It also points to the inadequate training that these young adults receive when learning to drive, a view provided by Tarawneh et al. (1993) as far back as 1993. Whereas most of the road accidents in developing countries are due to alcohol, in Saudi Arabia the reasons are different mainly because the Islamic tradition bans the consumption of alcohol. The youths of the country, however, suffer from road accidents as the result of using mobile phones while driving or trying to drive at very high speeds. Driving without a licence is common in Saudi Arabia and a high number of people, mainly young men, drive without a driving license (Abou-Zeid et al., 2009).

This research also found that, because of the weak traffic laws, the habit of disobeying traffic rules is also high among the female university students of Saudi Arabia (Section 7.3.1). The high prevalence amongst females not wearing a seat belt may have been due to the fact that the Islamic and societal tradition bars the police (who are only male) from checking female passengers. Moreover, it could also be the case that

female passengers ride in the back seat and so under the law they are not obliged to wear seat belts.

f) Lack of awareness of STIs

Lack of awareness about the consequences of HRBs is a major reason for a number of Saudi university students involved in HRBs. Earlier studies (e.g. Fageeh, 2008a, Taha et al., 2010) found that the Saudi university students are not adequately informed about the sexually transmitted infections (STIs) caused by HRBs, and the way they spread among young people. The high levels of lack of awareness and campaigning in the case of sexual behaviours is therefore a concern.

The research findings identified that many students of the University X have engaged in HRBs because they were not told about the harmful consequences of HRBs, particularly the STIs, by their family members or educational institutions. In Saudi Arabia, sexual behaviours are not topics to be discussed publicly (Section 8.3.1).

Government programmes are also inadequate to raise awareness among young people about the risks of sexually transmitted diseases (Fageeh, 2008a, Al-Malki Basim Matar, 2014). Moreover, in the country there is a lack of sexual health literature. Gańczak et al. mentioned another reason for engagement with HRBs among youths is not having health tests, particularly for sexually transmitted infections (Gańczak et al., 2007). The reason for this reluctance is either possibly they do not perceive themselves to be at risk of contracting STIs, or they fear to go for testing services as it is against the Sharia law for unmarried persons to be involved in sexual encounters.

In Chapter 5 the behavioural-decision-making framework explains how people's perceptions lead them to be engaged in HRBs. According to the theory, if anyone does not perceive the risks and is unaware of the possible consequences, the probability of engagement in those risks becomes higher (Frederick et al., 2002). The interview data of this research showed that in the University X context, because of the lack of information and awareness, many students cannot anticipate the immediate or long term health risks associated with risky sexual activity, and consequently they engage in this particular type of HRB (see Section 8.3).

g) Influence of globalisation

Chapters 1 and 2 of this thesis discuss how the conservative nature of Saudi society helps control the extent of various HRBs such as premarital sex and drug abuse. However, recently the steady influence of Western culture is evident, which is causing teenagers and young people to take part in risky behaviours (Fageeh, 2008a, Taha et al., 2010).

The impact of rapid globalisation is an important reason for the engagement with HRBs among the Saudi university students. Presently, there is an increasing change in life styles in Saudi Arabia where Western diet and fast food restaurants are replacing the local diet (Midhet et al., 2010, Washi and Ageib, 2010). This trend is partly attributable to an emerging tendency for families to leave their houses at night, as it is cooler than during the day and therefore they often end up eating in fast food restaurants. Furthermore, where families do not have domestic workers, they may choose to eat fast foods rather than cook for themselves. These eating habits, once formed whilst a child is living with his or her family, appear to remain with them into adulthood, even

when they have left the family home (Section 8.3, Chapter 8). The developing habit of skipping breakfast seems to be attributable to changing sleep patterns in the country, where people choose to stay awake at night and extend their sleep later into the day and hence go without breakfast (BaHammam, 2005). Through analysing the datasets of this research, it is understood that the Saudi community is opening up to the world in a very fast manner and the Saudi young adults are entering into Western lifestyles. Consequently, the HRB-related phenomena of other countries, particularly of the Western world, are spreading among the Saudi youths including the students of University X.

9.2.2.2 Reasons for the existence of some HRBs

Researchers have indicated various factors and reasons for the engagement with HRBs, such as individual personality; family influence; and the role of community sectors (Chapter 3). However, in a specific context, the particular reasons that cause the prevalence of HRBs at various levels have not been explored. In this section the reasons why the students at University X are engaged in some particular HRBs are discussed which addresses Research Question 3 of this thesis:

‘Why are some students at University X engaging in some health risk behaviours more than other behaviours?’

In the previous sections the state of HRBs among the students of University X (Section 9.2.1), the specific reasons (Section 9.2.2) have been discussed. Different levels of prevalence of HRBs have been determined based on these findings and the results of the relevant survey data (Chapter 7). The prevalence of the HRBs have been

categorised into three levels, which can help explore the associated reasons more precisely:

- **High level of existence of HRBs** : e.g. smoking, risky driving, and violent behaviours
- **Moderate level of existence of HRBs**: e.g. alcohol and illegal drug consumption, physical inactivity, and unhealthy diet
- **Low level of existence of HRBs**: e.g. sexual behaviours

The reasons for the variance between the levels of engagement with HRBs among University X are discussed below. It is important to mention that all the reasons provided in the discussion below may have an impact on the engagement with all or any particular HRBs.

a) Reasons for high level of existence of HRBs

The levels of risky driving, violent behaviours and smoking are very high among the students of University X (Sections 7.3.1, 7.3.2 and 7.3.4). The interview findings (Section 7.3.3) show that there are historical, socio-cultural and psychological reasons for this very high prevalence of these HRBs. For example, historically in Saudi Arabia, people, both males and females, are habituated in taking Moassal, Shisha, cigarettes and Snuff. The culture of smoking is therefore embedded in the Saudi society (Siddiqui et al., 2001). The prevalence of other behaviours with respect to gender seems to vary more and this may also have a cultural reason. Socially and culturally males are treated as superiors in the country and thus they tend to exhibit boastful behaviour and heroism, which may lead them to taking risks such as driving too fast. Additionally, because of the present rich economy, a high proportion of the youth population have

their own personal vehicles; however, many younger people do not have proper driving training or a driving licence, which causes risky driving and the violation of traffic rules (Qayed, 1998, Bendak, 2005). Lack of strict traffic laws and the weak implementation of existing laws also encourage Saudi youths to ignore traffic rules (Mansuri et al., 2015). The research findings (Sections 7.3.2 and 8.3.1) showed that the carrying of weapons, which is a cultural practice among Saudi youths, is the major reason for violent behaviours. Moreover, a high rate of physical fights are evident among the female students, which might be the outcome of the constant family and social pressures, frustration, depression and anger they suffer from. It is important to mention that Saudi Arabian society is strictly conservative and male dominated where females do not enjoy equal rights compared to their male counterparts (see Chapter 2).

b) Moderate level of existences of HRBs

The research findings (Sections 7.3.5, 7.3.6, 7.3.7 and 7.3.8) showed that there are moderate levels of alcohol and illegal drug consumption, physical inactivity, and unhealthy dietary behaviours evident among the students of University X. The interview findings (Section 8.3.1) identified that the influence of peers, university culture and globalisation are the major reasons for the engagement with these HRBs.

According to the research findings, the number of the students in University X who are engaged in alcohol and illegal drug consumption is increasing (Section 8.3.1). It would appear that students are influenced by their friends and peers to become engaged with these HRBs and that many students who stay in university accommodation and travel abroad are readily exposed to this practice because of the lack of family

guidance. Due to rapid globalisation, the number of fast food restaurants is increasing in Saudi Arabia, which attracts many university students and cause them to consume unhealthy food on a regular basis (Washi and Ageib, 2010). Research findings also show that some students cannot follow a daily routine because of their busy university timetable (Section 8.3.1). The female students of the university particularly suffer from physical inactivity as the existing exercise facilities of the university for them do not seem to be inspiring or adequate.

c) Low level of existence of HRBs

The quantitative research findings (Section 7.3.9) show a low level existence of sexual behaviours among the students of University X and the interview findings (Section 8.3.1) indicate the influence of western culture and the students' visits to foreign countries as responsible for this engagement.

As in Saudi Arabia any illegal sexual relationship is strictly prohibited and subject to extreme punishment, people generally try to avoid disclosing this behaviour or have any sexual diseases diagnosed (Madani, 2006). The government is also reluctant to reveal the prevalence of sexual diseases as the government considers doing so may tarnish the national image (Nath, 2001). However, this study has found the evidence of risky sexual behaviours related to HRBs, such as illegal relationships, homosexuality and Sexually Transmitted Diseases (STIs), on a limited scale. By considering the social, cultural, religious and government policy-related restrictions, it can be assumed that the existence of sexual behaviour related HRBs is greater than the level identified in this study. It is, however, important to gather extensive data on this particular area in order to realise the connected underlying reasons in a more detailed manner.

9.2.3 Reasons for the existence of particular HRBs in University X

University life is a critical period for students to be engaged with HRBs. University students are young adults at a vulnerable age and they can be easily involved in HRBs (for further discussion see Section 9.2.3 of this Chapter). Moreover, these students undergo a new living and study environment which may also cause engagement with HRBs. It has been noted that while studying at a university, students may turn to HRBs to cope with disappointment in failing to meet family and community expectations (Kierkus and Baer, 2003) and also because of problems, such as lack of proper facilities in the university, leading to disillusionment and a sense of hopelessness. Such difficulties in adjusting to higher education are known to push students into engaging in HRBs (Warr, 1993).

In this section the reasons, which are particularly associated to University X, that influence the students to be engaged with HRBs are discussed. The information answers the fourth research question of this thesis:

‘What are the influences of University X that affect students' health risk behaviours?’

According to education researchers (such as Shiner and Newburn, 1996, Patterson et al., 1998, Kierkus and Baer, 2003), a university should provide the students with adequate support for their academic adjustment through improving cognitive capacity along with promoting healthy living and protecting themselves from contracting sexually transmitted diseases and to stay safe from any engagement with HRBs.

However, the findings from the interviews (see Section 8.3.3) show that the academic and social environment of University X and peer influences are often responsible for

the involvement of a number of HRBs among the students. For example, a number of students find themselves under tremendous academic pressure, making them anxious or depressed, which leads to engagement with risky behaviour, including drinking alcohol and taking drugs (Section 8.3.3).

In relation to the social and academic environment of University and the peer pressure issue, the following four specific reasons are identified which influence engagement with HRBs, particularly in the Saudi Arabian higher educational context and answer the research question 4.

a) Lack of institutional rules and facilities

By evaluating the global contexts of HRBs, particularly in university situations, it is seen that in many developed countries sex education is part of the university curriculum and the students are taught ways to avoid peer pressure and keep pace with challenging university cultures, such as its tight schedule of classes, requirements of rigorous studies and preparations for examinations (WHO, 2002). Many Western universities have produced practical policies and procedures to ensure that the university campus is free from HRBs such as taking drugs (Light et al., 1993, Patterson et al., 1998). The research findings (see Section 8.3.3) reveal that University X does not maintain an academic and social environment that encourages the practice of healthy behaviours. For example, the university does not provide a healthy food facility, nor does it promote awareness regarding healthy lifestyles through health education campaigns. Additionally, public legislation is not properly applied in the university campuses, and in many cases the university authority is hesitant or reluctant to take the initiative to save students from the dangers of HRBs (Section 8.3.3). The students

of the university also referred to the need for proper institutional explanations, rules and procedures that address HRB issues (Section 8.3.3).

b) Lack of university effort

The study shows that the University X still has no plan to raise students' awareness about the nature of HRBs and their impact on personal and social lives. The students claimed that the university authority has organised very limited awareness raising schemes about HRBs (Section 8.3.3). Whereas proper sensitisation is required to keep students safe from certain diseases (Larzelere and Patterson, 1990) and to promote a better healthy environment for learning (Berthoud, 1998b), there are still no visible or significant initiatives by the authorities of the University X in these areas. Moreover, it is seen that the university has not yet recognised the importance of ensuring safe lifestyles of its students and therefore no relevant academic activities have been proposed to minimise the spread of HRBs in the university (Section 8.3.3). The situations are opposite to many Western universities, which provide necessary health care services to reduce the possibilities of engagement with HRBs (Rauch et al., 2006b).

c) Peer influences

University is the place where students make friends, socialise and share views. This ultimately influences one's behaviours and practices in relation to others (Sections 3.4 and 3.5). The research data (see Section 8.3.3) show that in University X many students are influenced by their university friends to engage in HRBs. This is the major cause for smoking and drug consumption (Section 8.3.1). In a number of cases, it was found that

the students are involved in violence and physical fights because of the conflicts with peers and friends (Section 8.3.1). The data also confirmed that there is a strong peer influence among the university students for engaging in unhealthy eating habits and sexual behaviours (Section 8.3.1). This finding is corroborated by Ramsay and Spiller (1997) who indicate that young people are under pressure to conform to the approved behaviours of their peer groups in order to, among other reasons, have a sense of belonging. Moreover, Berthoud added that it is not only the desire to conform to the ideals of the fellow peers that explains engagement in HRBs, and asserts that risk of, or actual rejection and isolation by peer members resulting in feeling lonely, may encourage young people to engage in HRBs (Berthoud, 1998a). This therefore implies that whereas there is pressure to conform to the peer codes, rejection by peers may also encourage engagement in HRBs.

d) Gap between family and university culture

As a lecturer of a university, this researcher has noticed that it accommodates students from different educational backgrounds and socio economic cultures. Many students join the university with previous records of engagement with HRBs, such as smoking or violent behaviours (see Section 8.3.3). Based on this professional experience, the researcher has seen that the university has no mechanisms to identify the existence of HRBs in incoming students or to understand the reasons for their involvement. As a result, the students continue their HRBs practices and influence others to be engaged in such behaviours. The university also does not have any HRB-related awareness building programmes that can help the students realise the harmful impacts of HRBs that their family or society are engaged in (Cortese, 2003).

Moreover, as a Saudi national, the researcher has noticed that generally, the Saudi families whose children study at university are not well connected to the university. They often consider that the university would and should take full responsibility for educating their children and promoting their healthy behaviours (Delgado-Gaitan, 1991, Marmot et al., 2008). This weak family influence also seems responsible in increasing the students' engagement with HRBs.

9.3 HRB patterns in Saudi higher education institutions

By analysing the state (Section 9.2.1) and underlying reasons (Sections 9.2.2 and 9.2.3) for HRBs among the students of University X, the overall pattern of HRBs in the Saudi University context can be more fully appreciated and provides the answer of the following overarching research aim of this thesis:

'What are the patterns of health risk behaviours among the students of University X?'

The findings indicate that the levels of influence are interrelated with the HRB factors (Section 8.3) and in many cases more than one reason is involved in deciding to engage in any single health risk behaviour. HRBs seem to be generated from one reason and then can be enhanced by other reasons (see Section 8.3.4). This finding is parallel to evidence from several global studies about the 'risk behaviour syndrome' which shows that one risky behaviour can influence people to be engaged with other risky behaviours (Jessor, 1992a, Sychareun et al., 2011). This thesis not only confirms this feature in a Saudi higher education institution context, but also explains how several HRBs interplay within various intra-personal and socio-cultural and public engagement levels. The multiple underlying reasons within these three levels include students'

personal beliefs, behaviours and attitudes, family background and culture, influence of the community sectors (such as government and non-government organisations), and the overall structure and environment (both the academic and social) of the university (Section 9.2.3).

An important feature of engagement in HRBs in the University X is that the reasons are identified by both the male and the female students. Whilst there are differences in the prevalence of HRB's between men and women at university X, some HRBs, for example physical fights, are seen in both genders equally. However, Gustafsod (1998) suggests that generally men and women show different levels of concerns for the same risks. In many cases, men are more vulnerable to the engagement of HRBs than women (Eckel and Grossman, 2008a, WHO, 2010). This would not always seem to be the case for students at University X and a similar perception of risk for some HRBs is applicable for both genders.

Furthermore, it is shown from the findings in this study that in the Saudi university context, the factors and the reasons of HRBs generally do not act in isolation; rather they develop from, and are influenced by, the inter-relationship between the intra-personal, socio-cultural and public engagement levels (Bronfenbrenner, 2005). It can therefore be assumed that the impact of HRBs is not restricted to only the individual but it spreads from the individual to socio-cultural and public engagement levels and vice versa.

By analysing the above key features of HRBs in University X, patterns can be drawn from the following three key perspectives:

- varied types and diverse levels of existence

- relationship between types, factors and reasons
- cultural influences and impact of globalisation

The features are derived from the findings of the research questions (Question 1 to 4) of this thesis. A comprehensive analysis of the answers of the questions and the evaluation of their relationship culminate to an overarching pattern of multiple and intertwining reasons of HRBs in a Saudi University context.

a) Varied types of HRBs and their diverse levels of existence

Although previous research findings in the Saudi Arabian context (see Chapter 4), have shown evidence of the existence of a small number of HRBs (such as traffic incidents and smoking) among Saudi young people, and their impact on individuals and the society, the quantitative and qualitative investigations of this thesis have identified a greater number of HRBs (namely violation of traffic rules, violent behaviours and crimes, smoking and drug consumption, unhealthy eating habits and physical inactivity, and sexual behaviours) and their diverse levels of existence among the university students in Saudi Arabia. The findings indicate two possibilities. Firstly, it seems that the existence of HRBs is more varied and widespread in a university context and among the students than previously expected. Secondly, engagement with HRBs is increasing rapidly in Saudi Arabia, particularly in universities (Abdalla et al., 2007, Al-Hazzaa et al., 2011).

Among these types, smoking, risky driving, and violent behaviours have been found highly evident, whereas alcohol and illegal drug consumption, physical inactivity, and unhealthy diet exist at a more moderate level. The findings also indicated that some

students of University X are more prone to risk taking. According to the 'behaviour decision-making theory', risk taking is connected to decision-making (Fischhoff, 2008, Reyna and Rivers, 2008). It is therefore important to consider the varied reasons and circumstances that lead a student to be engaged with any HRB. Addressing this aspect is particularly required while designing or implementing any HRB related schemes at universities or other organisations.

Because of the varied types of HRBs and their diverse levels of existence in this Saudi university context, it can be assumed that the levels of influence of these different HRBs also vary among the students of Saudi Arabian higher educational institutions. Therefore, the factors and reasons responsible for the HRBs may act differently with different HRB types. However, in Saudi Arabia, different universities may contain similar reasons for HRBs (such as reckless driving and consumption of similar food items) and thus the situations may be similar in many cases.

b) Relationship between types, reasons and levels

The analysis of the research findings has enabled relationships between the types of HRBs, their underlying reasons and levels to be identified (see Figure 9.1).

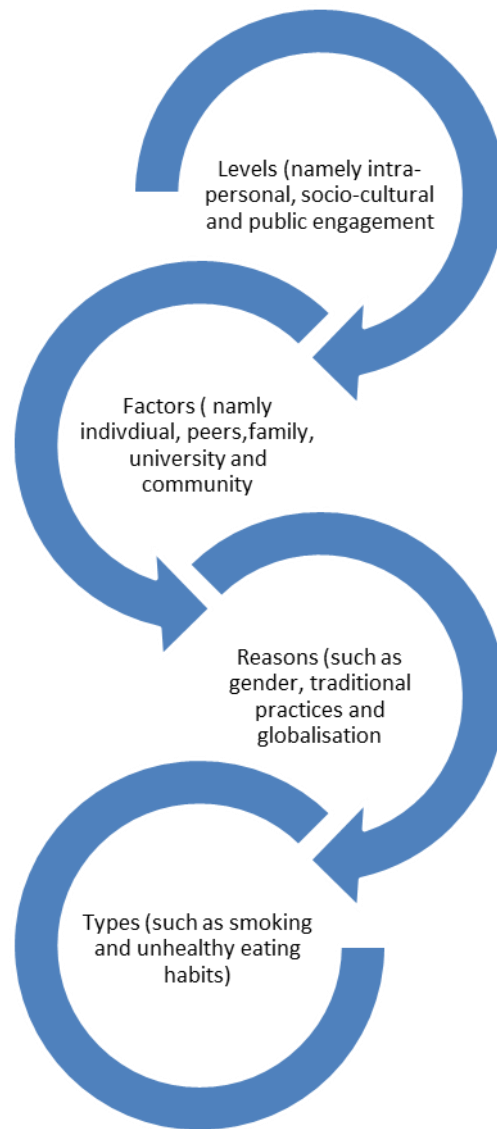


Figure 9.1: Key relationship between type, factors, reasons and levels

In Saudi Arabia, the contributing levels of HRB engagement (Figure 9.1) extend across individual and intra-personal levels to wider society (or socio-cultural), whilst social and government sectors along with the laws and regulations (comprehensively termed as public engagement) play a vital role (Section 8.3.2). In the country, the government agencies are mostly responsible for providing services, but there are a limited number

of social platforms such as clubs and market places where the general public can meet and exchange their views (Samara et al., 2015).

There are very limited private organisations which provide social or community services because of the centralisation of the public sector services and therefore the existing laws and regulations are the main vehicles for controlling engagement with HRBs in the country.

This research has identified several underlying factors and reasons for HRBs, which are attributable to various levels (namely intra-personal, public engagement and socio-cultural), which influence the types of HRBs among the students of University X. Here, the levels and factors represent the greater contexts or environments which have overarching and interrelated influences on HRBs. Even though the outcomes of engagement in HRBs are beyond the scope of this study, they have been alluded to and may result in several personal development and social related problems (Gerrard et al., 1996, Green and Myerson, 2004, Steinberg, 2008).

The research findings (Section 7.3) also show that, irrespective of gender and family backgrounds, a significant number of university students are engaged in a wide range of HRBs. The engagement of HRBs among the female students is surprising, as they are not always free to move in the society and mix with people. It therefore can be assumed that their lack of information about HRBs and the influence of their family and friends may be the key reasons for their engagement with HRBs.

Based on these relationships it is evident that, to control the uptake of HRBs, and their potential negative impact, among the students at the Saudi university, effective

interventions will be required at the intra-personal, public engagement and socio-cultural levels, with careful consideration of the factors and reasons identified as responsible for students' engagement with HRBs. In the final chapter a number of relevant recommendations are made which may help Saudi Arabian universities and students reduce and prevent their engagement with HRBs.

c) Strong cultural influence and impact of globalisation

The study findings show that the native Saudi culture, gender disparity and the rapid globalisation processes strongly influence the students of the Saudi higher educational institutions whether engage with the HRBs or not.

Firstly, the strong influence of the society and culture on people's risk-taking related decisions is confirmed by various researchers (Section 5.3 of Chapter 5). The primary source of cultural practices is the family and community interactions, which generally shape the cultural patterns of people (Hawkins et al., 1992). Additionally, social rules, obligations, norms and social communication practices influence people while deciding to take risks, including the risks associated to health (Bourdieu, 1986, Coleman and Coleman, 1994, Putnam, 1995, Shiner and Newburn, 1996, Bennett et al., 2007). The research findings show that the influence of the society and culture for the engagement of the Saudi university students with HRBs is strong. Several aspects of 'family', including family tradition, problems, and history of HRB engagement of any family member, influence the Saudi university students' engagement with the HRBs (Section 8.3.3). Similarly, the social rules, community regulations and cultural backgrounds have a strong impact in this regard (Section 8.3.3). The research findings reveal that the influence of the Saudi culture that is strictly religion based and male

dominated does not encourage HRB issues to be openly addressed, particularly in the case of young people and specifically women. The findings suggest that this may be causing the covert or hidden development of HRBs among young students in Saudi Arabia.

Secondly, an individual's gender and risk taking intentions play an important role in engagement with HRBs (Chapter 5). Research has shown (Kelly et al., 1995, WHO, 1998, Eckel and Grossman, 2008a) that for biological and social reasons, men are less able to anticipate risks than women. Consequently, men have a higher likelihood of being engaged in HRBs. In this study, it has been seen that there is a gender-based difference regarding the involvement of HRBs in Saudi Arabia. The difference is expected, as in the Saudi community there is a clear difference between the way males and females are brought up and treated; males receive higher priority and flexibility in their lifestyles. However, the presence of all five types of HRBs among female students indicates that HRBs are spreading among young people in Saudi Arabia, irrespective of gender. In the study, a number of both male and female students at University X were found to have been involved in all the identified HRB types. However, in a number of HRBs either the male or female students were more highly involved. For example, mainly the male students were involved in violation of traffic rules, reckless driving, having a boastful tendency, and carrying weapons. On the other hand, the female students suffered from the lack of healthy eating and adequate physical activities. Whilst both male and female students engaged in the majority of HRBs, the interrelationship between the extents of influence levels, factors, and reasons for engagement seemed to operate differently between the genders. According to the research findings (Section 8.3), families, the community and the university treat male

and female students differently with respect to engagement with HRBs. The findings therefore indicate that the route to engaging in HRBs may vary between the genders. Moreover, the treatment that the female students receive in society, their intra-personal characteristics and their scope for public engagement may particularly determine the levels of their engagement with HRBs.

Thirdly, according to the research findings (See 7.3.1 and 7.3.3), globalisation has a major influence on Saudi university students engaging with various HRBs. Saudi Arabia is an oil rich country and several million immigrants contribute to its ongoing development. Previous research (Ageely, 2009) showed how these immigrants are spreading HRBs among the Saudi youths. Since the 1980s, a great number of Saudi youths can travel abroad for higher education, tourism and business purposes which, according to the study findings (Sections 8.3.1 and 8.3.3), are causes for being engaged with HRBs such as risky sexual behaviours and harmful drug consumption. Young people, particularly those from conservative backgrounds, are very curious about new cultures and practices (Steffen et al., 1987, Newby and Snyder, 2009) which makes them extremely vulnerable to HRBs. The findings of this thesis reinforce the claim of Pareek and Chowdhury (1981) that contact with foreign cultures and practices may influence young Saudi's in HRB engagement such as drug and alcohol consumption, and risky sexual activity.

9.4 Levels of influence on students at University X to HRBs

People's engagement with HRBs is linked to risk taking behaviours, decision-making processes and personal health (Glendinning, 2002, Elgar et al., 2003). Social

researchers (such as Morash and Rucker, 1989, Slovic, 2000, Harland et al., 2002) have particularly shown the strong role of the family and society, culture and peer pressure in this connection (see Chapter 3). Additionally, research findings (such as McGuire and Priestley, 1995), mostly drawn from Western countries, indicate that the lack of awareness and experience of the impact of any risky behaviours lead young people to be involved in HRBs. These varied elements indicate a wide range of factors and underlying reasons that are potentially responsible for people's engagement with HRBs. Adolescence and early adulthood are key periods of human life to be engaged in HRBs (see Chapter 3) and this study has also found that different HRBs are evident according to individual students' circumstances (see Section 8.3.3). Although previously little was known of what particular reasons are responsible for the Saudi youths' engagement with HRBs, the survey and the interview data of this research provide more information about this area. However, it has also been found from both datasets and the meta-analysis of these results that there are overarching circumstances that appear to influence students at University X to engage with HRBs. Here the term 'levels' refers to three broad levels that represent the social ecology of the participants (see Section 8.4.2 of Chapter 8). It is important to mention that the levels are not exclusive of any specific reasons or factors for HRBs, but they are the categorisations that help to explain how different factors and reasons are associated within a level, as well as how they are connected to and interact with other factors and reasons at a different level (see 8.4.2).

According to the data categorisations, mainly drawn from the interviews (see Chapter 8), it can be realised that the HRBs in the University X context are originated from

three levels, namely interpersonal, socio-cultural, and public engagement (see below).

It is also found that the factors and reasons within each level are interrelated (see detailed discussion in Section 9.3). The description of the features of these factors is discussed below.

a) Intra-personal level

The research data show that the University X students' personality type, low self-esteem, boastful behaviours and self-negligence are the major reasons that influence their engagement with HRBs (see Section 8.3.3). These reasons are mainly psychological which are derived from the state of intra-personal character, such as personal beliefs, behaviours and attitudes. Satterfield and Schell (1997) and Lynch et al. (1997) noted that people's lack of awareness, poor literacy, hyperactivity, lack of self-understanding, and inability to anticipate consequences, lead them to engage more in HRBs. Researchers such as Kelly (1995) and Barker (1998) argue that young adults are unique in their attitudes and behaviours. Moreover, the personality types, particularly the risk taking behaviours, vary between male and female youths (Erulkar et al., 2001, Eckel and Grossman, 2008a, WHO, 2011a). Additionally, youths are influenced by family tradition, which is connected to their self-esteem and confidence (Patterson et al., 1998). By indicating the complexity and the inter-related influences for engaging in HRBs, the interview results show that the intra-personal level is greatly influenced by the University X students' surrounding environment and the treatment of family members and peers as risk factors.

Researchers (such as Stall et al., 1992, Baumeister et al., 1994) claim that an individual requires comprehensive information to make informed decisions about whether to be

involved in any HRBs, otherwise his/her lack of information becomes a vital reason for the engagement with HRBs. Both the survey and the interview findings indicated that the majority of Saudi university students are not informed about HRBs, which is likely to contribute to their involvement in HRBs. Moreover, their boastful behaviours and self-negligence also seem to be responsible for their ignorance about the harmful impacts of HRBs, and this may also lead them to be engaged in several HRBs.

b) Socio-cultural level

According to the developmental cognitive neuroscience theory and theory of problem behaviour (see Chapter 5), various social aspects, such as peer pressure (Maung et al., 1995, Steinberg, 2008) and influences of environmental groups, such as ethnic groups and university-based communities, are connected to people's cognition, including their risk taking behaviours. The survey and interview findings showed that several socio-cultural elements, such as social norms, influence of globalisation, insufficiency of community sector support (such as government and private welfare departments) and poor laws and regulations, are influential in the students' involvement in HRBs at the University X (see Section 8.3.3 of Chapter 8). Satterfield and Schell noted that if children's self-esteem is not nurtured at early age, they cannot build-up the sense of self-worth and ultimately become vulnerable to HRBs (Satterfield and Schell, 1997). This indicates that the levels of influence, such as intra-personal, socio-cultural and public engagement, are interconnected. It can therefore be assumed that the students who are involved in HRBs may have been influenced negatively from their society and culture which has not been properly addressed by the family and the educational institutions. The strong gender division in Saudi society, which is also supported by

religious tradition, is also the reason for the higher engagement with HRBs of Saudi young men (see Sections 8.3.1 and 8.3.3 of Chapter 8).

c) Public engagement level

Researchers (e.g. McKay, 1993, Warr, 1993, Shiner and Newburn, 1996, Harland et al., 2002) suggest that people need to be guided by welfare groups, such as community organisations and peers, and other groups promoting positive messages, to avoid engaging in any HRBs. They particularly mention that youths are vulnerable to peer pressure and they are highly influenced by their surrounding community groups (see Section 8.3.3 of Chapter 8).

The interview data of this study showed that the lack of community organisations, such as clubs, government departments and private unions in Saudi Arabia, and the strong influence of peer pressure, isolation and lack of information among the students of University X, are responsible for their engagement with HRBs (see Section 8.3.3 of Chapter 8). Chapters 1 and 2 discuss how the Saudi Arabian government, through its various groups and departments, influences people's perceptions on risks. Yet, the research findings indicated that the students of University X did not consider that the government had adequate policies and measures to prevent the spread of HRBs among them (see Section 8.3.3 of Chapter 8). According to these students, the existing community groups, such as religious organisations, clubs and social support initiatives, could promote general welfare activities, which can help people to stay free from HRBs. However, according to the research findings, the Saudi Arabian community groups are inadequate in terms of number and the initiatives focused on the engagement of HRBs of Saudi youths (see Section 8.3.3 of Chapter 8).

In addition to the above, this study has identified the active role of University X and its community in influencing students' engagement in various HRBs. It is also helpful for the researcher to reflect on all the findings of the study and their relationship to each other. This leads to the review of the theoretical framework in the final chapter (see Chapter 10). This theoretical framework may help to inform HRB related research more widely in Universities in Saudi Arabia and beyond.

9.5 Conclusion

The research data indicated the diversity and difference in the prevalence of HRBs in the Saudi Arabian university context. The data highlighted that levels within the intra-personal, societal and public engagement and reasons responsible for the engagement with the Saudi students are inter-related. Through examining the findings, it has been revealed that particular types of HRBs (namely the violation of traffic rules, violent behaviours and crimes, smoking and drug consumption, unhealthy eating habits and physical inactivity, and sexual behaviours) exist in University X. These findings are new as the previous research on HRBs in the Saudi Arabian context did not cover these particular educated and assumedly more intelligent youths. The findings also showed the involvement of both male and female students in many types of HRBs, which may indicate a greater engagement with the HRBs of all University students.

Based on the analysis, three major levels of influence (intra-personal, socio-cultural and public engagement) are identified, which provide the context and highlight the factors that may lead to students' engagement with the HRBs. When these levels and factors act in a negative capacity on an individual, they influence the instigation of the reasons which may cause engagement with HRBs. One factor may therefore be

responsible for creating several reasons for the engagement with the HRBs. Similarly, in many cases, several factors also contribute to the formation of a single reason for the engagement of HRBs.

Finally, by analysing the present state of HRBs along with the relevant levels, factors and reasons, a set of complex patterns has been uncovered in the study. The patterns not only indicate the varied types, factors, reasons and levels of the existence of HRBs in a Saudi university, but also show an intertwining relationship between them. The study also reveals a strong cultural and global influence on Saudi student with respect to engaging in HRBs. The identification of these patterns seems to be valuable as it directs to several recommendations to prevent Saudi university students from the engagement with HRBs and will be discussed in the following, and final, chapter.

Chapter 10 : Conclusion

10.1 Introduction

This concluding chapter summarises the key findings, the empirical and theoretical data, and the methodological contributions to knowledge that have been made, including the development of a revised theoretical framework. Limitations and future research, including the transferability of the findings to a wider context, are elaborated. Furthermore, a number of recommendations are explicitly introduced for planning and tackling the spread of HRBs among the university students in Saudi Arabia.

10.2 Key findings

The research set out to examine the extent and nature of HRBs among the students at a Saudi university, also referred to as University X. The overarching research question of the thesis is; 'What are the patterns of health risk behaviours among the students at University X?' Key findings indicate that students of University X engage in various HRBs, including the violation of traffic rules, violent behaviours and crimes, smoking and drug consumption, unhealthy eating habits and physical inactivity, and sexual behaviours. Moreover, there is a diversity in the prevalence of HRBs in the Saudi Arabian university context, some of which are gender-based. Based on the analysis, three major levels of influence (intra-personal, socio-cultural and public engagement) are identified which provide the context for engagement in HRBs. Within these levels the factors and reasons that may lead to students' engagement with the HRBs have

been highlighted. When these levels and factors act in a negative capacity on an individual, they influence the instigation of the reasons that may cause engagement with HRBs. Finally, the present state of HRBs, along with the relevant levels, factors and reasons, uncover a set of complex social patterns at work in a Saudi university and the intertwining relationships among them.

10.3 Contributions of the study

This study on the health risk behaviours (HRBs) of students in a Saudi Arabian university has provided new insights on the research methodology in HRB research. Answering the research questions with detailed explanations of the situation with regard to HRBs has also enabled new learning about the state of HRBs in the Saudi Arabian university context. Furthermore, a revised theoretical framework, derived from the findings, has been developed that provides a more elaborated conceptualisation of HRBs and may be used to more meaningfully study HRBs in other contexts. Additionally, the findings seem to be transferable to other forms of risky behaviours, such as risky adolescent behaviours and depression related risky behaviours (Jackson et al., 2012) and also to diverse contexts, such as other higher educational institutes in Saudi Arabia, schools, or professional organisations. The major contributions of this study are discussed below.

10.3.1 Methodological contributions

This thesis has designed and applied a mixed method research methodology for exploring HRBs. An extensive range of literature and research projects in the field of HRBs was reviewed, but no example of the application of the mixed method research

was found. Almost all the relevant studies were conducted following a quantitative research approach and therefore this study is unique in this field for including a qualitative dimension in the investigation. Several benefits of qualitative investigation have been highlighted, in that the data provided more detailed explanations of phenomena and this has helped to reveal more nuanced aspects with regard to HRBs such as the states, levels, factors and reasons associated with them in a Saudi Arabian university. It is also important to mention that most of the research projects about HRBs in Saudi Arabia have mainly emphasised a single HRB, such as smoking and chewing Khat, rather than a range of behaviours. Furthermore the previous studies have not examined in detail the state, factors and reasons of this critical phenomenon.

10.3.2 Theoretical contributions

Based on the findings of the study, a change in the initial theoretical framework has been realised (Figures 10.1 and 10.2 below). The modified theoretical framework provides a detailed explanation of the Saudi university students' engagement with the HRBs through referring to their types, factors and reasons.

a) Initial theoretical framework

Based on the relevant theories and study findings (Chapter 3 and 5), the initial theoretical framework shows the link between the types of HRBs with the risk and protective factors, and the possible outcomes (see Figure 10.1).

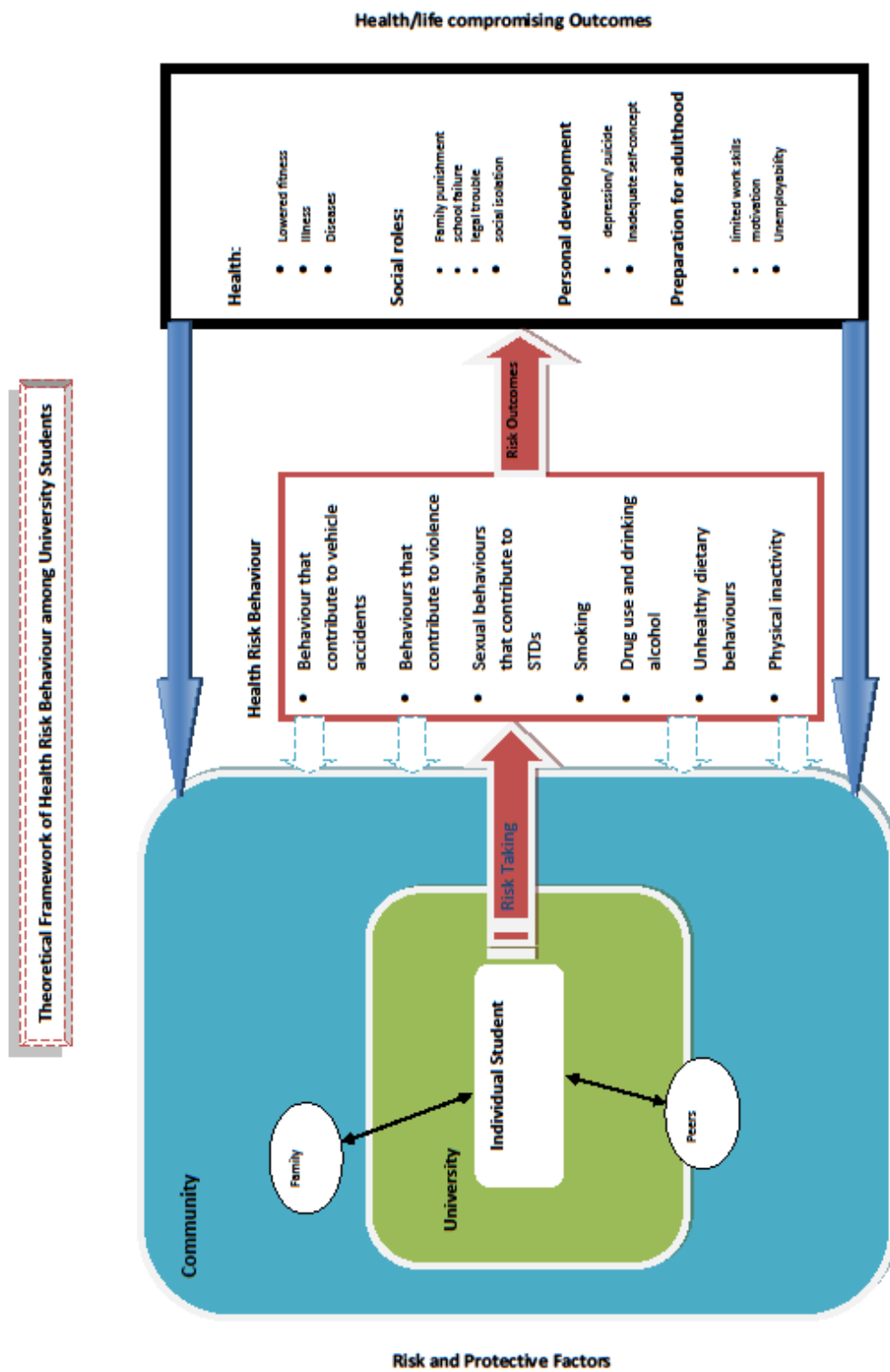


Figure 10.1: Initial theoretical framework

The framework, however, indicates the need for explaining the processes and features between the two stages of the outcomes and the origins (reasons for HRBs and health outcomes). This thesis has specifically identified three interrelated levels of influence on health risk behaviours and also found the reasons associated with them. Based on the information gained as a result of the research, the initial theoretical framework has been modified below (Figure 10.2) which provides a more complete explanation about the complexities of HRB in the Saudi university context.

b) Modified theoretical framework

After analysing the qualitative (interviews) and quantitative (survey) research data, the reasons and processes that connect the factors and outcomes of HRBs are more clearly elucidated (see Figure 10.2). The data showed that individual, family, peer and community factors that affect an individual's decision-making process to engage with HRBs are informed and influenced by risk and protective factors at the intra-personal, socio-cultural and public engagement levels. These factors within their levels are the causal foundation for the reasons for engagement with HRBs which in turn directly influences the students of University X to take various health risks.

In the following revised framework (see Figure 10.2), the detailed aspects of the factors, reasons, types and outcomes of HRBs are presented. The figure shows the engagement processes of the students of University X with HRBs. A more detailed explanation of the model is provided below.

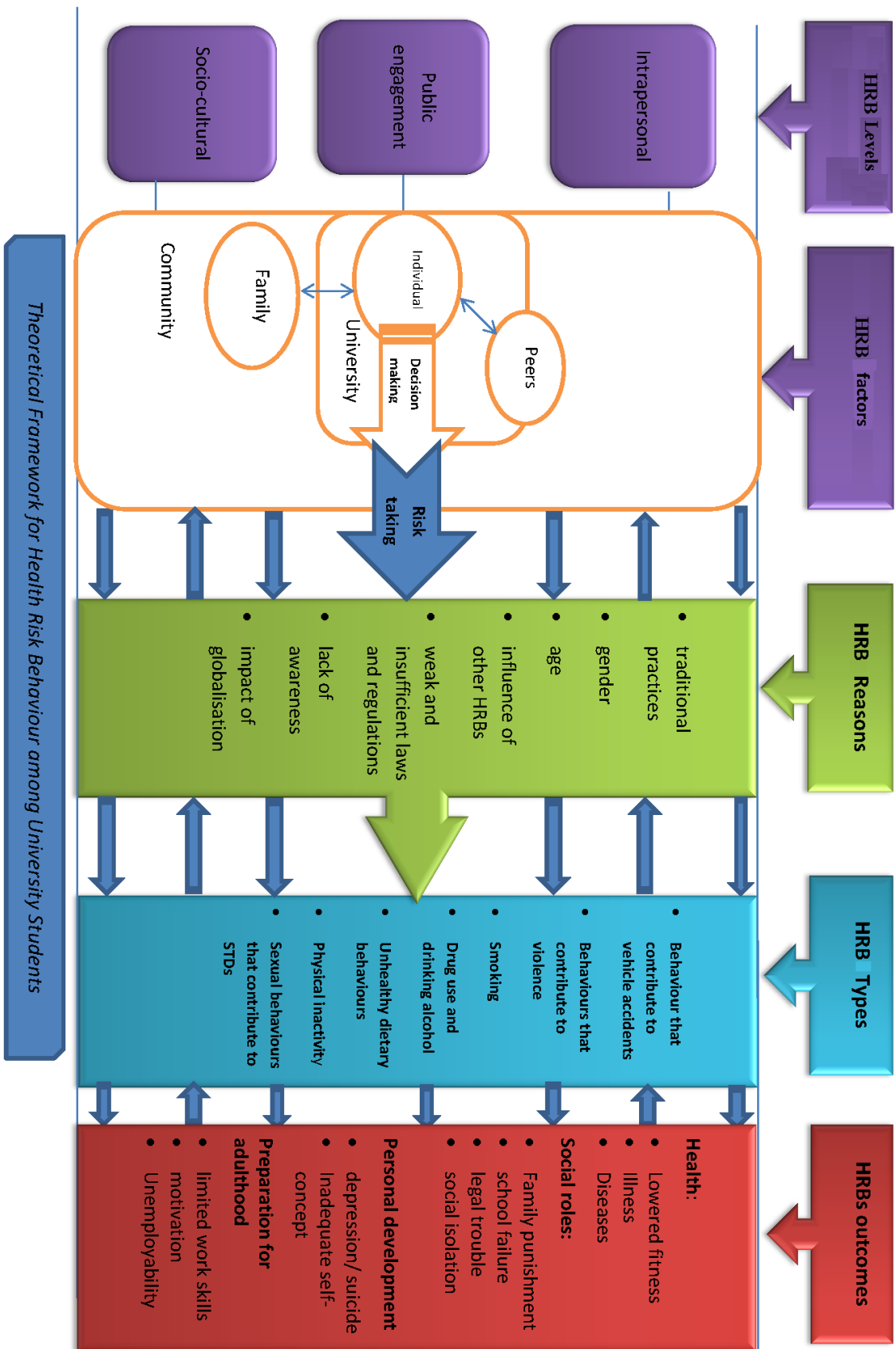


Figure 10.2: Modified theoretical framework

Figure 10.2 shows the relationship among the HRB factors, reasons and types. The comprehensive understanding of the levels of HRBs (intra-personal, socio-cultural and public engagement – see the first column of Figure 10.2) are more specifically identified in the Saudi higher educational institution context as the characteristics of an individual (such as affective aspects of the self), peer, family and community factors (clubs and social organisations). The reciprocal relationship between these factors means that they can collectively determine the effects on an individual as risk or protective factors. Added to this complexity, the model highlights the intertwining nature of the factors in different levels (see Section 9.4). The reasons for HRBs originate in the complex web of these inter-related factors and may cause an individual to engage with one or more types of HRB (fourth column of Figure 10.2). In the Saudi higher educational institution context, seven specific ‘reasons’ were found (Section 9.2.2.1), namely traditional practices, gender, age, influence of other HRBs, weak and insufficient laws and regulations, lack of awareness, and impact of globalisation – third column of Figure 10.2) were found. These reasons manifested themselves in the student engagement with different ‘types’ of HRBs in this Saudi university context (see Section 7.3). These were identified as violation of traffic rules, violent behaviours and crimes, smoking and drugs consumption, unhealthy eating habits and physical inactivity, and sexual behaviours (fourth column of Figure 10.2). In the final column, a number of possible outcomes are highlighted but these have not been specifically investigated in the survey and the interviews, as this was beyond the scope of the study. However, the outcomes have been generally recognised and discussed according to the findings from the existing literature, and within global contexts (Section 3.6 of Chapter 3).

This detailed clarification of the process of engagement with HRBs explains how such behaviour can transpire from a particular level or factor (first and second columns Figure 10.2) and turn into a specific HRB (fourth column). Consequently, the understanding of this process has helped to propose a number of practical preventive measures (see Section 10.3 below). Compared to the previous studies on young people's engagement with HRBs (Chapter 3) which identified only the 'factors' or sources of HRBs, the modified theoretical framework suggests seven specific 'reasons'. Furthermore, the factors in the modified framework identify the contextual levels where the reasons originate and are formed, and act as direct drivers to engagement with HRBs.

This model highlights the impact of factors in developing reasons for engagement with HRBs. These factors are strongly embedded in the individual's self-concept, society and culture. It therefore seems necessary to take proper measures to recognise the reasons for HRBs in order to be effective in helping to prevent HRBs. In the Section 10.4 a number of recommendations are made to manage the reasons of HRBs.

A worked example of the revised theoretical framework

The revised theoretical framework (see Figure 10.2) explains the levels, factors, reasons and types associated with all HRBs, namely behaviours that contribute to vehicle injuries, behaviours that contribute to violence, tobacco use, alcohol and other drug use, unhealthy dietary behaviours, physical inactivity, and sexual behaviours that contribute to sexually transmitted diseases (see Section 8.3 for a detailed discussion).

With the help of the framework, the HRB that contributes to vehicle injuries can be better realised as described in the example below.

Behaviours contributing to vehicle injuries

In Saudi Arabia, road accidents are frequent among the young adults. With the help of the revised theoretical framework, the HRB levels, factors, reasons and types leading to vehicle injuries are explained here. This example may help stakeholders such as policy makers, police, community groups, parents and young people understand why this HRB is so prevalent and in doing so begin to address some of the factors and reasons in order to reduce these accidents. From the framework, it can be seen that the HRB factors are formed in the three HRB levels and become the sources of several reasons which directly cause different types of HRBs that contribute to vehicle injuries.

The origins of the behaviours that contribute to vehicle injuries can be explored firstly through the HRB levels (shown in the first column of the model in Figure 10.2).

Accordingly, intra-personal, public engagement and socio-cultural aspects become the sources for young adults' engagement with the behaviours that cause road accidents and injuries.

a) Intra-personal Level

Although there are various intra-personal elements, such as personal beliefs, the ones particularly associated with road accidents identified in this research are boastful behaviours and self-negligence (see Section 8.4). Additionally, people's lack of awareness, hyperactivity, and inability to anticipate consequences can also lead to this type of risky behaviours (Section 8.3.3).

Factors and reasons

This research has found that the influence of university and peers act as the key factors for the engagement with the HRB contributing to vehicle injuries (Section 8.3.3). For example, in Saudi society males are considered more powerful and they are expected to be brave and take risks. In the country, there are many young adults who neglect traffic rules and regulations by not wearing a seat belt or not observing the speed limit while driving (Section 8.3.1).

To alleviate these behaviours, education regarding the risk to themselves and accompanying passengers may help, particularly if this is supported in the home environment. Peers influence them to be boastful and reluctant to follow traffic rules. Although peer pressure can work negatively, it can also be positive through peer-led support projects, which can prevent the youths from driving recklessly.

As a signatory of the Decade of Action for Road Safety, 2011-20 (DARS) Saudi Arabia needs to strictly enforce six strategies to prevent vehicle injuries: i) safer roads and mobility, ii) safer public transport, iii) safer road users, iv) safer vehicles, v) better post-crash management ,and vi) improved institutional support for road safety development (WHO, 2016). In order to implement these strategies successfully, it is essential to change the users' behaviours regarding the road safety and driving which can potentially be done through 'education, encouragement and effective enforcement of strategies' (The World Bank, 2002). Although several traffic rules are in place in the country, it is important that the people, more specifically the youths, receive adequate information about the laws along with possible consequences when

the laws are not properly followed. In this regard, the law enforcement departments collaborating with educational institutions and community organisations can arrange awareness raising programmes such as campaigns, seminars and talks regarding behaviours leading to vehicle injuries.

b) Public Engagement Level

The public engagement level also contributes to the behaviours responsible for vehicle injuries. Similar to the intra-personal level this also contains various elements (see Section 8.4.2), but in particular family and peer influence and lack of information about traffic rules are responsible for the students of University X being engaged with the HRB associated to road accidents.

Factors and reasons

As the framework shows in its second column (see Figure 10.2), the public engagement factors such as the relationship and influence of family and peers are important in the engagement with the behaviours contributing to vehicle injuries. Family members often encourage young men to be boastful and this attitude can translate into reckless driving (see Section 8.4.2). Furthermore, there are families where seniors allow their children to drive without having a driving license. Families, particularly those at the head of the family, should be made aware of that this is against the law and understand the consequences of breaking the law for themselves and their younger family members. Alongside understanding these legislative risks families need to be aware of the real dangers they are allowing their family members to expose themselves to. The family, particularly parenting styles, influences children's beliefs

and behaviours about safe practices on the road (Mulvihill et al., 2005), and thus involving the parents is important to develop road user skills among the children. In the last decade in Scotland, several initiatives such as the Children's Traffic Club, Child Pedestrian Training Skills and Safer Routes to School were taken to educate children about the road safety issues. Similar initiatives also seem to be essential to be introduced in Saudi Arabia as the research findings of this thesis (Section 8.3.1) indicate that many young Saudis expose their boastful manner through ignoring traffic rules and by driving carelessly.

This research has also revealed (Section 8.3.3) that the lack of motivational activities such as seminars and informative lectures at university act as a factor for the behaviours of the young adults to contribute to vehicle injuries. In reality, Saudi universities do not provide with any educational resources or guidelines that could educate students about following legal procedures while driving, and driving with care. Family contribution could also play a significant role in this regard if the victims' parents or relatives were able to share their tragic experiences in university or community forums. However, this type of event is not common in Saudi Arabia, particularly in the universities. The lack of any support from the university to prevent dangerous driving may therefore by default encourage this risky behaviour. Campaigns in the university about the risks of dangerous driving including perhaps posters placed around the campus and near car parks would help to raise awareness of this HRB and may encourage young people to stop and think about driving more safely.

Because of the above factors, there is a lack of information about traffic rules, which is a vital reason for these students' engagement with this HRB. Additionally, there is a

lack of social institutions and clubs that could encourage these students to be more aware of road safety and the traffic rules. The research data indicate (Section 8.3.3) that the existing traffic rules are not adequate to control the risky behaviours of the young adults causing vehicle injuries. Furthermore, the law enforcement authority is also reluctant in ensuring that young adults are following the traffic rules properly (Section 8.3.3). In many countries the traffic police department takes various measures that are effective to decrease road accidents. For example, Mumbai Police in India perform standing duty at accident spots and conducts stress management programmes for drivers (UTIP, 2014), which could also be implemented by Saudi Arabian traffic police. Additionally, they can improve the existing enforcement systems and technology, keep records of accidents and their locations, broadcast and publicise documentaries and motivational programmes on road safety and traffic rules via electronic and print media, and support educational institutions and community organisations to educate young adults about accidents and injuries.

c) Socio-cultural Level

The socio-cultural level is also responsible in generating factors that create the reasons for the HRB contributing to vehicle injuries. This level is wider and includes culture, social organisations, traditions, social structures and norms and even people's perceptions about the behaviours causing vehicle injuries.

Factors and reasons

The socio-cultural level contains the family, community, university and peer factors which create various reasons for the students at University X to engage with the HRB contributing to vehicle injuries. Whereas the intra-personal and public engagement levels create micro-level factors like individual, family and peers; the socio-cultural level creates meso-level factors, such as university and community.

Based on the socio-cultural level and the associated factors, several reasons are derived which directly influence the behaviours responsible for vehicle injuries. For example, because of the presence of other HRBs in the Saudi society, such as drug use and violent behaviours, some Saudi youths get involved with behaviours that lead to vehicle injuries. In Saudi society gender is also a reason for this type of HRB as socially, and within the family context, male members enjoy more freedom from a very young age. Furthermore, the roles of community sectors like non-governmental organisations and clubs do not provide advice, which means the young adults do not make informed decisions and become easily engaged with these particular behaviours that contribute to vehicle injuries. For this reason, a wider campaign strategy needs to be implemented in the country involving community organisations and social leaders where vehicle injuries as the outcome of different HRBs, such as drug use and violent behaviours, can be addressed. A comprehensive campaign policy that includes laws, awareness building and public education initiatives is therefore essential (WHO, 2008a). Particularly, in Saudi universities there is a need for establishing active counselling units that can offer the students advice about HRBs. Additionally, they could organise learning sessions about HRBs for parents and facilitate specialised

modules on HRBs for both the students and parents. Furthermore, the community sectors, such as clubs and forums need to be empowered through training and financial support so that they can also run similar programmes to alleviate HRBs among the youths. However, it is important that the government departments design and implement effective leadership and operational frameworks, and also coordinate all the initiatives by engaging all stakeholders at every level.

This worked example of using the framework to explain the levels, factors and reasons for vehicle injuries can help us understand how to develop interventions to prevent this HRB (see the examples in the above discussion). This understanding is essential for formulating practical and context-bound policies at individual, community and university levels. In the framework, a direct link between the factors and reasons is established which can help us realise how the HRB reasons contributing to vehicle injuries are created by different factors within different levels or contexts. In fact, through realising these levels, factors and reasons a comprehensive and realistic understanding on this particular HRB can be achieved.

By using the revised framework and through following a similar approach to explore the HRB levels, factors and reasons contributing to vehicle injuries, the aspects around other HRBs can also be better understood. For example, recognising the significance of intra-personal, public-engagement and socio-cultural levels, enables a better understanding of the context of smoking or risky sexual behaviours among Saudi university students. Additionally, the framework can be used as a guide to identify the factors such as the self, family and community factors associated to these behaviours.

10.3.3 Empirical contributions

The principal objective of this study was to explore the patterns of HRBs among the students at a particular Saudi university (Section 1.3). To explore the answer to this question, four different sub-questions were formulated to explore the present state of HRBs, along with the influencing factors and the reasons for the students' engagement. The research data provided adequate evidence to describe these areas (Sections 9.2.1, 9.2.2, 9.2.3 of Chapter 9). Moreover, the detailed understanding of the state, levels, factors and reasons of HRBs has illuminated the patterns of HRBs within a University context in Saudi Arabia (Section 9.3).

Answering the research questions has yielded the baseline information about HRBs in a Saudi Arabian higher educational context.

In fact, the focus on the reasons for HRBs and their intertwining relationship with the factors and outcomes are new in HRB-related studies, particularly in the Arab world. The findings are therefore useful to understand the social context of HRBs in Saudi Arabia, including the roles of the people, society and higher educational institutions in influencing HRBs. Based on this contextual understanding, it is therefore possible to make recommendations for practice that may contribute to preventing students from engagement with HRBs. The findings of this thesis indicate the following areas where careful interventions are needed to tackle and reduce HRBs in a Saudi university context (see Section 10.4 below for a number of suggestions made with respect to this).

Firstly, the findings (Section 8.3.1) show that there is an absence of Saudi community sectors such as clubs and social forums which could play important roles in reducing or eliminating HRBs among Saudi university students. According to the findings, the students engage with HRBs at the socio-cultural and public engagement levels where adequate information on HRBs and support facilities can help them avoid these behaviours.

Secondly, according to the research findings (Section 8.3.1), there is a lack of government policies and laws on various HRBs such as behaviours leading to vehicle injuries, violence, smoking and the selling of low quality foods that are harmful for health. The findings also reveal that the existing laws are not often strictly applied. It is therefore important to ensure that the government as well as private agencies effectively enforce the laws and regulations.

Thirdly, Saudi families have roles in engaging with HRBs or avoiding them. While in many cases Saudi University students engage with HRBs, such as smoking and unhealthy diets, through the influence of family members (Section 8.3.1), it is also possible that family members can play an important role to prevent the youths from engaging with these harmful behaviours through motivation, acting as role models and providing support and guidance.

Fourthly, the research findings (Section 8.3.1) indicate that universities or other educational institutions in Saudi Arabia need to plan and implement regulations that can protect their students from engagement with HRBs. Apart from the application of rules and regulations, these universities also have responsibilities to make their students aware of the danger of the HRBs and the ways to stay away from them.

Having a health promotion policy and planning activities that raise awareness of the dangers of HRBs would be an effective starting point.

Finally, awareness-raising and training about HRBs can help the university students to keep themselves and their peers safe from engaging with HRBs. This however requires community, family and institutional support. The individuals, particularly the Saudi university students in this thesis, also need to have access to information that educates them about the danger of engaging in HRBs and the benefits of leading a healthy life (see Section 8.3.1).

10.4 Limitations and transferability

The findings of this thesis are useful in that they explore comprehensively the roots of HRBs, rather than their outcomes. Even though a group of HRBs has been investigated more generally, instead of studying one or all of them in great detail, the findings have scoped out the similarities and differences of the reasons for the engagement with HRBs in a Saudi university context at intra-personal, public engagement, and socio-cultural levels. This thesis has also employed a methodological approach and careful implementation strategies that have enabled a rich dataset that includes both quantitative and qualitative findings. However, there are some limitations in the research. Firstly, the study presents the findings of a Saudi university which is situated in an urban area. The findings therefore may not be entirely transferable to other universities that are located in remote and rural settings. Secondly, in this study the survey was conducted in order to explore the existence of HRBs in the target community, whereas the interviews provided with information about the factors and

reasons responsible for the engagement with the HRBs. For this reason, it was not always possible to discuss all aspects from both the qualitative and quantitative data perspectives. Thirdly, the thesis focuses on the role of a Saudi university in the students' engagement with HRBs, but does not explore the role of social and community sectors in similar depth. Therefore, further studies will be required to understand the influence of social and community sectors in the engagement of HRBs in Saudi higher educational institutions. Moreover, the reasons for HRBs identified in this thesis require further in-depth investigations so that a more detailed relationship between these reasons and the factors of HRBs can be elucidated.

Despite these limitations, the study has been successful in identifying the factors associated with the reasons for the engagement with HRBs; knowledge of this fundamental cause will be essential in considering any educational initiatives to help control HRBs. Furthermore, as the existing types of HRBs in Saudi universities are specified, it seems helpful to be able to take effective actions for preventing these identified HRBs in a more specific manner. The findings of this study can therefore be used to inform other higher educational institutions and the wider public in Saudi Arabia about HRBs. Moreover, the exploration into the factors, reasons and types of HRBs seem to be useful to identify and prevent other types of non-health related risky behaviours, such as crime and anti-social activities. Therefore the findings and the recommendations have relevance beyond HRBs and may find resonance with similar socio-cultural situations in the wider Arab world, and possibly beyond.

10.5 Recommendations

Based on the findings of this research, the following suggestions are made which may be effective in protecting the university students in Saudi Arabia from engaging with HRBs.

a) Comprehensive plan

This research has identified several factors and reasons for the Saudi university students' engagement with HRBs. It has been found that the reasons, such as traditional practices, gender and globalisation, originate from three broad levels of intra-personal, socio-cultural and public engagement that include a range of factors. As the factors and reasons are closely associated and intertwining, it is important that these are considered holistically while preparing any plan to tackle HRBs in Saudi Arabia. It is therefore recommended that in the HRB prevention plans, the aspects of individuals, family, community and university should be considered together. This comprehensive approach should be followed while campaigning against HRBs through increasing awareness and providing information, establishing facilities (such as drug rehabilitation centres and sports facility centres) and implementing relevant laws and rules to support Saudi youths to stay safe from the engagement with the HRBs. It is also important that different professionals, such as university teachers, law enforcement officers and health officials, should collaborate and work together to protect Saudi youths to stay safe from any engagement with HRBs.

b) HRB specific prevention measures

One of the major findings of this thesis is that it has identified a number of specific HRB types and their levels of existence in a Saudi university. Generally, different sets of factors and reasons are responsible for different types of HRBs. It is therefore essential to design and implement plans to prevent HRBs that address the relevant factors and reasons of HRBs. The research findings have also shown the high, moderate and low level of existence of specific HRBs and this finding could help to decide the scale and approaches to reduce their spread. The rapid changes in society and culture mean that there is a high possibility of new and emerging types of HRBs in Saudi Arabia. It will therefore be essential to regularly monitor the possibility of the emergence of any new HRBs.

A key finding of this thesis is that in many cases the engagement with one HRB type acts as a catalyst (and reason) to engage with others. It is therefore important to recognise that, although a number of HRBs are still evident in a small scale in Saudi Arabia, there is a high chance that these are responsible for other HRBs. For this reason, existing HRBs, whether they have a low or high level of prevalence, should be treated with equal importance by relevant government, private authorities and professionals of the country. The thesis has also found several reasons of HRBs, such as traditional practices, gender, age, influence of other HRBs and lack of awareness of HRBs. For some HRBs, specific reasons are responsible and by targeting these reasons, tailored awareness building programmes could be designed that involve relevant family, peer and social connections.

c) Practical and sustainable initiatives

This thesis has shown the influence of the intra-personal, socio-cultural and public engagement factors in the students' engagement with the HRBs. The factors are mutually influential and the reasons they create for HRB engagement are also connected to each other. Because of the connections and influences of the factors and reasons of HRBs, it is important to explore practical and sustainable initiatives for preventing HRBs in Saudi Arabian higher educational institutions. The preventive measures should be effective in all the HRB-related factors and their levels. Moreover, the preventive measure for one reason should not hamper any other. For example, while considering any university-based health awareness activity, the family and social aspects of HRBs also need to be addressed, as in the holistic approach discussed above.

d) Awareness raising

Structured and continuous awareness raising activities should be conducted among the university students to prevent them from engaging with HRBs. These campaigns need to be designed to motivate students to lead healthy lives for their own benefit and also to be aware of the negative impacts of HRBs. The universities in particular should be able to provide with reliable and individualised HRB-related information, which should be easily accessible for the students. It is also essential to consider that risks, particularly HRBs, are challenging to teach because they require a multi-disciplinary and context-based approach from policy makers, education staff and students (Pratt et al., 2011). Therefore, apart from the university setting, there should

be information, counselling, wellbeing and support facilities at the community level. Print and electronic media should also highlight HRB issues, and the government and private organisations should organise programmes such as seminars and discussions to engage the general public.

Findings in this thesis highlighted that engagement of the Saudi university students with HRBs is not only restricted to the university context, but also connected to their family, society and with various social and community events. For this reason, the universities in Saudi Arabia should consider involving the students' family and social representatives along with their own university staff and law enforcement agencies in awareness raising schemes, as discussed in the holistic approach above. It is also vital to consider that the people and society in Saudi Arabia are mainly conservative where religious faith and traditional rules are strictly maintained. Therefore, the new approaches to raising awareness about leading the healthy life and avoiding HRBs may face several hindrances in the country. To prevent the obstacles of awareness raising the involvement of the social and religious leaders should be ensured.

e) University-society-family collaboration

The thesis has identified that University X does not have proper health promotion plans and programmes to prevent its students from engaging with HRBs. The collaboration and sharing between the university and the family or the community sectors are also missing, whilst the university could take the initiatives in raising awareness of HRBs with families and communities, as highlighted above. It is therefore recommended that the University should plan its HRB prevention programmes in such a manner that the students' family, associated community sectors and social

representatives can also learn. All the HRB-related campaigns should be extended beyond the university premises. For example, any university-led seminars or awareness raising events on HRB issues should involve family members, religious leaders, social club representatives and government officials. Additionally, these events should allow the participants to share their experiences, concerns and suggestions about HRBs. Their opinions should also be addressed in the HRB prevention plans and initiatives.

f) Continuous investigation and research

Although this thesis has explored the factors, reasons and types of the HRBs in a Saudi university context, it has a number of limitations too (see Section 10.3.4 above). To overcome these limitations, several research projects need to be conducted. It may be helpful to focus future research on any individual HRB in Saudi higher educational institutions across urban and rural settings of the country. Further investigations of the individual reasons and their relationship with the factors of HRBs are also needed. As this thesis is the first attempt of the mixed method research in the investigation of HRBs, more similar explorations are needed to provide more rigorous evidence on this issue. Moreover, the relationship between HRBs and healthy behaviours need to be further explored so that the outcomes of the reasons of HRBs and their preventive measures are understood more comprehensively and also from a contributory position.

10.6 Future research direction

The findings of this thesis have provided a detailed understanding about the current HRB situations in one Saudi higher educational institution. It has elaborated on how wider intra-personal, socio-cultural and public engagement contexts create several factors and reasons for HRBs. Based on the outcomes of the thesis, it is now possible to extend this research to further explore the role of the authorities and academics in the students' engagement with the HRBs. In this regard, the perspectives and experiences of university authorities, educators and service providers can be collected to understand students' HRB-related behaviours and perceptions in a more comprehensive manner. Another possible investigation area is the role of globalisation in the process of HRB engagement. Aspects of globalisation are varied, such as the influence of media and cross-cultural issues, which have a direct impact on the spread of HRBs in Saudi higher educational institutions. As a continuation of this study, similar research can also be conducted for the students at lower stages of education (such as secondary level) and also with those who have finished their higher education. Additionally, to explore HRBs in Saudi Arabia, or in any other country context, more holistically, research projects addressing the macro-influences on individuals, such as societal, educational and economic structures, could be initiated.

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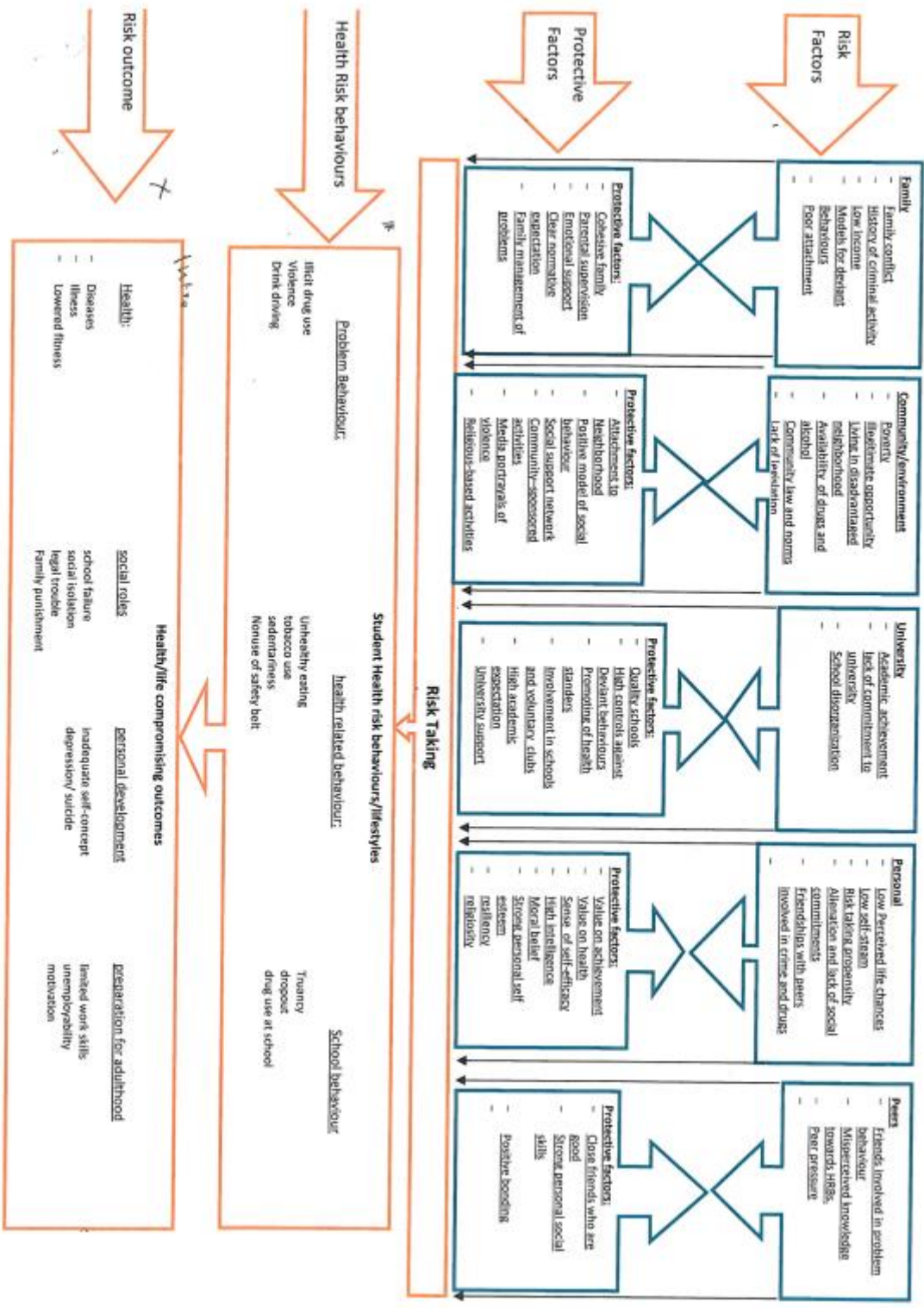
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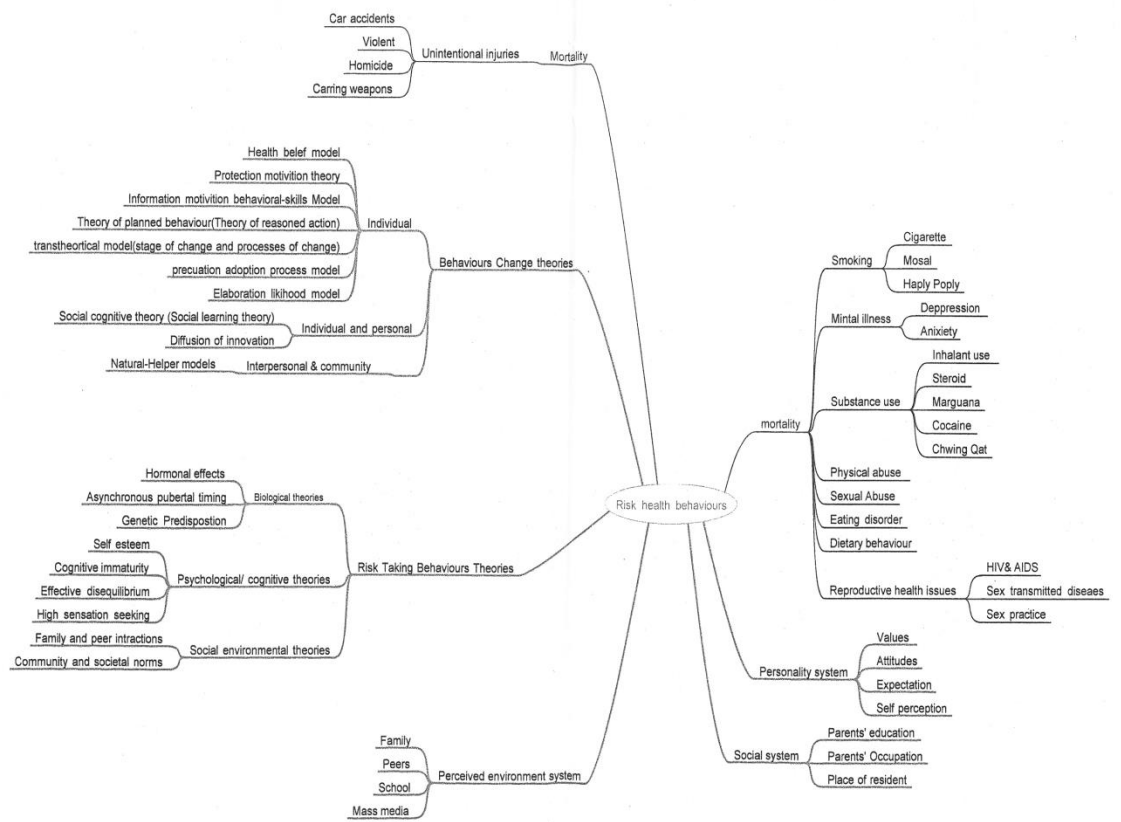
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Appendices

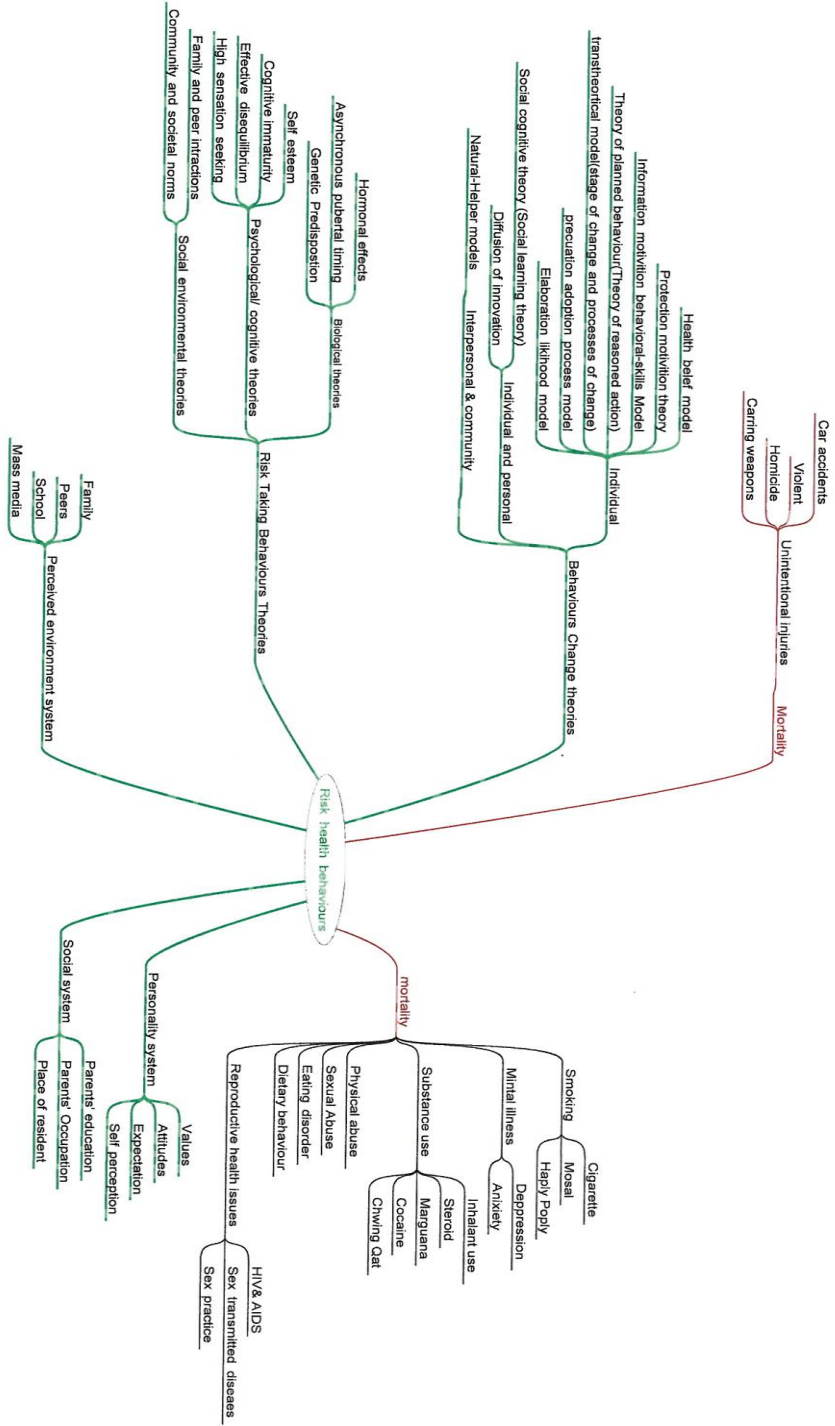
Appendix 1 (initial framework)



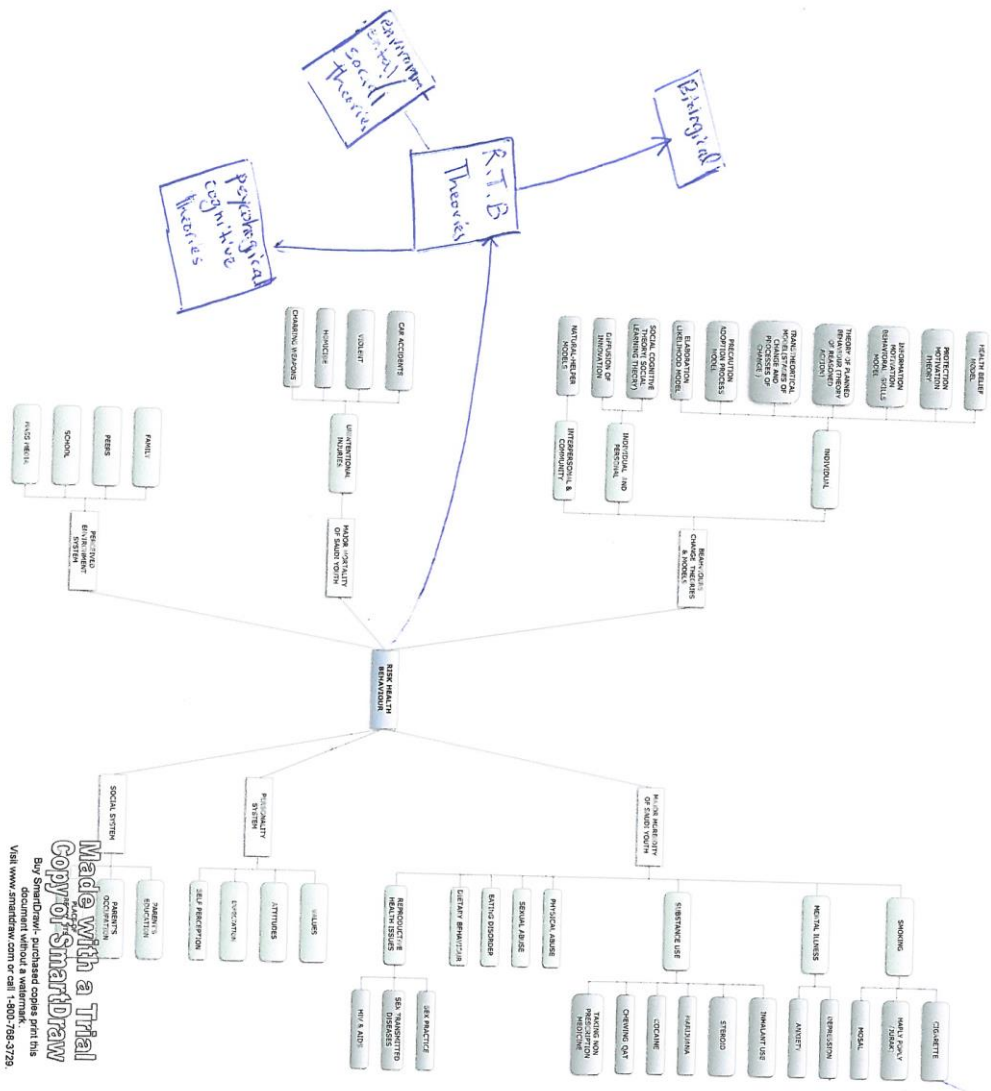
Appendix 2 (initial mind map of my study 1)



Appendix 3 (initial mind map of my study 2)



Appendix 4 (Related theories and models of my study)



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19. Have you ever tried cigarette smoking, even one or two puffs?
 A. Yes
 B. No
20. How old were you when you smoked a whole cigarette for the first time?
 A. years old
 B. I have never smoked a whole cigarette
21. During the past 30 days, on how many days did you smoke cigarettes?
 A. Never
 B. days
22. During the past 30 days, on how many days did you smoke Mosaal?
 A. Never
 B. days
23. During the past 30 days, on how many days did you smoke Sheesha?
 A. Never
 B. days
24. During the past 12 months, did you ever try to quit smoking cigarettes?
 A. I did not smoke during the past 12 months
 B. Yes
 C. No
25. During the past 12 months, did you ever try to chewing Khat?
 A. Yes
 B. No
 C. I prefer not to answer
26. During your life, how many times have you taken steroid pills without a doctor's prescription?
 A. Yes
 B. No
 C. No response
27. What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?
 A. Never
 B. times
28. During your life, did you encounter someone your age who has been drinking alcohol?
 A. Yes.
 B. No.
 C. I prefer not to answer
29. During your life, did you encounter someone your age who has been using marijuana?
 A. Yes
 B. No
30. During your life, have you ever been asked to use cocaine, including powder, crack, or freebase?
 A. Yes
 B. No
31. During the last 12 months, has any of your closest friends sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high?
 A. Yes
 B. No
 C. No answer
32. How do you describe your weight?
 A. Slightly underweight
 B. Very underweight
 C. About the right weight
 D. Slightly overweight
 E. Very overweight
33. Which of the following are you trying to do about your weight?
 A. Lose weight
 B. Gain weight
 C. Stay the same weight
 D. I am not trying to do anything about my weight
34. During the past 30 days, did you exercise to lose weight or to keep from gaining weight?
 A. Yes
 B. No
35. During the past 30 days, did you eat less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight?
 A. Yes
 B. No
36. During the past 30 days, did you go without eating for 24 hours or more to lose weight or to keep from gaining weight?
 A. Yes
 B. No
37. How many of the past 7 days did you eat breakfast?
 A. Never
 B.days
38. During the past 7 days, how many times did you eat at a fast food restaurant?
 A. Never
 B. times
39. During the past 7 days, how many times did you eat fruit?
 A. I did not eat fruit during the past 7 days
 B. 1 to 3 times during the past 7 days
 C. 4 to 6 times during the past 7 days
 D. 1 time per day
 E. 2 times per day
 F. 3 times or more per day

40. During the past 7 days, how many times did you eat green salad?
- I did not eat green salad during the past 7 days
 - 1 to 3 times during the past 7 days
 - 4 to 6 times during the past 7 days
 - 1 time per day
 - 2 times per day
 - 3 times or more per day
41. During the past 7 days, how many times did you drink soft drinks such as Coke, Pepsi, or Sprite?
- I did not drink soft drink during the past 7 days
 - 1 to 3 times during the past 7 days
 - 4 to 6 times during the past 7 days
 - 1 time per day
 - 2 times per day
 - 3 times or more per day
42. During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?
- None
 - days
43. On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as football, running, swimming, or similar aerobic activities?
- None
 - day
44. On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?
- None
 - days
45. On an average school day, how many hours do you watch TV?
- I do not watch TV on an average school day
 - 1 hour or less per day
 - 2 hour per day or less
 - 3 hours per day
 - 4 hours per day
 - 5 hours or more per day
46. On an average school day, how many hours do you play video or computer games or use a computer for something that is not school work? (Include activities such as Nintendo, Game Boy, Play Station, computer games, and the Internet.)
- I do not play video or computer games or use a computer for something that is not school work
 - 1 hour per day
 - 2 hour per day
 - 3 hours per day
 - 4 hours per day
 - 5 hours or more per day
47. Have you ever been taught about AIDS or HIV infection in school?
- Yes
 - No
 - Not sure

48. Have you ever been taught about Hepatitis (A, B, C, or D)?
- Yes
 - No
 - Not sure
49. Have you ever been tested for a sexually transmitted disease (STD) including HIV, the virus that causes AIDS?
- Yes
 - No
 - Not sure
50. During your life, did you receive information about sexually transmitted diseases?
- Yes
 - No
 - Not sure
51. Which of the following activities have you done:
- Scuba diving
 - Auto racing
 - Motorcycle racing
 - Thrill-seeking
 - Doing martial arts
 - None of these activities
52. To what extent do you consider yourself to be a risk-taker?
- | | | | | | | | | | | | |
|-----|---|---|---|---|----------|---|---|---|----|--|------|
| Low | | | | | Moderate | | | | | | High |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
53. What is your gender:
- Male
 - female

**This is the end of the survey.
Thank you very much for your help**

Appendix 7 (the interview)

i) Greeting and introduction

[This is the opening information which may be modified and extended according to the interview situations. The information sheet on the research and the written consent form will be distributed at the appropriate time. Additionally the interviewees will be informed that their interviews will be audio recorded and they will be asked for their consent to do this.]

First of all, I would like to thank you for agreeing to participate in this interview. I assure you that the information received from this interview would be anonymous and it would be used only for research purposes. The responses will be kept confidential and be used for the purpose of the current study only. I can confirm that the data will be owned by me and no-one else will be able to access it. You should be happy to know that you have the full right to withdraw from participating in this study at any time, and for any reason.

Now, do you have any questions before we start?

ii) Questions and answers

[The following statement is the basic information to provide to the interviewees so that they have a clear understanding on the issues involved in the questions they answer]

Health Risk Behaviours (HRBs) are prevalent among young people all around the world. However, less known about the engagement in HRBs among young people at the university level in Saudi Arabia. One definition of HRBs is the types of behaviours that appear at adolescent age and that can, in a direct or indirect way, jeopardize social and psychological well-being as well as physical health in the present and future.

[The following questions, question 1, will be asked as opening question. The reasons for asking it is to allow the interviewees some time to think and reflect on the topic and to ask questions for clarifications]

1. What do you think are the major HRBs among students at this university?

[The questions (question 'a' to 'h') below are prompts for the above question (question 1) if the answers do not cover the areas. These questions have in fact emerged from the survey among the

1

students of this university, and the answers of the interviewees might reinforce the received data and provide an in-depth understanding on the issues]

- a) Why do the students at this university sometimes not fasten their seatbelts?
 - b) Why do the students at this university sometimes carry a weapon (such as a gun, knife, or club)?
 - c) Why do female students at this university sometimes get involved in physical fights?
 - d) Why do the students at this university smoke?
 - e) Do you know why some students drink alcohol here?
 - f) Why are the students of this university sometimes not physically active?
 - g) Why do some students not eat green salads, vegetables and fruit? Why do some students drink soft drinks?
 - h) Do you consider the learning about HIV/AIDS and other STDs important for the students of this university? Why do/don't you think so?
2. Why do you think some HRBs are more prevalent than others?
 3. Why do you think the students at this university might engage in HRBs?
 4. What are the factors that influence the students here to indulge in HRBs?

[The following questions (from 'i' to 'r' are prompts for the question 2,3 and 4 if the answers do not cover the areas. The prompts are arranged according to five themes, and among them most are open ended and opinion based. Before moving to them I may explain the meaning of the risk and protective factors briefly to the interviewees so that they get a clear idea about the questions they answer.]

Let me explain what is meant by risk and protective factors, particularly in this university context. Risk factors generally refer to the factors that predispose the students of this university to HRBs. On the other hand, protective factors refer to those that protect them from engaging in risky behaviours. The risk and protective factors are often the same, but their functioning (either as risk factors or as protective factors) is influenced by their structuring within family, community, university, peers, and personal/individual circumstances.

(Personal/individual)

- i) Why are some students involved in HRBs but others are not?

(The questions below are prompts for question 'a' if the answer does not cover the areas)

- Do you think that all students maintain the traditional norms and values of their families, community and university?
- How does their self-esteem help avoiding HRBs?
- Do you think that they are aware of the outcomes of HRBs?
- Why are male students engaged in risky activities more than female students?

(Family related)

- j) What do you think are the influences that families might have on a student with regard to HRBs?
- k) Do you think their circumstances (such as the economic situation, relationship and feeling among family members) influence the students of this university to indulge or avoid HRBs?

(Community related)

- l) What do you think are the influences that communities play in influencing university students to avoid or engage with HRBs?
- m) What about the role specific bodies/ sectors in our Saudi community play in HRBs amongst young people?
- n) What could our Saudi community bodies/sectors do to improve the university students' health and lifestyle behaviours? What should be their responsibilities to help the university students to avoid the risk factors?
- o) Do you think that laws and legislations applied by Saudi authorities to tackle the HRBs are sufficient? Why do you think so?
- p) *Do you think that there is an acceptance for the HRBs by the Saudi culture? Why do you think so (or, what evidence/ examples can you provide?)*

(University related)

- q) How do you think this university has helped promoting healthy behaviours and health life style among the students?

(Peer related)

Appendix 8 (Quantitative Analysis, tables)

Table 7: Mean score of violence of male respondents

Questions	N	No of respondents who answered 'Yes'	Minimum	Maximum	Mean
Q:15B During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?	432	51	1	30	14.96
Q:16B During the past 12 months, how many times were you in a physical fight?	431	100	1	20	2.60

Table 8: Mean score of violence of female respondents

Question	N	No of respondents Who answered 'Yes'	Minimum	Maximum	Mean
Q:15B During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?	291	20	1	30	10.05
Q:16B During the past 12 months, how many times were you in a physical fight?	291	57	1	11	3.23

Table 10: Frequency and percentage of respondents smoking

Questions		Frequency	Percent
Q: 19 Have you ever tried cigarette smoking, even one or two puffs?	Yes	468	64.8
	No	254	35.2
Total = N=722		722	100.0
Q:24 During the past 12 months, did you ever try to quit smoking cigarettes?	Don't smoke	391	54.2
	Yes	133	18.4
	No	196	27.1
	Missed	2	0.3
Total=722		722	100

Table 11: Frequency and percentage of male respondents smoking

Questions		Frequency	Percent
Q:19 Have you ever tried cigarette smoking, even one or two puffs?	Yes	346	80.1
	No	86	19.9
Total= 432		432	100.0
Q:24 During the past 12 months, did you ever try to quit smoking cigarettes?	Don't smoke	194	44.9
	Yes	76	17.6
	No	160	37
	Missed	2	0.5
Total=432		432	100

Table 12: Frequency and percentage of female respondents smoking

Questions		Frequency	Percent
Q:19 Have you ever tried cigarette smoking, even one or two puffs?	Yes	122	38.1
	No	168	61.9
Total		290	100.0
Q:24 During the past 12 months, did you ever try to quit smoking cigarettes?	Don't smoke	197	68
	Yes	57	19.6
	No	39	12.4
Total=290		290	100

Table 13: Frequency and percentage of smoking aspect

Questions		Frequency	Percent
Q:21 During the past 30 days, on how many days did you smoke cigarettes?	Never smoke cigarettes	393	54.4
	Smoke cigarettes	328	45.4
	Missed	2	0.20
Q:22 During the past 30 days, on how many days did you smoke Mosaal?	Never smoke Mosaal	561	77.7
	Smoke	160	22.2
	Missed	1	0.1
Q:23 During the past 30 days, on how many days did you smoke Sheesha?	Never smoke Sheesha	675	93.5
	Smoke	47	6.5

Table 14: Mean scores on smoking aspects for all respondents

Item	N	Mean	Minimum	Maximum
Q:20 How old were you when you smoked a whole cigarette for the first time?	720	17.26 years old	8	26
Q:21 During the past 30 days, on how many days did you smoke cigarettes?	720	18.95 days	1	30
Q:22 During the past 30 days, on how many days did you smoke Mosaal?	721	9.52 days	1	30
Q:23 During the past 30 days, on how many days did you smoke Sheesha?	722	8.57 days	1	30

Table 15: Mean scores on smoking aspects for male

Question	N	Minimum	Maximum	Mean
Q:20 How old were you when you smoked a whole cigarette for the first time?	431	8	24	16.65 years old

Table 16: Mean scores on smoking aspects for female

Question	N	Minimum	Maximum	Mean
Q:20 How old were you when you smoked a whole cigarette for the first time?	290	11	26	18.5

Table 18: Frequency and percentage of friends' experience of illegal use in the last 12 months for all respondents

Questions		Frequency	Percent
Q: 27 What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?	Never met someone	637	88.4
	Met someone	84	11.6
Total		721	100

Table 19: Frequency and percentage of friends' experience of illegal use in the last 12 months for female respondents

Questions		Frequency	Percent
Q: 27 What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?	Never met someone	282	96.9
	Met someone	9	3.1
Total		290	100

Table 20: Frequency and percentage of friends' experience of illegal use in the last 12 months for male respondents

Questions		Frequency	Percent
Q: 27 What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?	Never met someone	356	82.6
	Met someone	75	17.4
Total		431	100

Table 21: Mean scores on drug use and alcohol among all respondents

Questions	N	Minimum	Maximum	Mean
Q:27 What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?	721	1	60	8.9

Table 22: Mean scores on drug use and alcohol aspects female respondents

Question	N	Minimum	Maximum	Mean
Q:27 What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?	290	0	2	.05

Table 23: Mean scores on drug use and alcohol aspects male respondents

Question	N	Minimum	Maximum	Mean
Q:27 What do you think is the maximum numbers of times any of your closest friends have used illegal drugs in the last 12 months?	431	0	60	1.7

Table 35: Frequency and percentage of transmitted disease

Question		Frequency	Percent
Q:47 Have you ever been taught about AIDS or HIV infection in school?	Yes	388	46.8
	No	325	45.0
	Not sure	59	8.2
Total		722	100
Q:48 Have you ever been taught about Hepatitis (A, B, or C)?	Yes	187	25.9
	No	472	65.4
	Not sure	63	8.7
Total		722	100
Q:49 Have you ever been tested for a sexually transmitted disease (STD) including HIV, the virus that causes AIDS?	Yes	30	4.2
	No	688	95.3
	Not sure	3	0.4
Total		721	100
Q:50 During your life, did you receive information about sexually transmitted diseases?	Yes	223	30.9
	No	471	65.2
	Not sure	28	3.9
Total		722	100

Table 36: Frequency and percentage of transmitted disease for male respondents

Question		Frequency	Percent
Q:47 Have you ever been taught about AIDS or HIV infection in school?	Yes	203	47.0
	No	193	44.7
	Not sure	36	8.3
Total		432	100.0
Q:48 Have you ever been taught about Hepatitis (A, B, or C)?	Yes	93	21.5
	No	304	70.4
	Not sure	35	8.1
Total		432	100.0
Q:49 Have you ever been tested for a sexually transmitted disease (STD) including HIV, the virus that causes AIDS?	Yes	18	4.2
	No	411	95.1
	Not sure	3	0.7
Total		432	100.0
Q:50 During your life, did you receive information about sexually transmitted diseases?	Yes	138	31.9
	No	275	63.7
	Not sure	19	4.4
Total		432	100.0

Table 37: Frequency and percentage of transmitted disease for female respondents

Question		Frequency	Percent
Q:47 Have you ever been taught about AIDS or HIV infection in school?	Yes	135	46.4
	No	133	45.7
	Not sure	23	7.9
Total		291	100.0
Q:48 Have you ever been taught about Hepatitis (A, B, or C)?	Yes	94	32.3
	No	169	58.1
	Not sure	28	9.6
Total		291	100.0
Q:49 Have you ever been tested for a sexually transmitted disease (STD) including HIV, the virus that causes AIDS?	Yes	12	4.1
	No	278	95.5
	Not sure	1	0.3
Total		291	100.0
Q:50 During your life, did you receive information about sexually transmitted diseases?	Yes	85	29.2
	No	197	67.7
	Not sure	9	3.1
Total		291	100.0

Appendix 9 (Consent form English)



CONSENT FORM (Version 2)

Study title: Health Risk Behaviours among university students in Saudi Arabia

Researcher name: Saad Zafir Alshehri

Ethics reference: SSEGM-12

Please initial the boxes if you agree with the statement):

1. I have read and understood the information sheet (28/1/14/version 2) and have had the opportunity to ask questions about the study.
2. I expect that the interview will take about (45 minutes).
3. There will not be a compensation for this interview.
4. I agree to take part in this research project and agree for my data to be used for the purpose of this study.
5. I understand my participation is voluntary and I may withdraw at any time without consequence.
6. This project will be completed by 2014. All interview recordings will be stored in a secure place at Southampton University until 2015 after that date. The recordings will then be destroyed.

Please contact me on telephone: +44 (0)77 0955 2839, 00955506985521,
Email: sza1e10@soton.ac.uk

If there is anything you do not particularly like about this research with the way it has been conducted and you can report to:
Professor Rosalind Edwards, Chair of the Faculty Ethics Subcommittee as an independent academic member of staff.
University of Southampton
Email: R.S.Edwards@soton.ac.uk, Tell: +44 (0)23 8059 5857

Name of participant (print name).....

Signature of participant.....

Name of Researcher (print name) Saad Zafir Alshehri.....

Signature of Researcher

[28/1/14] [Version 2]

Appendix 10 (Cover Letter for the questionnaire)

Survey Cover letter

25/07/2013

Dear Participant:

My name is Saad Zafir Alshehri and I am a PhD student at Southampton University. For my project, I am examining Health Risk Behaviour among University students. Because you are undergraduate students, I am inviting you to participate in this research study by completing the attached surveys.

The following questionnaire will require approximately thirty to forty minutes to be completed. There is no compensation for responding nor is there any known risk. In order to ensure that all information will remain confidential, please *do not* include your name. Copies of the project will be provided to my Southampton University, Ministry of Higher Education and [REDACTED]. If you choose to participate in this study, please answer all questions as honestly as possible and return the completed questionnaires promptly to the researcher who is administering this survey. Participation is strictly voluntary and you may refuse to participate at any time. Thank you for taking the time to assist me in my educational endeavours. The data collected will provide useful information regarding health promotion among university students. If you would like a summary copy of this study please complete and detach the Request for Information Form and return it to me in a separate envelope. Completion and return of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below. If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to one of the following departments:

Professor Rosalind Edwards, Chair of the Faculty Ethics Subcommittee as an independent academic member of staff.

Rosalind Edwards

Professor of Sociology

University of Southampton

Email: R.S.Edwards@soton.ac.uk

Tell: +44 (0)23 8059 5857

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

(Student's Name)
(Student Phone Number and/or e-mail address)
(Instructor's Name)
(Instructor's Phone Number and/or e-mail address)

Detach here

.....

(This request for information form is an optional part of the cover letter and is not required for IRB approval.)

Request for Information

Please send a copy of the study results to the address listed below.

Name:

Address:

Please do not return this form with your survey. Return to: Sp1e10@soton.ac.uk, Tel:00447709947838

Appendix 11 (ethical approval from the University of Southampton)

From: [Boak S.L.](#)
To: [Alshehri S.Z.](#)
Cc: [Johnson Martina](#); [Grace M.M.](#); [Byrne J.](#)
Subject: Ethics application - Alshehri (SSEGM-12)
Date: 12 December 2011 14:59:00

Dear Saad Zafir Alshehri

I am pleased to let you know that your recent ethics committee application on 'Health risk behaviour among International University's Students' has now been given ethical approval by the Faculty Ethics Committee (ref: SSEGM-12)

Please note that this email will constitute evidence of ethical approval.

We wish you every success with your research.

All best wishes
Sarah

Sarah Boak
Senior Research Support Officer
Research and Innovation Services
Faculty of Social and Human Sciences
Building 44, Room 2055
s.l.boak@soton.ac.uk
x28101
T: 02380 598101

Please note, I work as a jobshare with Martina Johnson m.t.johnson@soton.ac.uk
My days of work are Mondays, Wednesdays and Thursdays.

Appendix 12 (Interview transcript Arabic for one participant)

ب.١٠

السلام عليكم ورحمة الله وبركاته

هذه المقابلة صممت لجمع بعض المعلومات وأخذ آراء الطلاب في الجامعة عن خبراتهم أو خبرات أقرانهم عن بعض الممارسات السلوكية الخطرة المؤثرة على صحتهم. بادئ ذي بدء أتقدم بالشكر الجزيل لك على موافقتك على اجابة الدعوة للإجابة عن أسئلة المقابلة، علما بأن جميع المعلومات التي سوف يحصل عليها الباحث سوف تستخدم في أغراض البحث من قبل الباحث فقط ولن يذكر أي معلومات أو بيانات للطلاب والطالبات المحبيين عن هذه الأسئلة، وللعلم فإن هذه الإجابات سوف تحفظ في مكان لن يطلع عليه غير الباحث وهو مكان سري وآمن وسوف تستخدم لأغراض البحث. لك الحق التام في الانسحاب من المقابلة في أي وقت ومن غير ذكر لأسباب العدول عن المشاركة وهذا ما تفرضه على أخلاقيات البحث في الجامعة التي أدرس فيها ولك الحق في التواصل مع جامعة ساوثهامبتون و التقدم بأي استفسار أو شكوى من خلال العنوان المذكور في إقرار الموافقة الموقع من قبلكم قبل أن نبدأ هذه المقابلة.

الباحث: قبل البدء في إجراء المقابلة هل لديك أي استفسار أو سؤال؟
الطالبة: حاليا اطلعت على النموذج وعندني خلفية عن الموضوع.

المعلومات التالية تعطى بعض التوضيح المبسط عن مشكلة الدراسة مجال البحث ...
الممارسات السلوكية الخطرة المؤثرة على صحة الشباب منتشرة بين كثير من الشباب على مستوى العالم، لكن القليل جدا من المراجع والأبحاث العربية محليا أو إقليميا استقصت أسباب هذه المشكلة أو بحثت في أسباب اشتراك الطلاب في مثل هذه الممارسات خصوصا بين طلاب وطالبات المرحلة الجامعية. وقد عرفت هذه الممارسات السلوكية على أنها "أي نوع من السلوكيات التي تظهر في سن المراهقة والتي من شأنها بطريقة مباشرة أو غير مباشرة أن تشكل خطرا على النواحي الصحية سواءا كانت اجتماعية أو نفسية أو جسدية للشباب والشابات في حاضر حياتهم أوفي المستقبل.
وتجدر الإشارة إلى أن الباحث حدد دراسة الممارسات التالية:

- السلوكيات المؤدية لحوادث السيارات
- السلوكيات المؤدية للعنف
- تعاطي الكحول والمخدرات
- شرب الدخان والمعسل والشيشة
- قلة ممارسة التمارين الرياضية
- سلوكيات التغذية الخاطئة
- ممارسة العلاقات الجنسية المحرمة المؤدية إلى انتقال الأمراض الجنسية المعدية

الأسئلة:

الباحث: ماهي أبرز هذه الممارسات السلوكية المنتشرة بين الطلاب والطالبات؟

الطالبة:

عدم ممارسة الرياضة من أهم شيء السلوكيات
وكذلك سوء التغذية
السلوكيات الحوادث المؤدية للسيارات

ويتفرع عن هذا السؤال الأسئلة التالية :

الباحث: لماذا لا يتقيد بعضا من طلاب وطالبات هذه الجامعة بربط حزام الأمان عند قيادة السيارة أو الركوب مع أحد آخر يقود السيارة؟

الطالبة: هناك شبكة من الاسباب مرتبطة ببعضنا منها النفسية المزاجية عدم الرغبة في التقيد بالأنظمة وكذلك عدم توفر الاحتياجات في حياة الشاب أو الشابة.

الباحث: لماذا يحمل بعضا من طلاب وطالبات الجامعة بعض أنواع الأسلحة كالكسكين أو العصا أو المسدس؟

الطالبة: للدفاع عن النفس واثبات الهوية

لماذا قد يشترك بعضا من طالبات الجامعة في العنف الجسدي ؟

الطالبة: وهو مبرر لشيء داخلي نقص يجعل الشخص يمارس هذه الأشياء وقد يكون البعض مظلوم فتربى على الحصول على حقوقه عن طريق العنف.

الباحث: لماذا يدخل بعضا من طلاب وطالبات الجامعة؟

الطالبة: يعني منشأ بسبب عدة اسباب:

مجرد تقليد للزملاء والأصحاب أو الهروب من الضغوط النفسية

الباحث: لماذا يتعاطى بعض الطلاب والطالبات الجامعيين بعض المسكرات والمخدرات ؟

الطالبة: يبدأ الطالب بالتعاطي كإظهار للشخصية و تقليد للآخرين. و اتوقع أن هذا ليس بسبب الضغط النفسي.

الباحث: لماذا لا يمارس طلاب وطالبات الجامعة القدر الكافي من الرياضة أو غير نشيطين بدنيا ؟

الطالبة: يمكن اتوقع بسبب انتشار التكنولوجيا بين الشباب والرفاهية فالشاب والشابة يجلسوا مدة طويلة تصل إلي ثمان ساعات يجلسوا فيها على وسائل التقنية من غير وعي للإضرار التي تسببها هذه التكنولوجيا.

الباحث: لماذا يعزف بعضا من طلاب وطالبات الجامعة عن أكل الفواكه والخضروات والسلطة الخضراء؟

الطالبة: نحن في عصر السرعة فانتشرت الوجبات السريعة وارى ان الشباب لا يميلوا للطبخ من أجل مقابلة ضغوط الوقت والحياة.

الباحث: لماذا ينتشر بين بعض من الطلاب والطالبات شرب المشروبات الغازية؟

الطالبة:

الباحث: هل تعتبر نشر الوعي بين الطلاب والطالبات عن الأمراض المعدية مثل الإيدز ومرض نقص المناعة المكتسبة

وأمرض الكبد الوبائي لطلاب الجامعة ؟ لماذا تعتبر ذلك هاما أو غير هام بالنسبة لصحتهم ؟

الطالبة: أنا ارى أن هناك اهمية بتوعية الطلاب والطالبات بتجنب العلاقات الجنسية المحرمة بين الشباب والشابات لا نها السبب في انتقال الأمراض الجنسية المعدية في مرحلة الجامعة وما قبل الجامعة في المدارس العامة.

١. لماذا تنتشر بين بعض من الطلاب والطالبات بعض من الممارسات السلوكية الخطرة المؤثرة على صحتهم ؟

وماهي العوامل التي تدفعهم للانخراط في هذه السلوكيات؟

ارى أن اهم العوامل هي العائلة ومن ثم الأصدقاء.....

يرى العلماء والباحثين أن هناك خمسة عوامل رئيسية تدفع الشباب أو الشبابات للانخراط في ممارسة بعض السلوكيات الخطرة المؤثرة على صحتهم وهي: المجتمع، الجامعة، الأسرة، الأقران، الفرد نفسه. هذه العوامل يطلق عليها عوامل الحماية والخطر في نفس الوقت، فهي قد توفر الحماية أو المناعة للشباب أو الشبابة بالحد أو المنع من ممارسة السلوكيات الخطرة ومن ناحية أخرى قد تكون هذه العوامل محفزة ومسهلة للانخراط في السلوكيات الخطرة المؤثرة على الصحة.

٢. لماذا البعض السلوكيات الخطرة المؤثرة على صحة الطلاب منتشرة والبعض الآخر غير منتشر في طلاب وطالبات الجامعة؟

الطالبة: يعتمد على خطورة السلوك التي يعرفها المجتمع والأسرة فكلما كانت هناك خطورة عالية ترى أن هناك قلة من الطلاب من يمارسها مثل العلاقات المحرمة الجنسية والمخدرات.

٣. لماذا قد يشترك بعض الطلاب والطالبات في الجامعة في هذه السلوكيات؟

٤. ماهي العوامل تدفع بعض الطلاب والطالبات للممارسة مثل هذه السلوكيات؟
العوامل الشخصية (الذاتية)

١. لماذا يمارس بعضا من طلاب وطالبات بعضا من السلوكيات الخطرة المؤثرة على صحتهم والبعض الآخر قد لا يمارسها؟

اسئلة فرعية:

الباحث: هل تعتقد أن الطلاب والطالبات في هذه الجامعة يحافظوا على الأخلاقيات والقيم الحسنة التي تشرىوها من مجتمعهم وعائلاتهم وجامعتهم؟

الطالبة: حاليا في هذا العصر لا اعتقد انهم يلتزموا بعادات المجتمع وتقاليده واخلاق العائلة .

الباحث: فماذا بالنسبة لأخلاقيات الجامعة وتقاليدها.

الطالبة: نسبة منهم يتبعوا لعادات الجامعة قد يكون النصف والبعض الآخر عندهم رغبة في الخروج على القانون والذين يخالفوا العادات ظرا لنقص الذات.

الباحث: كيف ترى أهمية "تقدير الذات" بين طلاب وطالبات الجامعة في تجنب الوقوع في ممارسة السلوكيات الخطرة المؤثرة على الصحة؟

الطالبة: عند الطالب الذين يمارسوا عدم تقدير للذات.

الباحث: هل تعتقد أن طلاب وطالبات الجامعة يعوون النتائج المؤثرة سلبا على صحتهم العاجلة والأجله جراء الانخراط في هذه الممارسات؟

الطالبة: ارى ان التوعية بدأت من سنة فقط وذلك بالتركيز على طاقة الطلاب المهملة وتقديرهم ومن البرامج التي توعي الطلاب بصحتهم كالنشاطات الرياضية ومطاعم الجامعة يجب أن تقدم أكل صحي. ولكن للأسف ليس منها أي من البرامج اساسية بالتوعية الصحية.

الباحث: لماذا الطلاب الذكور أكثر جراءة في ممارسة هذه السلوكيات الخطرة أكثر من الطالبات؟

الطالبة: لا يوجد قيود على الأولاد اجتماعية مقارنة بالبنات.

العوامل الأسرية

الباحث: ما هو دور الأسرة في التأثير على الطلاب في ممارسة أو تجنب السلوكيات الخطرة المؤثرة على الطلاب والطالبات؟

الطالب: غياب الأهل عن الأبناء و التحدث معهم ومناقشة مشكلاتهم يؤدي إلى زيادة الانخراط في السلوكيات وهو غياب تربية. وهذا له دور في التوجيه واعرف من الأسر من لا يرى ابنائهم لمدة ثلاثة ايام فغياب الأهل له دور وغيابهم يؤدي لغياب توعية وتوجيه.....

هل ترى أن الظروف الأسرية كالحالة الاقتصادية أو علاقات الوالدين أو المستقرة أو غير المستقرة قد تؤثر على الطلاب أو الطالبات في الانخراط في تلك السلوكيات الخطرة أو تجنبها ؟
الطالبة: ارى ان العلاقات الجيدة بين الأهل مهمة جدا والطالب أو الطالبة في مرحلة حساسة جدا لأنها مفترق طرق ويعاني الطلاب من ضغط وتخطيط ويحتاج لمن يساعده في صنع القرارات وايجاد الحلول للكثير من المشكلات واذا انشغل الوالدين مشكلاتهم وعد الاستقرار والمشكلات الأسرية فانه هن المحتمل أن يمارس أو يميل إلى بعض الأقران الذين يعانون من نفس المشاكل وهذا يقودهم إلى ممارسة بعض السلوكيات الخطرة

العوامل المجتمعية

الباحث: ما هو دور المجتمع في التأثير على طلاب وطالبات الجامعة في تبني السلوكيات الخطرة أو الحماية منها؟
الطالبة: ارى ان دور المجتمع قد يؤثر سلبا أو ايجابيا ولكن ارى أن المجتمع والجامعة يجب أن يركز على الطلاب الناجحين وتعتني بهم حتى يحذوا الطلاب الذين يشتركوا في الممارسات السلوكية الخطرة حذوهم ويتعدوا عن الممارسة الخطرة وهذا يعزز لدينا لا قدوة أو الموديل بين الشباب بدلا التركيز على الطلاب الذي يمارسوا هذه الأشياء.

الباحث: ما هو تقييمك لتأثير مؤسسات وقطاعات المجتمع السعودي في الحماية من السلوكيات الخطرة أو تجنبها بين الشباب والشابات من طلاب الجامعة؟
ارى التأثير غير جيد ولكن بدأ التحدث عن هذه المشكلات.

الباحث: ما هو الدور التي يمكن تقوم به القطاعات الحيوية في المجتمع لتحسين وتطوير سلوكيات انماط وأساليب الحياة لطلاب وطالبات الجامعة ؟ وماهي المسؤوليات الملقاة على عاتق هذه القطاعات لمساعدة الطلاب في الجامعات على تجنب عوامل الخطر؟
الطالبة: ارى أن الدور ضعيف جدا في مواجهة هجمة التغريب المنظمة . ولذلك ارى عقد مزيد من الدورات والفاعليات المناسبة للشباب والشابات واشراكهم فيها لكي يتحملوا المسؤولية.

الباحث: هل تعتقد أن القوانين والتشريعات الحالية كافية للتصدي للسلوكيات الخطرة المؤثرة على صحة الطلاب والطالبات؟ ولماذا تعتقد ذلك أو خلافه؟

الطالبة: ارى أنها مناسبة لحد منا

فالجامعة وضعت قوانين لمحاربة التدخين. فالجامعة وضعت شعار جامعة بلا تدخين.

الباحث ولكن كيف تبرري ارتفاع نسبة التدخين في الجامعة.

الطالبة: في اقسام البنات يطبق القانون كسحب البطاقة وفرض غرامات من الجامعة.

الباحث: هل تعتقد أن هناك نوع من القبول أو التسامح من المجتمع السعودي تجاه ممارسة طلاب وطالبات الجامعة

للسلوكيات الخطرة المؤثرة على صحتهم أم ترى خلاف ذلك ؟ هل يمكن أن تعزز أقوالك بمجموعة من القرائن أو

الامثلة؟

الطالبة: لا أرى أن هنالك تسامح من المجتمع وارى أن يكون فيه تشريعات على الجميع بدون مواربة.

عوامل البيئة الجامعية

الباحث: هل تعتقد ان الجامعة تساعد على تعزيز وتعليم سلوكيات وأنماط الحياة السليمة والصحية بين طلابها وطالباتها ؟

الطالبة: اعتقد ان الجامعة فيها تعزيز السلوكيات الحسنة.

الباحث: هل يوجد هناك ضغوط من الجامعة والتي من شأنها أن تجعل من الجامعة بيئة مساعدة لانتشار السلوكيات الخطرة.

فيه بعض الضغوطات الدراسية واعضاء هيئة التدريس ويمكن ان يرسب الطالب بدون سبب وأحيانا ما تقبل الأعدار المرضية والحقيقية وإضافة إلى عدم العدل وأنا اعرف طلاب من الجامعة انسحبوا من الجامعة الظلم الواقع عليهم .

العوامل الناتجة عن تأثير الأقران

١. الباحث: ما هو تأثير الأقران على صناعة /اتخاذ القرار بين طلاب وطالبات الجامعة بشكل عام ؟ و هل ترى أن للأقران في الجامعة دور في التأثير على بعضهم البعض في اتخاذ القرارات فيما يتعلق بالانخراط في السلوكيات الخطرة المؤثرة على صحتهم أو تجنبها ؟ إذا كان الأمر كذلك فكيف يتم ذلك؟
٢. الطالبة: أحس دور الأقران قوي حيث أن اغلب الممارسات الخاطئة تبدأ من الأقران
٣. الباحث : ما الذي يجعل الطالبة تستجيب لقريناتها؟
٤. الطالبة: عدم الوعي التام وكذلك ضعف الشخصية.

ما هو تأثير البيئة الجامعية على الطلاب للانخراط في هذه السلوكيات الخطرة المؤثرة على صحة الطلاب والطالبات أو تجنبها؟

الباحث: هل لديك أي اضافة أو استفسار بخصوص المقابلة او الأسئلة؟

الطالبة: عندي اضافة أن اطالب بنشر نتائج البحث بين الطلاب والطالبات في الجامعة وعقد فعاليات عن هذا الموضوع وأطالب بإفادة بوضع برامج مضمنة في المناهج في الجامعة لمكافحة مثل هذه السلوكيات الخطرة.

في نهاية هذه المقابلة أود أن أشكرك شكرا جزيلاً على وقتك الثمين في اعطاء هذه المعلومات القيمة والتمينة ، و أؤكد لك أن هذه المعلومات سوف تكون لغرض البحث فقط وسوف أرسل لك نص هذ المقابلة مكتوباً أن شئت . مع تمنياتي لك بالتوفيق والسداد

Appendix 13 (Interview transcript for one participant English version)

First of all, I would like to thank you for agreeing to participate in this interview. I assure you that the information received from this interview would be anonymous and it would be used only for research purposes. The responses will be kept confidential and be used for the purpose of the current study only. I can confirm that the data will be owned by me and no-one else will be able to access it. You should be happy to know that you have the full right to withdraw from participating in this study at any time, and for any reason.

Researcher: Now, do you have any questions before we start?

Participant: nothing but I want to say that I am happy participate in this research.

ii) Questions and answers

Health Risk Behaviours (HRBs) are prevalent among young people all around the world. However, less known about the engagement in HRBs among young people at the university level in Saudi Arabia. One definition of HRBs is the types of behaviours that appear at adolescent age and that can, in a direct or indirect way, jeopardize social and psychological well-being as well as physical health in the present and future.

Researcher: What do you think are the major HRBs among students at this university?

Participant: I think the most obvious HRBs are : smoking tobacco, moassal, physical inactivity, dietary behaviours and not fasten seat belt cars

These questions have in fact emerged from the survey among the students of this university, and the your answers might reinforce the received data and provide an in-depth understanding on the issues.

a) Why do the students at this university sometimes not fasten their seatbelts?

The participant: female students have not been taught about that benefit of obeying the traffic laws

b) Why do the students at this university sometimes carry a weapon (such as a gun, knife, or club)?

The participant: I have not seen any of those you have mentioned. However, it might be because of they using them for self-defence and show their autonomy.

c) Why do female students at this university sometimes get involved in physical fights?

The participant: I think they do that as justification for inner feeling for inferiority complex or may be because those individuals have been insulted by one the family members and she see that as a way of getting their rights.

d) Why do the students at this university smoke?

The participant: I think the rapid spread of smoking habit among girls because they consider that a fashion or style. Also they might smoke because the school pressure and overload of assignments in their schools.

e) Do you know why some students drink alcohol and take drugs here?

The participant: some take drug and I hear about some female in their conversations drink alcohol but it is still very limited cases. However, they do that because of peer pressure may be or they don't look anyone to categorise them as unopened minded people. Also, most of case that went through these experiences has travel abroad to some liberal countries. They take drug and alcohol usually in mixed parties where no gender segregation.

f) Why are the students of this university sometimes not physically active?

The participant: I can assure you that we are most of our times not active. This is because of lack of education that supported by society traditions. Also, female and male students in our society mostly live a luxury live and using technology too much. They are addicted to technology like TVs, I Pads, tablets, PlayStation, etc... technology is predominant our lives.

g) Why do some students not eat green salads, vegetables and fruit? Why do some students drink soft drinks and eat fast food?

The participant: we are in the era of speed and therefore girls don't have time to cook or thinking about healthy food to meet that increased life demands. Also eating unhealthy food or drink soft drink become bad habits because the power of advertisement.

h) Do you consider the learning about HIV/AIDS and other STDs important for the students of this university? Why do/don't you think so?

The participant: I believe there is strong need to lunch health education and promotion courses at the university and in schools. We all heard about the increase numbers of young people affected by AIDS and other STDs.

2. Why do you think some HRBs are more prevalent than others?

The participant: I think some of them spread because they are less dangerous in the society, family viewpoint. Therefore, less people take drug or practice illegal sex.

3. Why do you think the students at this university might engage in HRBs?

The participant: I think the engage in some HRBs because of lack commitment to Islamic moral and ethics. Some HRBs like lack of physical activity, dietary behaviour are practiced because of lack of education and support from families and also individuals have no motivation to do the healthy behaviours.

4. What are the factors that influence the students here to engage in HRBs?

The participant: I am not quite sure about that could explain more?

The researcher: Let me explain what is meant by risk and protective factors, particularly in this university context. Risk factors generally refer to the factors that predispose the students of this university to HRBs. On the other hand, protective factors refer to those that protect them from engaging in risky behaviours. The risk and protective factors are often the same, but their functioning (either as risk factors or as protective factors) is influenced by their structuring within family, community, university, peers, and personal/individual circumstances.

(Personal/individual)

i) Why are some students involved in HRBs but others are not?

The participant: I think they grow up in a society where they don't get the sufficient education about healthy behaviours. Also the family not play good role to educate their children about risk behaviours.

- Do you think that all students maintain the traditional norms and values of their families, community and university?

The participant: I think some of them maintain traditional norms but others are rebellious and want to show off.

- How does their self-esteem help avoiding HRBs?

The participant: I think most of those who engage in HRBs really have low self-esteem.

- Do you think that they are aware of the outcomes of HRBs?

The participant: I think some students aware of the negative impacts of HRBs in their lives but others don't. Those who don't, they don't believe in new scientific approaches to tackle health issues. This is very obvious among the majority of people in our society who not believe in traditional approaches to tackle diseases so they don't accept the idea of educate students about risk behaviours.

- Why are male students engaged in risky activities more than female students?

The participant: I think because of male students are not have same social restrictions as much as females do.

(Family related)

- j) What do you think are the influences that families might have on a student with regard to HRBs?

The participant: I think being busy and ignore children can increase HRBs among young people, while being open and supportive and friendly with young children at the university level is very beneficial and can limited the probability of indulging in HRBs. I know some families who don't meet their daughters and sons regularly and if they meet they meet is very short time. No time to discuss their concerns. Therefore, they turn to friends to discuss their problems and that is the time where most of female and male students expose themselves to the pressure of friends and bad people in the society using Facebook, Twitter, etc. the internet now is not secure. Men can take private photo of females and use them to threaten females by publishing such photos if they don't answer their needs. You realise how sensitive the image of women in Saudi Arabia. We hear a lot of these stories in the media every day.

- k) Do you think their circumstances (such as the economic situation, relationship and feeling among family members) influence the students of this university to engage or avoid HRBs?

The participant: I really believe keeping good relationship between family members is very fundamental to avoid HRBs. This period at the university is very sensitive. It is a crossroads period where students live under the pressure of meeting their goals in unfriendly environment. I mean by that, the university is not supportive and not fair in giving students their rights.

(Community related)

- l) What do you think are the influences that communities play in influencing university students to avoid or engage with HRBs?

The participant: most of our city districts are socially contaminated with bad behaviours and the problem there is no representative from the community to discuss this problems especially risky behaviours.

- m) What about the role specific bodies/ sectors in our Saudi community play in HRBs amongst young people?

The participant. I think it is negative roles. Look at one phenomena behaviour that contributes to car accidents. In my opinion I think the community is rejecting the government initiatives to reduce the car accidents by establishing the new traffic system Saher.

n) What could our Saudi community bodies/sectors do to improve the university students' health and lifestyle behaviours? What should be their responsibilities to help the university students to avoid the risk factors?

The participant: I think the different sectors at the community should work together to educate children and young people to avoid behaviours that may harm them or harm the whole community.

o) Do you think that laws and legislations applied by Saudi authorities to tackle the HRBs are sufficient? Why do you think so?

The participant: No media starts to discuss the need of updating the laws and legislations. However, most of these initiatives stuck somewhere and not see the light.

p) Do you think that there is an acceptance for the HRBs by the Saudi culture? Why do you think so (or, what evidence/ examples can you provide?)

The participant: I think the Saudi culture does not accepted HRBs but it is not the way of tackling this problem is not sufficient. There is no sufficient plan to do that.

(University related)

q) How do you think this university has helped promoting healthy behaviours and health life style among the students?

The participant: I think the university is trying to reduce some HRBs by using laws but not promoting healthy behaviours but I think there is great failure. I never heard about any attempt from the behalf of university of promoting healthy behaviours in a comprehensive way. For example, if they want to promote healthy dietary they should start with unhealthy food from the university.

(Peer related)

r) What do you think about the influence of peers in decision making? How important is it? Do you think that the peers at this university influence others to be engaged in HRBs? If so, how do you think they do that?

The participant: the influence of peers is very great as most of HRBs starts by the influence of peers.

5. What do you think are the influences of this university on students' behaviours with respect to HRBs?

The participant: I think the university is putting too much pressure on its students. The lecturers are not fair with students and we cannot get our rights. They don't give chance for students to discuss things or raise issues in safe way. There are great numbers of students withdraw from the university because mental health issue which increase the chance of indulging in HRBs.

The researcher: do want to add anything?

The participant: it is necessary to design some courses in health education and conduct some lectures about the potential outcomes of HRBs

iii) Greetings and further communication

After asking all the above questions I would like thank you. Before you leave I would like to assure that you got my contact details and in case if you have any questions or concern you can contact me anytime. Now you will have the choice to write your contact details if you wish to know about the findings of this research in future.