HEALTH RISK BEHAVIORS AMONG STUDENTS OF KATHMANDU

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DEDICATION

I dedicate this thesis to all the young people of Nepal and late uncle Keshab Raj Mahat.

DECLARATION

I hereby declare that this dissertation has not been submitted for the candidature of any other degree.

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AN ABSTRACT OF THE THESIS OF

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The study of Health Risk Behavior is very important for protecting adolescents and youth from negative health outcomes. Adolescents and youth get information on health behavior from family, school, media and other sources. However, despite having knowledge of Health Risk Behavior, they still have the tendency to engage in such behavior. Therefore, it is imperative to understand different factors that force them to involve in Health Risk Behavior. Given such context, this study is designed to access the major determinants of four major health risk behaviors including cigarette smoking, alcohol use, drug use and risky sexual behavior at different environmental contexts such as personal, family and community.

The research mainly followed quantitative method to explore Health Risk Behaviors and the extent to which sociodemographic, family and community level factors determine such behavior. Data was collected from 342 students through self-administered survey questionnaires as a sample, proportionately from 18 public schools in Kathmandu. Univariate (frequency and percentage), bivariate (chi-square test) and multivariate (logistic regression) were performed.

One of the key findings of the research is in relation to the prevalence of four Health Risk Behaviors. Alcohol use stands at the highest with 22.2%, followed by Risky Sexual Behavior (21.3%), cigarette smoking (19%) and drug use (3.8%). Altogether, 43.9 % of students were involved in at least one Health Risk Behavior and only 1.8 % students involved in all four Health Risk Behaviors. Gender, accompaniment, family violence and peer influences are determinants of all four major Health Risk Behaviors whereas parental factors and media determine some Health Risk Behaviors to different extents. Neighborhood and school factors are not strongly associated with Health Risk Behaviors. Gender analysis showed that male students are three times more likely to smoke and five times more likely to engage in Risky Sexual Behaviors than female students, the reason mainly being due to unequal power relations in Nepali socio-cultural context. Likewise, students staying alone are five times more likely to smoke and eight times more likely to engage in Risky Sexual Behaviors than those staying with their parents. Students who witness or are involved in family violences are four times more likely to smoke and three times more likely to use alcohol. Students whose parents monitor are three times less likely to use drug. Besides these factors, the research found that peer influence is the major determinants of Health Risk Behaviors. Students whose best friend smoked are three times more likely to smoke and seven times more likely to use alcohol. Students who watch adult movie/pron contents are three times more likely to involve in risky sexual behavior.

The high prevalence of Health Risk Behaviors among students is a complex combination of determinants at personal, family and community levels. The level and ways of interaction of students with different determinants in their ecological system indicate their potential for adopting and avoiding particular behavior. Thus, keeping in mind the extent of possible influences of the determinants in the ecological system

of the students, this research could be beneficial for researchers, scholars, policy makers, parents and school teachers to strategize the health behavior of adolescents and youth and to help reduce their engagement in Health Risk Behaviors.

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TABLE OF CONTENTS

AN ABSTRACT OF THE THESIS OF i

ACKNOWLEDGEMENTS iv

TABLE OF CONTENTS vi

LIST OF TABLES x

LIST OF FIGURES xv

ABBREVATIONS xvi

CHAPTER I 1

INTRODUCTION 1

Study Context 1

Statement of the Research Problem 5

Purpose of the Study 9

Research Questions 9

Hypotheses of the Study 10

Rationale of the Study 10

Limitations and Delimitations of the Study 13

Organization of Thesis 14

CHAPTER II 16

LITERATURE REVIEW 16

Theoretical Perspectives of HRBs and Determinants 17

Ecological System Theory of HRBs 20

Prevalence of Health Risk Behaviors 23

Determinants of Health Risk Behaviors 31

Conceptual Framework 45

Chapter Summary 49

CHAPTER III 50

RESEARCH METHODOLOGY 50

Research Philosophy 50

Research Design 52

Instrument and Scale Construction 54

Study Site, Population and Sample 57

Data Collection Procedure 59

Reliability and Validity 60

Analyzing and Interpreting Data 63

Ethical Considerations 65

Chapter Summary 67

CHAPTER IV 68

HEALTH RISK BEHAVIOR AMONG HIGHER SECONDARY SCHOOL STUDENTS 68

Characteristics of Sample 68

Health Risk Behavior (HRB) among Students 71

Socio-demographic Characteristics and HRBs 75

Family Characteristics and HRBs 77

School Characteristics and HRBs 84

Peer Influence and HRBs 87

Neighbor's Influence and HRBs 88

Media Influence 89

Chapter Summary 91

CHAPTER V 92

DETERMINANTS OF HEALTH RISK BEHAVIORS 92
Statistical Analysis Procedure 92
Cigarette Smoking Behavior 93
Alcohol Use 99
Drug Use 103
Risky Sexual Behavior 106
Analysis of Major Health Risk Behaviors and Its Determinants across three levels:
Personal, Family and Community 110
Relation of Alcohol Use with Cigarette Smoking and RSB 120
Summary of Hypothesis Testing 121
Chapter Summary 123
CHAPTER VI 124
DISCUSSION 124
Major Findings of the Study 124
Discussion of the Findings 125
Determinants of HRBs 127
Personal Level Determinants 127
Family Level Determinants 131
Community Level Determinants of HRBs 136
Chapter Summary 144
CHAPTER VII 146
SUMMARY, CONCLUSION AND IMPLICATIONS 146
Summary 146
Conclusion 148
Implications of the Research 152

REFERENCES 157

ANNEXES 187

Annex I: Chi Square Tables 187

Annex II: Sample Population 215

Annex III: Policies and Strategies 217

Annex IV: Health Risk Behavior Survey Questionnaire 219

LIST OF TABLES

Table 2.1 Bronfenbrenner's Ecological System Theory (Bronfenbrenner, 2005) 21

Table 2.2 Prevalence of HRBs among Adolescents and Youth 31

Table 2.3 Risk and Protective Factors Related to Ecological System 46

Table 3.1 Cronbach's Alpha Test (N=42) 61

Table 4.1 Socio-demographic Characteristic of the Students (N=342) 69

Table 4.2 Frequency of Categories of Parental Education and their Occupation 70

Table 4.3 Frequency of Health Risk Behaviors based on level of involvement 71

Table 4.4 Frequency Percentage of Health Risk Behaviors 72

Table 4.5 Frequency and Percentage of Health Risk Behavior of Students Involvement in Multiple Risk Behavior 75

Table 4.6 Relation of Demographic Characteristics with HRBs 77

Table 4.7 Relation of Parental characteristics with HRBs 78

Table 4.8 Relationship of Parental Interaction with HRBs 80

Table 4.9 Relationship of Family Characteristics with HRBs(N=342) 81

Table 4.10 Relation between Respondent's HRBs and Family Members' HRB Status 83

Table 4.11 Relation between Family Violence and HRBs 84

Table 4.12 Relation of Teacher-Student's Relationship with HRBs 85

Table 4.13 Relation between School Characteristics and HRBs 85

Table 4.14 Relation between Parent-School Communication and HRBs 86

Table 4.15 Relation of Peer Involvement and HRBs 87

Table 4.16 Relation between Neighbor Behavior and HRBs 89

Table 4.17 Relation between Media and Communication Channel and HRBs 90

Table 5.1 Students' Personal Characteristics and Cigarette Smoking in Logistic Regression Model 94

Table 5.2 Students' Family Characteristics and Cigarette Smoking in Logistic Regression Model 96

Table 5.3 Students' School & Peer Characteristics and Cigarette Smoking in Logistic Regression Model 98

Table 5.4 Students Personal Characteristics and Alcohol Use in Logistic Regression Model 99

Table 5.5 Students' Family Characteristics and Alcohol Use in Logistic Regression Model 101

Table 5.6 Students' Peer and Community Characteristics and Alcohol Use in Logistic Regression Model 102

Table 5.7 Students' Family Characteristics and Drug Use in Logistic Regression Model 104

Table 5.8 Students' Peer and Community Characteristics and Drug Use in Logistic Regression Model 105

Table 5.9 Students' Personal Characteristics and RSB in Logistic Regression Model 106

Table 5.10 Students' Family Characteristics and RSB in Logistic Regression Model 108

Table 5.11 Students' Peer and Community Characteristics in Logistic Regression Model 109

Table 5.12 Variables in Models Predicting Smoking Behavior of Students 112

Table 5.13 Variables in Models Predicting Alcohol Use 115

Table 5.14 Variables in Models Predicting Drug Use 117

Table 5.15 Variables in Models Predicting RSB 119

Table 5.16 Variables in the Equation 120

5.17 Summary of Hypotheses Test 121

Table 1 Relation of Demographic Characteristics with Smoking (N=342) 187

Table 2 Socio-demography of Respondent and Alcohol Use (N=342) 187

Table 3 Demographic Characteristics of Respondent and Drug Abuse (N=342) 188

Table 4 Demographic Characteristics of Respondent and Risky Sexual Behavior (n=342) 188

Table 5 Relation of Parental Variables with Smoking 189

Table 6 Relation of Parental Variables with Alcohol 190

Table 7 Relation of Parental Variables with Drug Use 191

Table 8 Relation of Parental Variables with Risky Sexual Behavior 192

Table 9 Relationship between Parental Interaction with Smoking (n=341) 193

Table 10 Relationship between Parental Interaction with Alcohol (n=341) 194

Table 11 Relationship between Parental Interaction with Drug Use 194

Table 12 Relationship between Parental Interaction with Risky Sexual Behavior ... 194

Table 13 Relationship between Family Variables and Smoking (n=342) 195

Table 14 Relationship between Family Variables and Alcohol 196

Table 15 Relationship between Family Variables and Drug Use 197

Table 16 Relationship between Family Variables and RSB 198

Table 17 Relation between Respondent Health Risk Behavior Status and Family Members' Health Risk Behavior Status 199

Table 18 Relation between Family Members' Health Risk Behavior Status and Alcohol 199

Table 19 Relation between Family Members' Health Risk Behavior Status and Drug Use 199

Table 20 Relation between Involvement of Family Members in HRB and Risky Sexual Behavior of Students 200

Table 21 Relation between Family Violence and Smoking 201

Table 22 Relation between Family Violence and Alcohol Use 201

Table 23 Relation between Family Violence and Drug Use 201

Table 24 Relation between Family Violence and Risky Sexual Behavior 202

Table 25 Relation of Teacher-Student's Relationship to Smoking (n=342) 202

Table 26 Relation of Teacher-Student's Relationship to Alcohol Use (n=342) 202

Table 27 Relation of Teacher-Student's Relationship to Drug Use (n=342) 203

Table 28 Relation of Teacher-Student's Relationship to Risky Sexual Activity (n=342) 203

Table 29 Relation between School Characteristics and Smoking 203

Table 30 Relation between School Characteristics and Alcohol Use 204

Table 31 Relation between School Characteristics and Drug Use 204

Table 32 Relation between School Characteristics and Risky Sexual Activity 204

Table 33 Relation between Parent-School Communication and Smoking 205

Table 34 Relation between Parent-School Communication and Alcohol Use 205

Table 35 Relation between Parent-School Communication and Drug Use 206

Table 36 Relation between Parent-School Communication and Risky Sexual Behavior 206

Table 37 Peer Pressure on Smoking 207

Table 38 Relation of Peer Pressure on Alcohol Use 207

Table 39 Relation of Peer Pressure on Drug Use 208

Table 40 Relation of Peer Pressure One Risky Sexual Behavior 208

Table 41 Relation between Neighbor Behavior and Smoking 209

Table 42 Relation between Neighbor Behavior and Alcohol Use 210

Table 43 Relation between Neighbor Behavior and Drug Use 210

Table 44 Relationship between Neighbor Behavior and Risky Sexual Behavior 211

Table 45 Relation between Media and Communication Channel and Smoking 211

Table 46 Relation between Media Exposure and Communication Channel and Alcohol Use 212

Table 47 Relation between Media Exposure and Drug Use 213

Table 48 Relationship between Media and Risky Sex Behavior 213

Table 49A Variables in the Equation 214

Table 49 B Relation between Use of Internet Use and Risky Sexual Behavior 214

Table 50 Sampling of Students in Each Public School of Kathmandu Metropolitan City 215

Table 51 Student Migration by District 215

LIST OF FIGURES

Figure 1. Health Belief Model 19

Figure 2. Ecological System of the Student 20

Figure 3. Conceptual Framework: HRBs of HSS Students 48

Figure 4. Delphi Method for Tool Construction 56

Figure 5. Map of Kathmandu Metropolitan City 58

Figure 6. HRBs and Determinants in Ecological System 140

ABBREVATIONS

AIDS:	Acquired Immune Deficiency Syndrome
CDC:	Curriculum Development Center
FPAN:	Family Planning Association of Nepal
HIV:	Human Immunodeficiency Virus
HSS:	Higher Secondary School
HSSS:	Higher Secondary School Students
HRB:	Health Risk Behavior
ICPD:	International Conference on Population and Development
KMC:	Kathmandu Metropolitan City
MoE:	Ministry of Education
MoHP:	Ministry of Health and Population
NCF:	National Curriculum Framework
NDHS:	National Demographic Health Survey
NCASC:	National Center for
RSB:	Risky Sexual Behavior
SLC:	School Leaving Certificate
SPSS:	Statistical Package for the Social Science
SDG:	Sustainable Development Goal
UNODC:	United Nations Office on Drugs and Crime
UNFPA:	United Nations Population Fund
UNICEF:	United Nations International Children Emergency Fund
WHO:	World Health Organization

CHAPTER I

INTRODUCTION

This chapter includes the study context, rationale of the study, problem statement, purpose of the study, research questions, hypotheses, limitation and delimitation pertaining to the context of Nepali society. In particular, the chapter focuses on the influence of different determinants on health risk behaviour of the students in Kathmandu.

Study Context

Adolescents (aged 10-19 years) and youth (aged 20-24 years) are conventionally considered healthy. However, an estimated 1.1 million adolescents died in 2016, mostly from preventable or treatable illnesses and disability (World Health Organization [WHO], 2018). Adolescents and youth are also highly vulnerable to road traffic injury, violence, depression, suicide, diarrhoeal diseases, HIV infection, and pregnancy related complications, which are all either preventable or treatable (WHO, 2018).

In the social context of Nepal, adolescence and youth are, in general, social constructs which give rise to various physical, cognitive, social and emotional changes. Physical changes are mostly visible in the form of bone development, breast development and menarche in girls, and nocturnal emission and facial hair development in boys. Emotional changes mostly result into frequent mood swings, inclination to peers than family members, sensitive to body images, onset of sexual infatuations, eating disorder and sometimes showing suicidal tendencies. Cognitive development induces capacity for abstract thinking in adolescents and youth which may lead to development of moral reasoning and individualistic thought processes in

relation to moral values and reality. Finally, in the process, the adolescents gradually attain sexual maturity, establish peer relationship, and desire vocation and independence from family. They are also more inclined to search for their identity outside the family, develop certain attitude and increase activities in relation to their sexual orientation.

A person's future health is intrinsically linked to their current health as a number of diseases in adulthood have roots in youth (Pradhan, Niraula, Ghimire, Singh, & Pokharel, 2013). WHO report (2014) predicts that many diseases in adulthood such as cardiovascular and lung cancers are associated with physical inactiveness and tobacco use among youngsters. Half of all mental health problems in adults usually start by age 14 but they mostly remain undetected or untreated. According to the WHO report, road traffic accident is the leading cause of death among adolescents followed by suicide, interpersonal violence and diarrhoeal diseases (WHO, 2018). Premature and low birth weight in infants mostly arises due to early childbearing and short birth spacing among young mothers. Similarly, many health-related problems in adolescents and youth are due to their involvement in some risky behaviors, which can result in teenage pregnancy, sexually transmitted infections, mental health problems, violence and juvenile delinquencies, eating disorders and obesity (Maharaj, Nunes, & Renwick, 2009).

There are different perspectives that motivate adolescents and youth to involve in HRBs as compared to adults. HRB has been most commonly viewed from the probability of positive and negative health outcomes or consequences (Skaar, 2009). Accordingly, the HRBs such as cigarette smoking, alcohol and drug abuse on the one hand generate long term negative health outcomes such as respiratory diseases, cancer, suicide, depression and anemia; while, they generate positive outcomes such as fun,

pleasure and group involvement. If adolescents and youth feel that positive outcomes supersede negative outcomes they are more likely to engage in HRB. Other scholars have defined HRB as any action undertaken by an individual with a frequency or intensity that increases diseases and injury (Oraby, Abdelsalam, & Ali, 2016).

The cognitive perspective views HRB in terms of the results from cognitive processes such as brain developmental stage or decision-making process (Buyer, 2006 as cited in Skaar, 2009). While the subcortical region of the brain in humans is generally responsible for driving motivation, the prefrontal region is responsible for decision-making, planning and social interaction. Most often in adolescents and youth, the subcortical regions of the brain mature earlier than the prefrontal regions and this difference in the development process determines their logical thinking and decision making, and thus increases their vulnerability to risky decision making (Leshem, 2016). Adolescents and youth use prefrontal cortex less often during interpersonal interactions and decision making, so they exhibit a higher degree of emotion in their dealings with others (Balochhini, Chiamenti, & Lamborghini, 2013). This process of neural development also results in sensation and reward-seeking behavior in young people as opposed to self-regulation and control (Sustein, 2008). Hence, cognitive behaviour is also crucial for adolescents' risky decision-making tendency or their involvement in HRBs.

However, an increasing number of scholars have viewed involvement in risk behavior as a biological process driven by hormonal changes or due to puberty (Skaar, 2009). Testosterone, estrogen and progesterone are the three main growth hormones produced during adolescence. Each of these hormones are present in different concentrations in males and females which affects how and what decisions are made by adolescents and youth (Miller, 2016). High levels of testosterone are significantly

associated with a variety of risky behaviors (Op de Macks et al., 2016 ; Lehrer, Tremblay, & Vitaro, 2004) such as aggressive and anti-social behavior and criminal activities. The main stress hormone is cortisol. Elelvated cortisol levels in young people are related to gang activity, property crime, smoking, and illicit drug use although the same hormone is not associated with drinking habits in adolescents (Lehrer, Tremblay, & Vitaro, 2004). Therefore, the type and level of hormone also play a major role in seeking risky behaviors.

Other research considers the broader social and environmental factors contributing to HRB where the behavior is not in accordance with the expectation of society (UCLA, 2007). Such behavior as distinct from normal social behavior is considered a risk behavior and society terms them as risky behavior, risk taking behavior or health risk behavior. Hence, risk factors are the conditions associated with socially undesirable outcomes where personal evaluation or one's own perception of outcomes could determine their decision to involve in HRB. As they mature, adolescents take more risks, focusing more on the benefits than the cost of risky behavior or where they have the likelihood of getting support from their peers (Gardner & Steinberg, 2005). The rising trend of delayed marriageable age in current societies has opened the window of opportunity for adolescents and youth to engage in premarital and unsafe sexual activities. This is likely to increase the risk of unwanted pregnancy and STI/HIV and AIDS (Regmi, Simkhada, & Van Teijiligen, 2006). Other problems such as nutrition problem, risky driving, alcohol use, drug use, tobacco use, risky sexual behavior and obesity may also increase considerably.

Thus, the involvement of adoelscents and youth in HRB is common in every community and society. Risk behaviour among adolescents is associated with individual characterstics, family role and peer pressure (Adhikari & Tamang, 2009).

Some major HRBs among adolescents and youth include drinking alcohol, cigarette smoking, substance abuse and unsafe sex practices. All such behaviors have the potential to seriously impair lives and even cause premature or untimely deaths (Sustein, 2008). Young people's risky sexual behaviors are further accelerated by other risky behaviors such as alcohol and drug abuse.

Statement of the Research Problem

Young people's health in general is a concern of every society across the globe. This is because young people constitute a sizable population and the future developmental prospects of a society are often linked to young people's productivity. WHO estimated that adolescents comprise 16 % of the world population, of which about 90 percent live in low and middle income countries. However, over 3000 adolescents die everyday, mostly from treatable diseases (WHO, 2018). The WHO also estimated that more than 2 million adolescents in the world are living with HIV and 44 births per 1000 girls aged 15-19 per year. Moreover, 15-19 age group girls also died from pregnancy complications or child birth (WHO, 2018).

Adolescents and youth, between the age of 10-24, constitute one third of the total population in Nepal (MoHP, 2012). In Nepal, adolescents (10-19) consist of 24.18% of total population (CBS, 2010). They are considered to be at the risk of negative health outcomes due to increasing HRBs. In Nepal, risk behaviors such as cigarette smoking (WHO, 2017), alcohol use (WHO, 2012), drug use (UNODC, 2017) and risky sexual behavior (UNICEF, 2011) have been linked to negative health outcomes. Cigarette Smoking is the most common among all tobacco use with 27% men and 6% women (NDHS, 2016).

Adolescents and youth get information on healthy behaviors primarily from family, school, media and other sources. Exposure to three media (Newspaper,

Televsion and Radio) at least once a week among women aged 15-19 is 3.6%, 20-24 is 2.4% as compared to men aged 15-19 is 6.5% and 20-24 is 10.9% (NDHS , 2016). Almost all adolescents and youth in Nepal have heard about HIV/AIDS, with 81% of women and 98% of men and 73 percent have heard about sexually transmitted infection (STI) and three fourths know that HIV can be transmitted through sexual contact (MoHP/GoN, 2012). Almost all male adolescents and youth know about condoms, 96 percent of female adolescents and youth know about condom. Eighty-five percent know about injectable family planning methods and 80 percent know about pills (MoHP, 2012). Altogether 40.9% adolescents aged 15-19 know about abortion service center (NDHS , 2016). Therefore, in overall terms, adolescents and youth in Nepal seem to have good knowledge of sexually transmitted diseases, HIV/AIDS and contraceptives.

One study (MoHP, 2012) showed that in their adolescent and youth, 18 percent of young people used alcohol, followed by cigarettes/tobacco (13%) and hard drug (6 %). More than one fourth of the young population in urban areas (26 %) drinks alcohol which is much higher than their rural counterparts (16 %). In urban Kathmandu valley alone, 35 percent drink alcohol, 20 percent smoke cigarettes, 7 percent use major drugs and over 1 percent use injectable (MoHP, 2012). Similarly, the National Adolescent and Youth Survey undertaken in 2012 showed that 33 percent of male and 59 percent of female adolescents aged between 15 to 19 do not use contraception at the first sexual intercourse. As regards to the knowledge of condoms and other contraceptives, the trend is generally high, but the current users of condom are only 44 percent, followed by 36 percent injectable and 12 percent using birth control pills (MoHP, 2012). In 2010/11, of the 95000 reported abortion cases, 25 percent was by teenagers and 50 percent of those abortions were carried out in

Kathmandu. It has also been suggested that girls in the Kathmandu valley are now dealing with early pregnancy and abortions more than in rural areas (Parakhi, 2012). Thus, the data clearly explains the higher vulnerability of HRBs among adolescents and youth of Kathmandu metropolitan city than in the rural areas of the country.

Despite having the knowledge of HRBs, adolescents and youth are increasingly involving themselves in such behaviors. Hence the core problem seems to be around the motivating factors or forces that encourage adolescents and youth to engage in risky health behaviours. Also, is their decision to involve in any risky health behavior entirely an individual choice or there are a range of factors attributable to such tendency? The existing literature and theory, as will be discussed in the next chapter, suggests that the difference in adolescents' knowledge and practice regarding HRBs could be due to broader socio-environmental context including personal characterstics, family, community and society. The most immediate environment involving various attributes such as personal, family, school and neighborhood could have significant influence on HRBs but other factors such as media, internet, policy and programs, culture, societal values and norms could also influence the risk taking behavior amongst adolescents and youth. All of these factors are crucial in determining how young people behave and whether they make risky choices.

At the individual level, HRB of adolescents and youth is associated with gender, ethnicity, age and religion (Adhikari, 2010; Pradhan et al., 2013). At family level, the HRB determinants include family type and income (Paudel & Paudel, 2014), parental monitoring (Aufderheijde, 2015; Dittus et al., 2015), parent-child communication (Thapa & Chau, 2015) and family violence (Dekeke & PT, 2014). One study conducted in Dharan municipality of eastern Nepal in 2011/12 among 1454 students from grades 9 to 12 showed that tobacco use is mostly prevalent in late

adolescents (16-19), males and the Janjati ethnicity in particular, and those studying in government schools or having higher amount of pocket money available from parents (Pradhan et al., 2013). The ever growing individualistic nature of society and changing urban life styles also provide the window of opportunity for adolescents and youth to spend more time with peers. In such circumstances, peer modeling (Peci, 2017; Wang Hipp, Butts, Jose, & Lakon, 2015) and pressure (Mulu, Yimer, & Abera, 2014) are associated with HRB of adolescents and youth.

In the past, sex education related to risky sexual behavior (RSB) in schools did not hold much importance as sex education was excluded from school curriculum. Schools also lacked the technical capacity and resources for sex education even if they wanted to deliver it. School policy reflected society's generally held strong taboos against discussing sexuality or sexual behaviors (Family Planning Association of Nepal [FPAN], 2009).

There is also a lack of compatibility in Nepali policies and the absence of synergy between programs of different ministries, which often minimizes the complementarity and effectiveness of those policies and programs. National Health and Youth Policy, for example, spells out HRB issues in line with Nepali context but the implementation of programs usually defines adolescents and youth population in line with the WHO definition. As such, national policy considers the 16-24 age group as adolescents and youth, whereas the WHO uses the 10-24 age group. The impact of this difference in the age group alone has huge implication for the suitability of programs designed for adolescents and youth. Similarly, although the Tobacco Product Control and Regulatory Bill was effective from 2011, implementation of the Bill was not effective due to weak monitoring and supervision (KC, 2010). Furthermore, National Policy on alcohol and drug has also not been effective due to

the same reason. National SRH policy, HIV/AIDS policy, adolescents and youth policy also do not complement each other and in many cases their implementation remains stand alone.

Exposure to different media exposes adolescents and youth to materials that reduce their involvement in HRBs (Escobar-Chaves & Anderson, 2008). Cultural values and norms also influence their involvement in HRB to a greater extent. Therefore, given the context, it is important to understand and identify major determinants of HRB in broader environmental and societal context so to prevent adolescents and youth from taking risky health behavior decisions.

Purpose of the Study

The purpose of the study was to assess the major determinants of health risk behavior by taking into consideration the broader environmental context. Specifically, the study analyzed the status and determinants of HRB among students, using three levels of environmental context including personal, family and community/societal.

Research Questions

1. What kind of health risk behaviors do higher secondary school students of the Kathmandu metropolitan city engage in?
2. To what extent do sociodemographic factors (age, gender, ethnicity, accompaniment) determine health risk behaviors of students?
3. To what extent do family factors (parents' education, occupation, parents-children interaction, parents' involvement in health risk behaviors, family violence) determine the health risk behaviors of students?
4. To what extent do community/societal factors (peer influence, school engagement, neighbor influence, media exposure) determine the health risk behaviors of students?

Hypotheses of the Study

The study involves the following hypotheses on four major health risk behaviors

Hypothesis 1: Cigarette smoking in students is driven by gender differences, ethnicity, accompaniment, parental communication and monitoring, presence of family violence, school attendance, peer influence and pressure, and neighbor influence.

Hypothesis 2: Alcohol use in students is driven by gender differences, caste, accompaniment, parental alcohol use, parental communication, family violence, school attendance, peers influence and pressure, neighborhood influences, media exposure.

Hypothesis 3: Drug use in students is driven by gender, ethnicity, parent-children interaction, parental involvement in HRBs, family violence, peer influence and pressure, exposure to media and involvement in extracurricular activities.

Hypothesis 4: Students' involvement in RSB is driven by gender, accompaniment, parental education, parental communication and monitoring, family violence, peer influence and pressure, exposure to media, masturbation practices and exposure to pornographic materials.

Rationale of the Study

Adolescents and youth are a demographic and economic force of a country, particularly developing countries, whose populations have a high proportion of adolescents. Healthy and productive adolescents and youth determine the prosperity and development of the country. According to UNICEF, 1.2 billion adolescents constitute 16 percent of the world's population and more than half of all adolescents

live in Asia (UNICEF, 2016). Adolescents and youth comprise one third of the total population of Nepal (MoHP, 2012). The highest number of adolescents and youth live in Kathmandu district, representating 5.7%, 8.2% and 6.9% of the total adolescents, youth and young people in the country (MoP & E/GoN, 2016). But a large number of adolescents and youth are estimated to have been involved in HRB due to their propensity to take risks as compared to adults. These HRB impact on their health and may result in early morbidity and mortality. Thus, tendencies towards HRB and associated negative consequences have significant implications for the progress of the country.

It is, therefore, important to understand the status of HRB and its determinants so that adolescents and youth can be protected from seeking risky health behaviors. As the next chapter will explain, there is a particular research gap in Nepal in understanding HRBs among the young population. Hence, this study attempts to fill that research gap by analyzing HRB status and associated determinants amongst adolescent and youth population, mostly students at higher secondary level of education.

Health Risk Behaviors has often been investigated from individual risk taking behaviors such as smoking, alcohol use and drug use. However, only limited research has covered a broad array of major HRBs and their socio ecological context. A broader analysis of factors and context is essential because adolescents and youth are not a homogenous group of people and one individual may have the tendency to take multiple risk behaviors at any given time. HRBs are often stimulated by multiple factors and in most cases one type of HRB catalyse or influence other types of HRB (Orlowski, 2016). Given such context, this study focuses on drawing a correlation among major HRBs and its determinants at personal, family and community/societal

level. This study would also discuss the determinants of HRB and potential of each determinant to contribute towards the protective behaviors. The discussion would be important in identifying the factors and their role in helping to protect adolescents and youth from undertaking risky health behavior decisions.

It is also important to understand what drives adolescents and youth to engage in HRB. HRB is often considered as an outcome of individual aggression, violence and ill health that harms both the person and society at large (Swain, Mohanan, Sanah, Sharma, & Ghosh, 2014). It is therefore in the interest of young people and society that negative consequences associated with personal or individual HRBs are minimized or prevented to the maximum extent possible. To do that, cultural norms and traditions that operate at a much higher level than the individual or family level need to be examined as well, for all of these determinants may independently or collectively affect adolescents and youth involvement in HRBs. It is for this reason that this study would take a broader view of societal factors that drive adolescents to seek risky health behaviors.

Adolescents and youth behaviors are also seen as driven by attributes such as age, gender, ethnicity and surrounding environment (Orlowski, 2016). This study considers that it is important to investigate the effect of different determinants of each HRB pertaining to differences in an individual's immediate environment such as family, peers, school, neighbors and the broader setting such as media and internet access. Other determinants such as, social norms and values can also incline them towards HRBs. Therefore, this study first would outline and assess the major HRBs and the consequences and impact of each is analyzed further.

Limitations and Delimitations of the Study

The major HRBs such as tobacco use, alcohol and drug abuse, lack of physical activity, unhealthy dietary practices are the leading causes of deteriorating health in young population (Glick et al., 2016). These behaviors combined with other risky behaviors like unsafe sexual practices can result in diseases and terminal illnesses in adolescents and youth (Burusic, Sakic, & Koprtla, 2014). Given such expansive health determinants, this study has considered only four major HRBs among adolescents and youth, namely smoking, alcohol use, drug use and RSB. The study was limited to these four major HRBs on the basis of a pre-feasibility study where students mentioned these four behaviors as the major HRB. These four major determinants have been considered as relating to adolescent and youth's immediate and broader environment, which basically are contextualized at three levels including personal, family, community or societal.

In relation to the immediate environment, the study covers the aspect of family, peers, school, neighborhood, while at the broader environmental level, the study analyzes the impact of media only. Including only media at the broader environmental level is another delimiting factor. The main reason not to include other broader environment context as such aspects are best studied in longitudinal studies. Additionally, this study conducted cross sectional survey owing to time and financial constraints in academic research. This has limited the study in terms of its ability to make a detailed observation of broader environmental contexts such as social norms, values and change in behavior over time. Therefore, a cross-sectional study was conducted.

This study has considered only grade 12 public school students as the representative sample of adolescents and youth in Kathmandu MPC. By doing so, this

study has tended to not cover other adolescent and youth groups such as early adolescents, private school students and rural adolescents and youth. This study has mostly analyzed risk factors in relation to adolescent and youth risk behavior. The conceptual framework was also designed from risk perspective only. However, consideration of protective factors early in the survey design and conceptual framework, could have helped to broaden the scope of analysis of risky behavior. Protective factors have not been included in such level of depth and hence this remains another delimitation of this study.

Organization of Thesis

The thesis comprises seven chapters. This chapter has provided an overview of the research by explaining how and why the study was carried out; introduced and provided the background, problem statements, research questions, hypothesis, rationale and delimitation of the research.

Chapter two revolves around major aspects of HRBs and influencing factors and theoretical perspectives of the research. It presents the review of literature on HRB and the conceptual frame of the study. It also explains theoretical aspects and policy review related to HRBs among adolescents and youth.

The third chapter describes the methodology of the study. This chapter informs the reader about how the study was conducted. It explains research design, sampling techniques, instrument construction, data collection method and methods used in data analysis. This chapter also includes ethical considerations of the research.

The fourth chapter presents a descriptive analysis of the first research question, i.e., the status of health risk behavior and correlation of each health risk behavior with major determinants at personal, family and community level of the study. This chapter uses inferential statistics to find answers to the research question.

The fifth chapter explains the relationship between each determinant on its own and in combination and the four major HRBs. It uses inferential statistical analysis to answer research questions two, three and four. Finally, the sixth chapter presents a discussion based on the overall findings of the study. This chapter primarily discusses health risk behavior among adolescents and youth and their determinants by comparing and contrasting with research studies undertaken previously. The seventh chapter is the concluding chapter with an overview of the main findings and recommendations of the research.

CHAPTER II

LITERATURE REVIEW

Health Risk Behaviors (HRBs) are actions or characteristics of a student's environment that may cause injury, illness or premature death. Protective behaviors on the other hand are the actions or characteristics of a student's environment that may protect them from injury, illness or premature death (Barnot, 2005). HRBs adopted by students affect their lives physically, emotionally, socially and spiritually.

HRBs such as smoking cigarettes, unprotected sex, drinking alcohol and drug abuse result in negative health outcomes such as respiratory diseases, renal problems, unwanted pregnancy, sexually transmitted infection and unsafe abortion, which ultimately lead to morbidity and mortality in adolescents and youth. However, exploratory risk behaviors such as making new friends, trying new sports, spending time with friends and learning to drive usually result positive consequences for adolescent and youth's academic and physical performance (Skaar, 2009).

Cigarette smoking, alcohol consumption, drug use, RSBs insufficient physical activity, unhealthy eating habits and obesity are common HRBs that are usually considered as 'major' (Burusic, Sakic, & Koprtla, 2014). Cigarette smoking is the most common among them. According to WHO, more than 1.1 billion people smoked tobacco in 2015. Tobacco use is also considered to be responsible for the death of about six million people across the world every year (WHO, 2017).

The four major HRBs namely cigarette smoking, alcohol use, drug use and RSBs are included in this study as they were nominated in a preliminary feasibility study as common behaviours by students of Nepali public schools. Although unhealthy dietary habits, risky driving and obesity could constitute major risky

behaviours in general in students, these risks are not considered for this study as the students enrolled in public school are from poor and middle income families and their parents are not able to offer pocket money that could buy junk food or transportation such as motorbike and car.

Theoretical Perspectives of HRBs and Determinants

The major theories related to HRBs include social learning, problem behavior, social norms, transitional teens, theory of reasoned action and planned behavior, James Marcia's adolescent identity development, Elkind's adolescent egocentric, Erikson psychosocial, and Bronfenbrenner ecological system theory. Some of these major theories are described below.

Social Learning Perspectives of HRBs

One of the most influential theories was coined by Bandura in 1969, who suggested that both psychological and environmental factors in combination influence the development of specific behaviors in adolescents and youth. Social Learning Theory explains a reciprocal model of human behavior which is influenced by the interaction of personal, environmental and behavioral factors (Bandura, 1986). Therefore, the basic premise of this perspective is that people learn through their own experience as well as by observing other's actions. Social learning consists of a four step modeling process (Nabavi, 2012) including attention, retention, reproduction and motivation. For example, in smoking adolescents and youth may first observe parental smoking or a friend's smoking behavior and feel curious enough to experiment for themselves. In the event they practice the behavior more often, more likely their skill will advance and they become a habitual. So, usually smoking behavior starts with one puff or one cigarette, then more than one cigarette each day eventually makes a person habituated.

Problem Behavior Perspective of HRBs

Problem behavior theory suggests that behavior develops from the structure and interaction of three systems, such as behavior, personality and perceived environmental systems (Adolescent development and pathways to problem behavior, n.d.). Problem behavior framework (Jessor, 2014) posited that socio-cultural, socialization and personality systems interact to develop specific behavior in adolescents and youth. The socio-cultural system provides opportunity, normative and social control structures and the socialization system basically includes parental reward, parental belief and parental control structures. The personality system of adolescents and youth are: personal belief, perceived opportunity and personal control ability. Therefore, the behavioral development in adolescents and youth occurs throughout the socialization process and nearest environmental factors are crucial for problem behavior.

Protective factors such as model protection (parents and friends model for behavior), control protection (family, peers, school neighborhood controls and disapproval and parents' sanctions), support protection (family, friends, teachers, neighbor support) and behavior protection (family, school and community activities) can influence adolescents and youth to be involved in a particular behavior (Jessor & Turbin, 2014). Hence, the problem behavior or risk behavior among adolescents and youth are influenced by the environmental context.

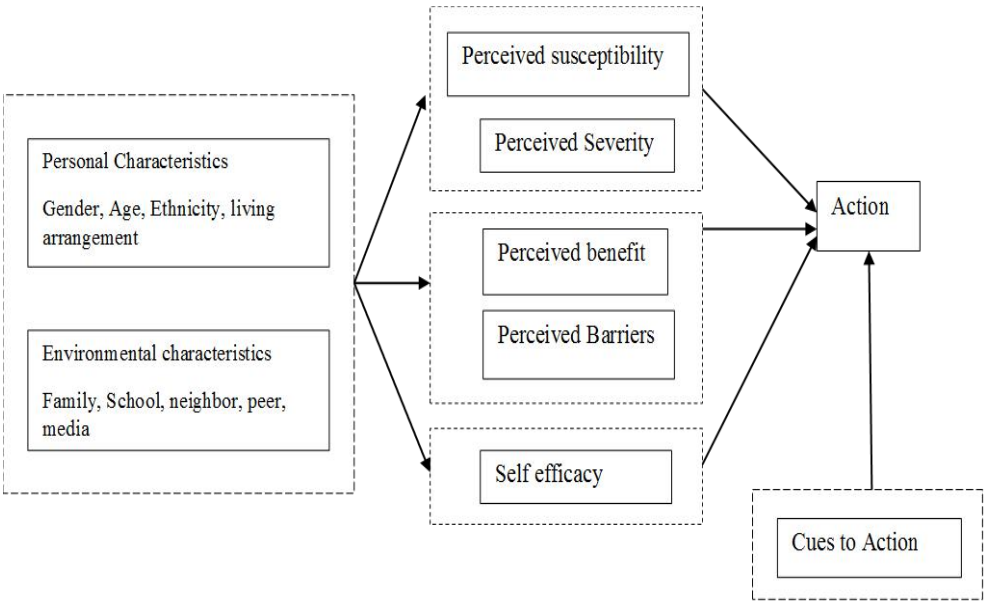
Health Belief Model

The Health Belief Model was established by a group of the US Public Health Service in the 1950's. It was developed to gain understanding of why people failed to adopt disease prevention strategies or early-on screening tests for the detection of

diseases. The Model allowed to understand the factors influencing people's decisions regarding their health.

Young people do not participate or engage in risky behaviors if they believe they are susceptible or there are serious consequences, or the course of action can reduce severity or seriousness or if benefits of the cued action outweighs cost. According to this model, six major components of the Health Belief Model include perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action and self efficacy (Abraham & Sheeran, 2005).

Figure 1. Health Belief Model



Adapted from (Abraham & Sheeran, 2005)

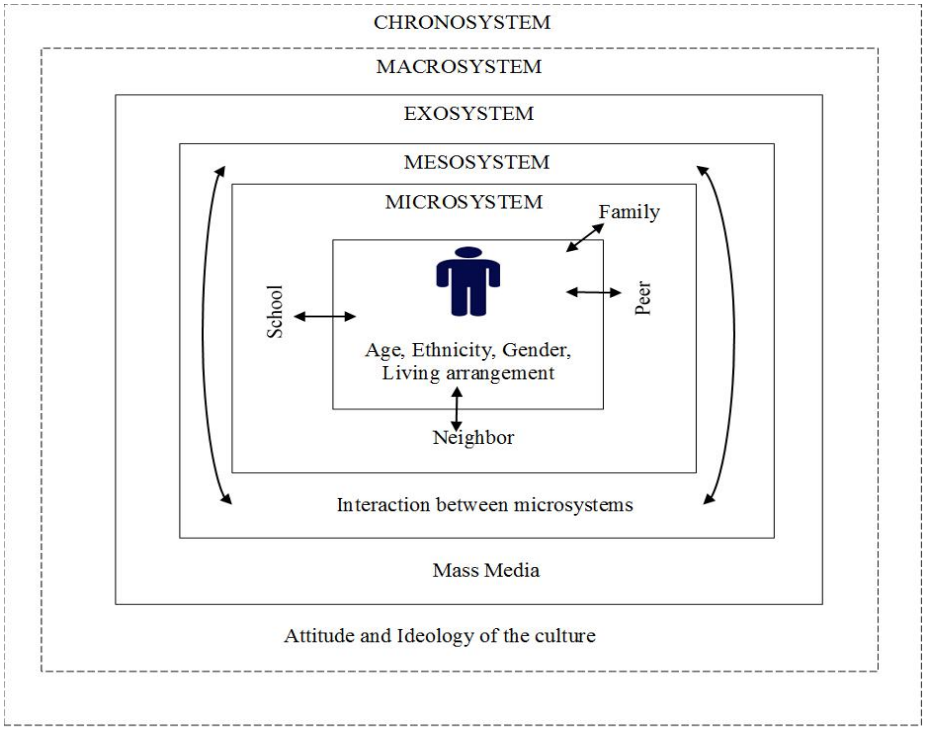
According to perceived susceptibility component, a young person acquires a disease or negative health outcomes due to their participation in HRBs. Similarly, perceived severity is due to young people's personal belief in the extent of harm caused by a certain disease or harm as a result of a particular behavior. Perceived benefit is a young person's belief about benefits of methods for reducing the risk or seriousness of a disease or harm arising from a particular behavior. On the other hand, perceived barrier occurs due to young person's belief concerning the actual and

imagined cost of a HRB. Cues to action results from young people tendency to take action. Self-efficacy is the confidence a young people have in their ability to uptake a behavior.

Ecological System Theory of HRBs

Bronfenbrenner proposed ecological system theory in 1979. The socio-ecological model helps to identify how individual behavior results from various determinants that exsit in multiple levels of influence (The psychology notes HQ, 2013). It highlights the reciprocal relation among multiple systems associated with adolescents' behavior. There are five enviornmental systems that can play a specific role in the development of humans throughout their life span (Kalina, 2009). The five levels of influences affecting behaviors include individual, family, community, inititutional, public policy and socio-cultural factors (Anderson & Whitefield, 2011).

Figure 2. Ecological System of the Student



Adapted from (Bronfenbrenner, 1979)

Of the five systems (figure 2), the microsystem includes the immediate environment of the individual such as family, school, neighbourhood, peers and personal biological characteristics. The mesosystem is composed of connections between one's immediate environments such as family-school, family-peer. The exosystem is the external environment that indirectly affects person. However, here, the student is not part of, such as economic, political, educational, governmental and religious systems and mass media. Similarly, macrosystem constitutes larger cultural context such as values, customs, law, tradition of surrounding culture i.e. collective attitudes, ideology and values. The final layer is the chronosystem which is related to the pattern of environmental events over time. Therefore, each system contains norms, rules and values, which when combined, can dramatically affect the development of individual students or contribute to their tendency to take part in risky behavior.

Table 2.1

Bronfenbrenner's Ecological System Theory

System	Explanation and elements
Micro-system	It is the immediate context of the students and they are directly influenced or interact with it. Parents, siblings, neighbors, teachers, peers are the major elements in microsystem
Meso-system	It is the influence between members of microsystem such as school-family, peer-family etc.
Exo-system	It is an external influence on students and is not directly related with them. It is external to microsystem such as media, policy, legislation.
Macro-system	It is cultural and social influence such as social and economic status
Chrono-system	It is changes in all systems and their members over time

(Bronfenbrenner, 2005)

It is important to consider a comprehensive understanding of ecological systems to understand the determinants of HRBs. This research in this thesis assumes

that some of the ecological factors at a personal level such as age, gender, ethnicity; and at family level such as family structure, socioeconomic status of parents and parents educational level, generally influence the HRBs among adolescents and youth. Moreover, factors at the community level, such as peer circles, neighbourhood and schools may determine the HRBs. Family system such as single parenting, family socioeconomic status, parental education, parental monitoring or support, connectedness to family, communication with parents, and relationship with parents also determine the HRB among adolescents and youth (Kalina, 2009).

While noting the ecological system perspectives, it is also important to note that there is a fundamental difference in the world views between eastern and western cultures. Western culture views the world from an analytic perspective considering its mutual exclusiveness (Ludden, 2017). Hence, they tend to consider themselves as independent and the self as a free agent; whereas eastern culture views the world in holistic fashion and not mutually exclusive categories. In the eastern culture, the person is considered in broader terms and the self is defined in terms of relationship and mutual obligations. The Eastern cultural philosophy therefore, usually teaches children to follow rules and regulations set by parents, teachers and elders. Along the line, Nepali culture emphasizes the role of parents and family in shaping children's future. Parents and teachers are considered as God. Furthermore, the Eastern culture also dominantly believes that although adolescents and youth live in the social order of their families, peers have stronger influence on their personal characteristics and risky behavior. As the popular Nepali proverb goes, "*sangat guna ko fal*" (Eng. as is the company, so is the result), the culture strongly emphasizes on restraining children from being influenced by mischivious peers so to prevent them from the adoption of bad behavior.

Similarly, the Eastern culture and Hindu religious scriputures such as the Vishnu Puran and the Garud Puran in particular condemn adultery (Sanskrit. *parastri gaman*), which says, those committing adultery is punished in the present life and afterwards, their lives in the world are cut short and they go to hell on their death (Khemaka, 2000). The Eastern values also consider gambling, alcoholism, adultery, killing and thieving as immoral and in many cases considered criminal activities. Since these values have been practiced in households in regular basis, the Eastern culture, from the beginning, guides young children to refrain from such anti-religious and immoral behaviors.

However, as Western culture is becoming increasingly influential in Eastern cultures, most adolescents and youth in Nepal, spend their time in school and with peers which can significantly influence their behavior. As such urban adolescents find themselves sandwiched between the guiding principles of Eastern philosophy from parents and teachers and the influence of Western culture from their exposure to peers in schools, media and modern communication technologies (Gautam, 2017). All in all, extrafamilial system, besides the self and family system, need to focus on impacts of macro level systems such as cultural, economic and societal systems (Kotchick, Shaffer, Forehand, & Miller, 2001). Adolescents and youth behaviour, therefore, can be seen through the lens of a broad ecological system which directly or indirectly impacts on their health and well being.

Prevalence of Health Risk Behaviors

The prevalence of major HRBs included in this study are discussed at global, south Asian and Nepali contexts.

Prevalence of Cigarette Smoking

Tobacco (both smoking and smokeless) is detrimental to health and firsthand smoking causes five million death each year globally. About 80% of deaths due to smoking takes place in low and middle income countries (WHO, 2012). Moreover, estimated 600,000 people die from second hand smoking. Death from tobacco is more than combined deaths from tuberculosis, HIV/AIDS and malaria (WHO, 2012). Smoking behavior among adolescents may also initiate other HRBs. A study conducted by the US Department of Health and Human Services shows that young smokers are three times more likely than nonsmokers to use alcohol, eight times more likely to use marijuana and 22 times more likely to use cocaine (CDC, 1994). Smoking is also associated with other risky behaviors such as engaging in unprotected sex or gang fighting (CDC, 1994). Estimated age specific global prevalence of daily tobacco smoking for men and women showed that in men, the prevalence increased rapidly in both developed and developing countries among 15-19 years and 20-24 years' age groups (Ng, Freeman, Robinson, Dwyer, Thomson, & Gakidon, 2014). So, the issue of smoking in adolescents and youth is especially important whilst discussing HRBs.

The age standardized prevalence of tobacco smoking (daily) among men decreased from 41.2% to 31.1% in between 1980 to 2012 and it is noteworthy that, in between 1980 and 2012 the global age standardized prevalence of tobacco smoking (daily) decreased by 25% for men and by 42% for women (Ng et al., 2014). To some extent, such decrease could be attributed to the framework convention adopted in 2003 which was ratified by 177 countries. This focused on increased tobacco taxation, mass media campaigns and other strategies (WHO, 2012). But, annual rate of decline of 0.9 % in between 1980 to 2012 was mostly contributed by the developed world.

In South Asia, approximately 1.2 million people die every year from tobacco use (WHO, 2012). South Asia is the largest zone for production and consumption of tobacco products. The Global Youth Survey report (2012) also revealed that tobacco prevalence among students was also high in this region and it showed one in ten students aged 13-15 years' smoke. Youth cigarette smoking prevalence is the highest in Nepal in comparison to India, Pakistan and Sri Lanka. According to WHO report on the global Tobacco Epidemic 2017, the tobacco prevalence among youth 13-15 years was 6.8% for male and 3% for female in Nepal. It was 5.8% (male) and 2.4% (female) in India, 4.8% (male) and 0.9% (female) in Pakistan. The prevalence was quite high in Bangladesh for males (10.1%) but for females it was 1.5%. When smoking prevalence between genders was compared in developed countries, the prevalence in women was very similar to men. For example, prevalence among male age 13-15 years in USA was 4.2 and for female was 4.1 (WHO, 2017).

About 15,000 people die each year in Nepal due to tobacco consumption (MoHP, 2011). According to Nepal Adolescents and youth Survey 2012, smoking is the second highest HRB, which has a prevalence of 13%. But, a survey conducted among 1454 adolescents age 14-19 years in Dharan municipality in Sunsari district revealed that the prevalence of ever using any tobacco product was 19.7%. The use of tobacco was found more among youths (25%). In urban areas (18%) prevalence is more than in rural areas (11%) but in Kathmandu valley (20%) it is higher than other urban areas of the country.

Smoking prevalence among adolescents and youth is associated with perceived risk and individual social and cultural context. Perceived short term risks and benefits such as physical, social, and addiction play an important role in vulnerability to smoking among adolescents because such perceptions are associated

with the vulnerability to smoking (Aryal, Petzold, & Krettek, 2013). Besides cigarette smoking, the prevalence of alcohol use in this study also shows that it is one of the major HRBs among adolescents and youth.

Prevalence of Alcohol Use

According to WHO, hazardous and harmful use of alcohol is a major health problem of the world which causes death, diseases and injury. However, alcohol-related harm is estimated by the volume of alcohol consumed, the pattern of drinking and the quality of alcohol consumed. Approximately 4.5% of disease and injury in the world is attributable to alcohol (WHO, 2011). Excessive alcohol consumption causes cirrhosis of liver, epilepsy, poisoning, road accidents, violence and several types of cancers. In 2012, about 5.9% of all death globally were attributable to alcohol abuse, which includes 7.6% for males and 4.0% for females (WHO, 2014).

Worldwide, about 16% of drinkers aged 15 years or older drink excessively, whereas 61.7% of this population had not drunk alcohol in the past 12 months (WHO, 2014). In contrast to smoking, alcohol consumption was higher in the developed world (WHO, 2011). Minimum legal age from drinking is 21 in the USA and there is no remarkable difference observed among adolescents on the basis of sociodemographic characteristics (O'Malley, Johnston, & Bachman, 1998). Adolescents and youth who started to drink before age 15 were four times more likely to be alcohol dependent in later stage of life (Grant & Dawson, 1997).

Alcohol use is higher in rich countries compared to poor and middle income countries, nevertheless, it is one of the major health related problems in South Asia region (WHO, 2004). Nepal adolescents and youth Survey 2011 revealed that nearly one in every five (18%) adolescents and youth used alcohol, followed by use of cigarette (13%) and drugs (6%). Similarly, alcohol use increased with age and level of

education. Moreover, the boys who ever used liquor such as homemade, hard liquor, beer, and wine was three times greater as compared to girls. More than one-fourth of adolescents and youth in urban areas (26%) drink alcohol compared to 17% for their rural areas. Ever using alcohol among adolescents and youth is the highest in Kathmandu valley (35%), Eastern region (23%) and Mid-Western (17%). Moreover, ever use of alcohol was the highest among relatively advantaged Janajatis (33%), disadvantaged Janajatis (28%) and Dalits (19%) (MoHP, 2012). Besides alcohol use, drug use is also one of the common HRBs among adolescent and youth around the globe and also in Nepal.

Prevalence of Drug Use

Drug use among adolescents and youth is one of the major problems around the globe. United Nations Office on Drug and Crime reported approximately 5% of global population used illicit drugs in 2015 (UNODC, 2017) and it classified 0.6% of the global population were a drug abuser (Chakravarthy, Shah, & Lotfipour, 2013). It was estimated that 28 million years of disability adjusted life years were lost globally in 2015 problems due to drug abuse (UNODC, 2017). When adolescents and youth enter high school education they face additional social, emotional and educational challenges on the one hand while on the other hand, they may have easy access to drugs, drug users or drug using friends (NIH, 2003). Drug use among adolescents and youth is not only the problem of developing world, it is also common in the developed world. In the USA, 12th grade students (23.6%) used illicit drugs in the last year, and 12th graders (21.3%) used marijuana in the last 30 days (NIH, 2018). Moreover, in the USA, about 50% adolescents and youth had used illicit drug by the time they left high school (Johnston et al., 2018). European students (18%) had used an illicit drug in

their life span as compared to 35 percent of Students in the USA of similar age group (University of Michigan, 2016).

There is very limited data and information on illicit drug use and production available in South Asian countries (IDPC, 2018). Drug use prevention in South Asia is generally targeted to school based programs, education to health workers, community outreach and mass media campaigns (Ratnayake, n.d.). Illicit drug use data are more difficult (WHO, 2004). In Pakistan, about 25% of youth were involved in some form of drug abuse and the most commonly used drug among adolescents and youth was marijuana (Masood & Sahar, 2014). One study conducted among 99 addicted people aged 15-39 revealed that 68.1% youth aged 20-24 took drug once a day and main cause of drug use was frustration and peer group influence rather than the influence of parental drug addiction (Hasam & Mushahid, 2017).

One study conducted in 2010 and 2014 on current use of hard drug user revealed that the number of users dramatically increased in Nepal over that four-year period (Rayamajhi, 2016). Moreover, the study also showed the number of hard Drug users nearly doubled in 2014 and the annual growth rate was 11.36% with an overwhelming majority of male users. Altogether, 6% of adolescents and youth used hard drugs but the overall use of hard drugs is low nationally (3%). Hard drugs are all forms of synthetic opiates and chemical substances that are treated as illicit drugs by law such as Cocaine, Heroin, LSD, Morphine, Buprenorphine, Propoxyphene, dendrite etc. The use was similar to the national figures among youth, male, urban areas, and Kathmandu valley, relatively advantaged Janajatis and with educational level SLC or above (MoHP, 2012).

Prevalence of Risky Sexual Behavior

All around the world, sexual activity begins for most men and women between 15-19 years. In South Asia and South East Asia region, early marriage is the norm. Almost half (45%) of youth (female) married before age 18 and almost one in five adolescent girls (17%) are married before age of 15 (UNICEF, 2017); therefore, the women's median age at first sexual intercourse is therefore low, for example, it is 18.5 for male and 16.5% for female in Nepal but for men's median age for first sexual intercourse is not linked to marriage (Wellings et al., 2006). It shows that there is a remarkable difference in sexual behavior on the basis of gender in South and East Asian region.

Sexual behaviors that are unprotected are risky and unprotected sexual intercourse usually results in unwanted pregnancy, sexually transmitted infection and unsafe abortion among adolescents and youth. Young people aged between 15-24 years accounted for about 41% of all nonmaternal-fetal HIV infection and young females constitute more than 60% of all young people living with HIV in the world (UNICEF, 2011).

In South Asia, more adolescents are indulging in pre-marital sex more frequently and at earlier ages (Joshi & Chauhan, 2011). The incidence of teenage pregnancy and the related rate of induced abortion in unsafe conditions is also high. Nearly half of all HIV infections occur among those aged 15-25 years in India. A study conducted among urban adolescents in Bangladesh revealed that almost 39% of male adolescents had sex with commercial sex workers and at the same time, 56% of them did not use condom during sexual intercourse (Rob & Mutahara, 2000). Unsafe sexual behavior as a mode of transmission of HIV infection in Nepal was 70% in the first six months period of 2017 (NCASC, 2017). Cumulative HIV infections by age

was 11.5% among youth and 3% in late adolescents (NCASC, 2017). In comparison to men, South Asian women are prevented from mobility, education, health and nutrition while on other hand men were more mobile, less monitored and therefore they usually involved more in RSB compared to women.

The prevalence of RSB among male students was also high in Nepal. Among all sexually exposed adolescents, more than one-third of the adolescents had two to four sexual partners (Thapa & Chaulagain, 2015). More than two-fifth of the students in Kathmandu are engaged in sexual intercourse and three fourth of the sexually active students had first sexual intercourse at age of 15-17 (Adhikari, 2015). The same study also revealed that nearly half of male students who were sexually active had multiple sexual partners whereas the percentage of multiple partners was low in female students. The high involvement in RSB among male students may be due to Nepali cultural ideology of masculinity. Men are permitted to involve in sexual behavior to prove their manhood or sexual capacity and they are always considered good character person even if they engage in premarital and extramarital affairs (Thapa & Chaulagain, 2015) and such behavior is accepted.

Table 2.2

Prevalence of HRBs among Adolescents and Youth

		Percentage of prevalence of HRBs			
Survey Report	Age group	Cigarette smoking	Alcohol use	Drug use	RSB
Nepal Demographic Health Survey 2011	Men 15-19 20-24 Women 15-19 20-24	13.1 26.5 0.5 1.9			Multiple partners Men 2.2 6.6 Condom use in last sex 67.7 70.0
Nepal Demographic Health Survey 2016	Men 15-19 20-24 Women 15-19 20-24	15.3 31.0 0.5 1.2			Multiple partners Men 2.2 6.6 Condom use in last sex 67.7 70.0
Adolescent and Youth Survey(2012)	15-19 20-24	16.74 25.40	23.52 34.44	3.82 6.34	

Source: (National Demographic Health Survey, 2016; 2011; Adolescent and Youth Survey, 2012)

Determinants of Health Risk Behaviors

As explained in the preceding sections, the major determinants of HRBs range from personal level to broad societal levels. Many factors such as parental influence, family structure, peer influence, role model influence, advertisement and promotion in media, socio-economic factors, availability of substances, knowledge, attitudes and

beliefs all play a part in the initiation and continuity of HRBs in adolescents (Jiloha, 2009). Given the context, HSS students in Kathmandu metropolitan city may learn HRBs due to several embedded elements of ecological systems within society such as personal characteristics, family, peer, school, neighbor and media exposure.

The rest of the system in ecology as well as the links between them have not been covered in detail. The role of exosystem, although relevant to this research, could not as well be covered. Similarly, the role of macrosystem and chronosystem, such as cultural and social aspects such as language, customs also could not be covered. Macrosystem and chronosystem usually cover higher level of changes over a longer period of time and hence the time limitation imposed by this study could not consider those factors. But, these factors have been addressed, wherever relevant, during the analysis of data.

Microsystem

In this research, the immediate environment (microsystem) including school, family, peer and neighbor have been discussed in detail whereas interrelational factors (mesosystem) such as parent-school interaction, has been explored in some detail only.

Personal Attributes (Gender, Ethnicity, Accompaniment)

One's belief on permanent relationships, sexual contact for variety, a desire for cash and kind, unfulfilled desire in relationships, level of faith and tendency towards RSBs are important factors in determining microsystem context of an individual (Mutinta, Govender, Gow, & George, 2012). However, personal attributes such as gender, ethnicity and religion also shape attitude and belief system and contribute to determining HRBs of the adolescents and youth. Empirical studies conducted in the past also support microsystem theory that several personal traits and attributes play important role in risk taking behavior among adolescents and young people (Adhikari,

2010). In general situations, gender, marital status of adolescents and level of education are the main predictors of RSB (Adhikari, 2015).

One of the studies conducted among 1137 college students in the Kathmandu valley through a self-administered questionnaire indicated that age, ethnicity, types of sex partners and age at first sexual intercourse are significantly related to condom use at first sexual intercourse (Adhikari, 2010). The same study also highlighted that students in older age groups were more likely to use condoms at their first sexual intercourse than students who first had sex before 16 years of age. This indicates that age of adolescents has a role in protective behaviors.

Another study conducted among 573 male college students in Kathmandu showed that Hindu students' religion has twice the premarital sexual experience than those who follow other religions (Adhikari & Tamang, 2009). This might be due to the differences in cultural and social aspects associated with Hindu religion. But, the dominance of Hindu religion of Nepali culture or such a single study alone cannot reflect the whole sexual risk taking behavior among adolescents. Although Hinduism remains the dominant religion, Nepal's 2011 census shows a major increment in other religions including Buddishm, Islam, Kirant and Christianity. Hence, this research considered it useful to include religion as one of the independent variables.

Furthermore, Nepal Adolescent and Youth Survey, 2012 conducted among 14,835 adolescents and youth aged 10-24 in all five regions of the country showed relatively high percentages of *Janajati* had used substances such as liquor, cigarettes, tobacco, hard drugs and injectable/medicines (MoHP, 2012). Culturally *Janajatis* were more flexible to have liquors in their festivals and ceremonies. The same survey indicated that adolescents aged 15-19 showed greater than youth confidence in giving up alcohol, tobacco and drugs (MoHP, 2012). Therefore, in this research ethnicity was

also considered as one of the determinants of risk taking behavior among adolescent and youth age groups.

Besides age, caste and religion, gender can also influence risk-taking behavior among adolescents. A study conducted to estimate the prevalence of tobacco use among the students of *Dharan* municipality showed that a significant proportion of male adolescents used tobacco products compared to female students (Niraula, Ghimire, Singh, Pokharel, & Pradhan, 2013). In the dominant patriarchal society, it is likely that such HRBs are less among girls compared to boys.

Home Environment and Family Structure

In the eastern culture adolescents and youth are more influenced by parents and are economically more dependent on them, their risk taking behavior could be very different from western culture (Conrad, Flay, & Hill, 1992 as cited in Jiloha, 2009). Adolescents and youth who have less communication with parents at home have greater probability of their being involved in risk behavior. Children from business class or lowly economic category of houses are positively associated with RSB (Wangeri, 2013). Similarly, family income and family type are significant factors affecting RSBs among adolescents (Paudel & Paudel, 2014). Some studies have pointed out that adolescents from business class and unemployed or low income parents are generally engaged in sexual behavior than adolescents from the other socio economic categories (Wangeri, 2013). These studies indicate the importance of parental role in adolescents' health behavior decisions.There is little research, however, that indicates whether or not educational level of parents influences HRBs in adolescents and youth.

There is a complex association between parenting and RSB. For instance, more strictness by mother and less strictness by father is related to lower sexual risk

behavior among adolescents (Kelloren & Deutsch, 2014). When adolescents have a close relationship with parents, they are likely to internalize parents' value and ideas about adopting socially appropriate behavior and they are less likely to involve in RSB. Furthermore, stronger parental monitoring is related to less sexual risk behavior (Aufderheijde, 2015) and parental monitoring and enforcement of rules were associated with decrease in sexual involvement among adolescents (Dittus, Michael, Becasen, Gloppen, Mccarthy & Guilamo-Ramos, 2015). Parental monitoring is usually different for boys and girls (Nnebue, Chimah, Lawoyin, Ilika, & Duru, 2015) which may be the reason for variation in RSB between the genders.

A study conducted in Nepal revealed that more than three quarters of students did not communicate with parents on matters related to RSB because sexuality still remains a taboo in Nepali society, and parents are reluctant to talk about sexual matters with children (Thapa & Chaulagain, 2015). However, spending time in family communication usually decreases RSB among adolescents and youth (Abebe, Tsion, & Netsanet, 2013). Adolescents staying with single or no parents are more likely to involve in sexual debut than adolescents staying with both parents (Santelli, Lowry, Brener, & Leah, 2000). Another study from Pakistan revealed that drug use among adolescents and youth is associated with problems in family structure (e.g. an authoritarian father and a submissive mother and when family communication is minimal) (Masood & Sahar, 2014).

Parental monitoring and care is very important factor that prevents adolescents and youth from HRB. For instance, as adolescents grow older and become more independent from their parents and more connected to friends, so they may involve in RSB due to favourable environment (Mutinta & Govender, 2012). Furthermore,

marital problem or divorce among parents (single parenting) is also associated with drug use among adolescents and youth (Jiloha, 2009).

A study conducted with 417 adolescents in Kathmandu, Nepal through self administered questionnaire also showed that gender, family income, family type were significant factors affecting sexual and reproductive health practices (Paudel & Paudel, 2014). Miller (2001) mainly discussed how the different factors determine the risky sexual behavior among adolescent in multisystem perspectives especially focusing on self, family and extrafamilial systems of influence. Witnessing the violence in the family is significantly associated with risky sexual touching (Dekeke & PT, 2014). Female students who witness parental violence are almost two times as likely to feel bad about themselves (Nicodimos, Gelaye, Williams, & Berhane, 2009) and unable to negotiate to have safer sex and avoid forced sex. Witnessing parental violence is associated with delinquency and it increases the risk of sexual risk behavior (Zinzow et al., 2009).

Therefore, at household level, family structure and family process level variables are predominant. At structural level, parental socio-economic status and educational level variables are considered important whereas at family process level, parental monitoring of adolescents behavior, parent and adolescent relationship and parent adolescent communication have influence on sexual risk taking behaviour (Miller, 2001).

Peers

Peer pressure on risk taking and decision making are prominent among adolescents and youth than adults (Margo & Steinberg, 2005) but Wangeri (2013) mentioned that adolescents do not experience peer pressure to engage in the sexual risk behaviors. Sexual risk behavior is prevalent among adolescents and youth and

these behaviors are positively associated with alcohol intake, watching porn materials, joining night clubs with peers and *Khat* chewing (Mulu, Yimer, & Abera, 2014). This implies that many behaviors are usually performed among peer circles and one risk behavior initiates or fuels the other risk behavior.

Sexual permissiveness of the peer is associated with higher frequency of risky sexual practice (Potard, Courtois, & Rusch, 2009). Adolescents are more likely to have sex if they believe their friends have more positive attitude towards child bearing and have permissive value on sexual intercourse (Peci, 2017). Adolescent and youth may involve in sexual activities when they believe that they gain friends' respect having sex (Sieving, Eisenberg, Pettingell, & Skay, 2006). Therefore, the modelling of peer behaviors is quite common in all societies including Nepal. Adolescents and youth prefer to form friend circle with those who display similar perception (Wang, Hipp, Butts, Jose, & Lakon, 2015) indicating that peer influence plays a vital role in the adoption of risky behavior.

Sexual activity is often a gendered phenomenon. Boys are more susceptible to risky behavior than girls because girls are more resistant to peer influence than boys and the increased perceived social reward for boys (Bingenheimer, Asante, & Ahiadeke, 2015; Widman, Choukas-Bradley, Helms, & Prinstein, 2016). Peer pressure to have sex is associated with multi-partner sexual relationship (Negeri, 2014).

School

Adolescents may spend more time in school than at home. Students who feel more connected to their school are less likely to involve in health related harmful behaviour (Porter & Lindber, 2000 as cited in Center for Mental Health in Schools, 2007) and those adolescents also show lower level of emotional distress, risk

behaviour and aggression (Ozers, 2005, as cited in Center for Mental Health in Schools, 2007).

Socio environmental factors such as rurality, single sex schools, perception of sex as a symbol of manhood by the students, culture of Goldrush (attempt to find new admitted students by senior in academic year for sex balance), social acceptance by peers, social status of students and freedom from parents' control also determine sexual risk behaviour among students (Mutinta & Govender, 2012).

Neighbor

There is little literature available on neighbor's role and HRBs among adolescents and youth. Neighbors are individuals in the same social setting who may act similarly because they share common ecological factors and face the similar institutional evironment (Tsusaka, Kajisa, Pede, & Aoyagi, 2011). Neighbors are important and people usually receive help from neighbors in day-to-day life in rural areas, whereas in uraban areas there is usually little interaction with neigbours (McGahan, 1972). Adolescents and youth health risk behavior can be observed by neighbors and they may inform parents. Alternatively, adolescents may learn risky behavior from the neighbors or neighhood friends.

Meso and Exosytem

Meso system of HRB includes interaction between two or more microsystems such as parents teacher interaction. The exosystem includes media influence in shaping the behavior of the students. Further more, exosystem of HRB also includes legislation and policy on adolescent's behavior. To find out the determinants HRBs among adolescents and youth in Nepal, the researcher reviewed existing policies on HRBs, education and youth.

Health Policies and Strategies

The Interim Constitution of Nepal considers health and education as a fundamental right of people and emphasizes on the mobilization of youth for national development. Accordingly, the National Health Policy clearly emphasizes that all health organizations incorporate youth- and adolescent-friendly services (GoN, 2014). A recent national reproductive health program steering committee emphasized for providing contraceptives and family planning services to adolescents irrespective of their marital status. Further, service providers should not ascertain whether a client is married or not while providing family planning services. The National Reproductive Health Strategy (1998) considered adolescent reproductive health is one of the major components of integrated reproductive health services (MoHP, 1998). However, even if all the components of health are currently integrated, it has not been functioned well and adequate resources have not been mobilized for the implementation of services (Hardee, Agrawal, Luke, Wilson, Pendzich, Farrell, & Cross, 1999).

Nepal also has the National Adolescent's Health and Development strategy (2000), the goal of which is to improve the health and socio-economic status of adolescents (MoH, 2000). The main objective of the strategy is to increase availability and access to information and build skills of adolescents, service providers and educators on adolescents' health. The strategy aims to increase the accessibility and utilization of health and counseling services. It also iterated to create a safe and supportive environment for adolescents so as to improve legal, social and economic status (MoH, 2000). The strategy, however, covers the essential aspects of adolescent sexual and reproductive health in a very abstract form, making the strategy very difficult to implement. For example, one of the foci of the strategies is a safe and

supportive environment but the specific objectives are silent on which policies and law actually enable adolescents' health and development.

The strategy instead suggests the aim to form and revise policies and laws as needed. Moreover, adolescent and youth health related policies, strategies and practices are not closely linked to the formal education system. Health related information provided in high school curriculum mostly is not connected to the health related services, counseling and skills provided through health institutions. Strategies and program activities are mostly designed without a complete understanding of protective and risk behaviors among adolescents and youth and their major determinants. Youth friendly health facilities and youth information corners in public schools, which currently are Government's major interventions, are being gradually established in all 77 districts. Other major intervention programs, specially designed and implemented for adolescents and youth by the Government of Nepal, particularly the Ministry of Health, are briefly described. Health related policies are presented chronologically in Annex III.

Youth Policy

National Youth Policy of Nepal (2010) defines 'youth' as women, men and third genders aged between 16-40. However, this is not in line with the definition of youth in health policy and strategies which consider youth as individuals between ages of 20 and 24 and adolescents as individuals between aged 10 to19 (WHO, 2019). This clearly indicates the conflict in definitional approaches taken by different ministries. Due to such conflict, the possibilities of program duplication is higher and that certain age group will benefit more while the other groups may be deprived of the opportunities. Thus, the national health policy and national youth policy require fine tuning so that they are more coherent and more easily implemented.

In addition to lacking in coherence, the majority of Nepal's policies are silent on health related risk behaviors such as tobacco consumption, drug abuse and alcoholism. These HRBs are, however, briefly covered under the mental health awareness and nutrition sections, such as the incorporation of health education in curriculum from the elementary level, and the emphasis on the importance of incorporating clean drinking water, healthy lifestyle, nutrition, healthy environment and avoiding hazardous work.

Despite policy lacuna as explained above, the Government of Nepal has considered youth population as the major force for sustainable development of the country. In this regard, the Government has developed a 10 year strategic plan on "Youth Vision-2025" in order to materialize the rights, aspirations and needs of the youth (GoN, 2015). Youth Vision-2025 aims to make Nepali youth strong, competent, competitive and self-reliant to help build a modern, just and affluent Nepal. It emphasises education, health, training, leadership development and employment for 16-24 age groups (MoY&S/GoN, 2015). The National Youth Council is the government body to implement Youth Vision-2025.

Education Policy

National Curriculum Framework (NCF) was developed as a part of the reform of education sectors which provided the policy framework for curriculum development (MoE, 2007). According to the NCF, the objective of secondary education is to produce proficient and healthy citizens for contributing to economic development. Its ultimate aim is to produce semi-skilled human resources and to provide basic knowledge that would be essential for getting a university degree.

A study conducted to review and evaluate national school curriculum and textbooks for primary and secondary levels revealed that there is less linkage and

coherence across levels including secondary and higher secondary level (Khaniya, Parajuli, & Nakarmi, 2015). It indicates a disjointed approach to preparing students for life after school. Moreover, coherence and linkage were lacking in the topics related to HRBs at different levels of primary and secondary education. Even though not as comprehensive as UNESCO standards, the inclusion of comprehensive sexuality education topic in lower secondary and secondary level is encouraging from grade 6 to 10 (UNFPA/N, 2016). Comprehensive sexuality education, however, still has wider implementation gaps mostly due to the scarcity of trained teachers (UNFPA/N, 2016).

At the broader policy level, while Nepal has made commitments to address the issue of adolescents and youth health issues by affirming commitment to the Sustainable Development Goals (SDGs), inadequate domestic policy priority may undermine such commitment. Nepal has signed up to a number of international agreements including the Child Rights Convention, the International Conference on Population and Development (ICPD), the Beijing Platform for Action and the SDGs (NPC, 2015). Unchecked and uncontrolled HRB issues of adolescents and youth will impact the achievement of the SDGs, especially goal 3 (Ensuring healthy lives and promote wellbeing for all at all ages) and goal 4 (Ensuring inclusive and equitable quality education and promote lifelong learning opportunity for all). Similarly, achievement of goal 5 (Achieving gender equality and empowering all women and girls) and goal 8 (Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all) are also related to adolescents' health issues.

National Policy on Tobacco

The World Health Assembly adopted the framework convention on tobacco control (FCTC) in order to strengthen smoking control and save global population. Altogether 177 member countries signed and ratified FCTC. Nepal became a party to the World Health Organization FCTC in Feb 2007, following which the Government of Nepal introduced the Tobacco Product Control and Regulation Act (2011) which is the primary law governing tobacco consumption. An additional tobacco control bill, Tobacco Product Control and Regulatory Bill (2010) was approved on 11 April 2011. It emphasized smoking ban in public places, workplaces and public transportation. It also bans on the sale of individual cigarettes, unlicensed tobacco vendors and sales to minors or children under 18 years of age and pregnant women. It also obliges tobacco companies to cover seventy-five percent of tobacco packaging space with pictorial health warnings. The law also introduces a health tax on tobacco products, and a total ban on tobacco advertisements, promotion and sponsorship in any form (WHO, 2018). The law also clearly indicates punishments and penalties for violation of new regulations.

The Bill also specifies that tobacco products cannot be sold from groceries or general stores which sell daily essential goods. Store should keep billboards and signs with messages that tobacco products will not be sold to people below the age of 18 and pregnant women (Kantipur, 2017). However, implementation of Tobacco Control policies have some gap, for example in packing and labeling of tobacco product there is a lack of guidelines for implementation and the implementation of ban of tobacco advertisement, promotion and sponsorship is not effective due to lack of penalty and penal provision for those who violate the order (Mahato, 2012).

National Policy on Alcohol Use

The Nepalese Government passed a "National Policy on Regulation and Control of Alcohol" in 2017, which totally banned alcohol advertisement, promotion and sponsorship. It discourages the use of alcohol in Government-sponsored programs and events and discourages availability by restricting sales to licensed shops from 5 am to 7 pm. Until 2017, Nepal had no restrictions on time and day for sale. The policy also banned the sale of alcohol in public places including heritage and sports sites and educational institutions (IOGT, 2017).

National Policy on Drugs (Narcotics Law)

Nepal's basic drug law is the Narcotic Drug Control Act (1976). This law completely bans the cultivation, production, manufacture, export, import of drugs. It also bans possession, sale and use of drugs. The Narcotic Drug Control Act was amended in 1993 to make it compatible to the UN Convention on Narcotic Drugs (1961) and the 1972 Protocol, which covered the production, manufacture, sales, import and export of drugs. The Home Ministry updated Narcotic control policy in 2006 and it addressed drug production, abuse and trafficking. Its strategy was to supply control and demand reduction. It also emphasized risk reduction, research, collaboration and resource mobilization (INCSR, 2010). The Drug Control Strategy, 2010 also targeted to motivate school and parents to monitor the conduct and behavior of students, to include drug education in the curriculum above grade six and engage students to prevent them from drug use. Such strategy was based on the drug statistics which showed drug use is common among adolescents and three fourth of total drug user belong to the age group less than 20 (MoH, 2010).

In summary, the constitution of Nepal is committed to the rights to healthcare and treatment for all citizens, irrespective of age, sex, creed and color and a number of

laws and policies are in place. Nepal has also committed to many international agreements, rights and targets. But, the implementation of laws, policy and international commitments remain weak, the effect of which is directly related to addressing the overall health and wellbeing of adolescents and youth.

Media Exposure

In urban areas, media exposure is rising with the development, in an availability of and access to information technology. Media exposure contributes to drinking and smoking but is not related to sexual initiation (Esobar-Chaves & Anderson, 2008). There is evidence of the association between internet addiction and alcohol abuse in adolescents (Ko, Yen, Yen, & Chen, 2008) and media exposure is positively related to smoking intention due to perceive smoking prevalence in peer however this study has small effect size (Yang, Salmon, Pang, & Cheng, 2013).

Entertainment media such as print, radio, music, television, cinema, web-based media and video-computer games can instigate smoking behavior in adolescents and youth (Bhaumik, Arora, Singh, & Sargent, 2015). Similarly, media exposure is important in shaping cognitive belief about tobacco and expectancies. A systematic review of 17 longitudinal studies also supported relationship between media exposure and negative effects over time (Nunez-Smith, Wolf, Huang, Chen, Lee, & Emanuel, 2010). This review also revealed that strong relationship between media exposure and tobacco use. Causal relationship is moderate for illicit drug and alcohol use. However, there lacks literature explaining that exposure to any particular media may enhance or decrease all types of HRBs.

Conceptual Framework

Adolescents and youth are embedded in multiple environmental systems. As the literature review in the previous sections explained, adolescent and youth

development is the outcome of complex interactions between personal and system factors.

Table 2.3

Risk and Protective Factors Related to Ecological System

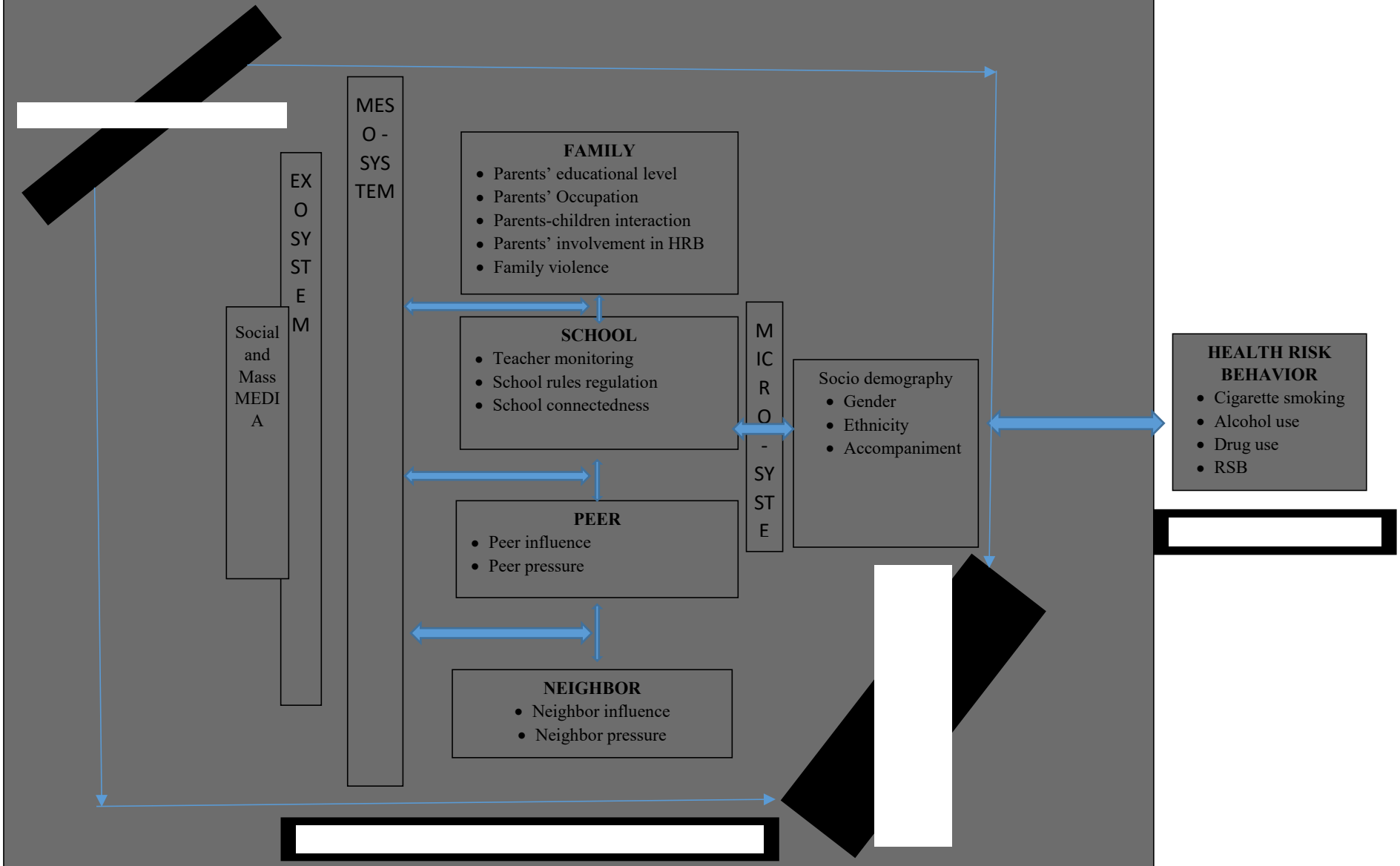
Level	Risk Factors (Characterstics that increases the likelihood someone will engage in risky behavior)	Protective Factors (Characterstics that help someone cope successfully and to avoid engaging in risky behavior)
Personal	• Experienced violence • Personal identity related to gender, ethnicity, relegion • Low perceived risk of harm • Staying alone/with other than parents	• Strong bonding among family members • Positive self concept • Positive personal qualities • Religious identity • Living with two paents
Family	• Family violence • Parental involvement in HRBs • Family history of problem behavior	• Family attachment and bonding • Positive parenting style • Living with parents • Higher parental education
Community	• Low academic performance • Lack of personal commitment to school • Friends who engage in problem behavior/peer pressure • Percieved favorable attitudes toward the problem behavior • Availability of substances • Low neigborhood attachement • Media exposure to violence and problem behavior	• Connected to school • Teacher monitor and care • Caring school climate • Participation on ECA • Positive peer role model • Safe, supportive, connected neighborhood

Behaviors in adolescents and youths, either protective or risky, depends on complex interactive factors at different levels as shown in Table 2.4.The conceptual

framework of this research primarily hinges on risk factors (Figure 3) and is based on the concept developed by Bronfenbrenner which puts an individual in the middle of different ecological tiers and each tier direclty or indireclty influences the individual behavior (Kamenopoulou, 2016). As previously mentioned, a microsystem includes the direct interaction of adolescents and youth with others. It contains characteristics of individual such as gender, ethnicity, accompaniment, age, religions, educational stream, job status etc. and youth immediate environment such as familial factors. In general, eenvironment generates risks and protective processes occur across all systems based on which addictive effects of risk and protective factors are determined (Ballam, 2013).

In this study microsystem such as adolescents and youth individual characteristics, family, school, peers have been considered based on the literature and field observation. At the individual level, gender, age, ethnicity and accompaniment have been considered as prime factors. Furthermore, the familial microsystem includes parental education, occupation, monitoring, connectedness, communication and family violence. Based on social learning theory, an individual student, at the center of ecological system, are influenced by imitation of parents, peers, teachers and neighbors. The meso-system is characterized by the interrelation of two or more microsystems. In this research, parent-teacher communication has been considered to determine whether they, individually or in combination, influence the health risk behavior of adolescents and youth. The research has also considered that the external environment such as media could also influence an adolescent's behavior. Based on review of several literatures, following conceptual framework is developed.

Figure 3. Conceptual Framework: HRBs of HSS Students



Source:(Bandura, 1969; Bronfenbrenner, 2005; Jessor et al., 1968)

Chapter Summary

This chapter reviewed the literature related to HRBs and the determining factors among adolescents and youth at global, national and sub-national context. The chapter also highlighted theoretical perspectives and laws/policies related to health, education and youth. Of the major theories related to HRBs, this research intended to use a holistic approach and hence chose the ecological system theory to study the HRBs and its determinants. As the literature shows, HRBs among adolescents and youth are determined by personal, family and community level factors and the extent of influence of the determinants on the four major HRBs are not always the same. HRBs in Nepal, are also compounded by the fact that although most legal policies and international commitments are promising, their implementation and monitoring part remain weak. The empirical literature in Nepali context has been insufficient to show the holistic picture of HRBs and its determinants. However, the literature hints at the major determinants of each HRB. Hence, that is another reason that this research intended to undertake a holistic analysis by placing the ecological system theory at the centre and considering four major HRBs and the impacts of determinants.

CHAPTER III

RESEARCH METHODOLOGY

This chapter explains how the research was conducted by examining the major adolescent and youth. HRBs and their correlations with determinants in the context of personal, family, community or the broader socio-environment. The researcher has included only secondary school students; later sections will describe the reasons for this decision. This chapter also details the philosophy of research, research design, site selection, data collection tools, data analysis and interpretation methods and procedures of the research. Questions related to reliability, validity and ethical considerations are answered at the end of this chapter.

Research Philosophy

Research philosophy has greatly helped the researcher in shaping the research design. Both personal and social philosophical premises informed the research design. On a personal front, many researchers do have philosophical intentions or motivation for undertaking a study (Cohen, Manion, & Morrison, 2018). Accordingly, the researcher has a long working history in the field of reproductive health care involving adolescents and youth, and practical experience in the methodology of inquiry and investigation into this kind of topic. This experience informed the researcher that research in this area was needed and possible too.

The researcher has attempted to test related assumptions and concepts that orient broader thinking (Bogdan & Biklin, 1998) around health risk behavior prevalent in adolescents and youth as a major public health concern in today's context. Remaining within the confines of four different determinants (individual, family, community or societal) of adolescents and youth's HRB, this research is premised on

three philosophical approaches to investigation. These include ontology, epistemology and axiology and constitute a journey of developing various thought patterns about the research topic.

Ontological premises helped the researcher to “get into the skins” of adolescents and youth, and understand their perceptions of HRBs, how things really are and how things work (Scotland, 2012). In a true sense, ontological philosophy helped to construct the foundation level queries concerning if and whether the HRB and its determinants were one verifiable reality or there existed multiple and other socially constructed realities (Patton, 2002). This query was important at the beginning of the research because it was not known then if, and to what extent, adolescents were engaged in HRB. The initial query was quantified into numerical values by asking whether participants were involved in cigarette smoking, alcohol use, drug use and RSB. This helped to establish the relationship between the HRBs and determinants and their measurable extent was estimated.

Epistemology requires researchers to enquire about the nature of knowledge and truth (Chilisa & Kawulich, 2012). This researcher viewed HRB and its determinants could be tested empirically or extrapolated to confirm/unconfirmed or to generalize assumptions (Eichelberger, 1989). In this study, data in all four HRBs and major determinants were collected in field/public schools of KMC based on a questionnaire and respondents were allowed to answer anonymously.

Axiological philosophical premise was used by the researcher to assess the role of researcher’s own value judgements on all stages of the research process (Li, 2016). The researcher strove to maintain independence from data collection and analysis and take an objective stance. For the purpose of this study, this researcher used pre-

developed instruments and framework to collect and analyze data so that post-research biases, prejudice and any personal interest could be minimised.

Overall, the post positivist paradigm, involving elements of all of the above philosophical premises, was used to help predict results, test theories, and measure the strength of relationship between HRBs and their determinants (Chilisa & Kawulich, 2012). Accordingly, research methodology in this study has been derived from ontological and epistemological research philosophies which generally refers to the logic and theoretical perspectives. The methods are premised on axiological philosophy referring to procedures and techniques of analyzing and interpreting data (Long, 2014). In this study, the researcher assumed that knowledge was objective and tangible, so the role of the researcher was more of an observer while detecting the relationship of HRBs and its determinants (Long, 2014).

A quantitative approach of cross-sectional survey was used during the course of the research (Visser, Krosnick, & Lavraakas, 2000). The survey was a structured HRB questionnaire, prepared through a rigorous iterative construction process, to assess the presence and frequency certain behaviors like cigarette smoking, alcohol use, drug use and RSB in students.

Research Design

The researcher used an integrated research design by including different components for collecting, measuring and analyzing data (USC, 2018). The research design has guided the entire research process such as research methods, sampling, data collection, analysis and interpretation in a pre-specified manner.

This research design is a cross-sectional survey. The researcher adopted this design to make data collection more relevant for assessing the prevalence of HRB and its determinants at personal, family, community and societal level. The research design

also followed the descriptive approach for predicting and explaining the prevalence of HRBs. Furthermore, exploratory, analytical and correlational approach were employed based on the needs and relevance to better understand the correlation between HRB (smoking, alcohol use, drug use and risky sexual behavior) and contextual determinants (gender, age, ethnicity, accompaniment, parental education and occupation, parent-children connectedness in terms of relationship, communication and monitoring, family violence, peer influence and pressure, neighbour influence and pressure and media exposure).

The overall data analysis approach is quantitative which has been predominantly used to test the theories and hypotheses. Both dependent variables (HRBs) and independent variables (determinants of HRBs) were measured and analyzed objectively by using statistical instrument (Creswell, 2018), specifically the computer based SPSS version 21.

This research considered that determinants of HRBs include ecological factors mostly focussed on microsystem (individual, family, peer, school, neighbour) and meso system (Interrelationship between family, peer, school and neighbour). It also considers exosystem (media) to some extent but did not consider macrosystem (attitude and belief). Therefore, from the ecological perspective the researcher investigated determinants at individual, family, community or societal level and their interrelations.

In this research, an individual student has been considered as the central point of an ecological system. Family, peer, school and neighbour has been located within the student's microsystem, assuming that, it exerts influence on the student's health behavior. This research mainly considered this tier as the immediate environment that directly influences the student's behavior. Other tiers of the ecological system indirectly influence the development of HRBs in a student. A student's gender,

ethnicity, accompaniment are considered as individual factors that determine student's HRB. Some other researchers (Salzar et al., 2010), however, have considered ethnicity and gender as societal level determinants in a less diverse community where gender and ethnicity patterns are more prominent. In contrast, since the students in this research were diverse and migrated from different district, gender and ethnicity patterns were likely to be diverse as well. Additionally, this research has not mentioned the relational factors within a system and in between another system as separate entities such as parent-child interactions, parent-school interactions, and parent-neighbors' interactions.

Instrument and Scale Construction

Health Risk Behaviors, such as smoking, may be measured in terms of life time use, or the current or more recent patterns (Irish, 2011). Along these lines, this research has placed primary focus on current HRBs, however, it has additionally used a five-point measurement scale to include the likelihood of that behavior becoming a lifetime behavior. HRB such as cigarette smoking status was assessed with a single question, for example, "how often do you smoke"? The answer of the question was recorded in five-point scale as "I smoke daily or always", "I smoke very often", "I smoke sometimes or occasionally", "I am ex-smoker or I smoke rarely" and "I have never smoked". Similarly, Dickson et al. (Dickson, Wiggers, Leeder, & Fisher as cited in Irish, 2011) used a four-point scale to the question "which of the following best describes your smoking status"? The responses were: "I smoke daily", "I smoke occasionally", "I am ex-smoker", "I am a non-smoker". Some researchers have used in-depth or heaviness of smoking instead of obtaining frequency through single question including frequency per day, first smoke after waking up, smoking during illness etc. The researcher has also used smoking frequency, initiation age, financial matters to measure in-depth smoking status.

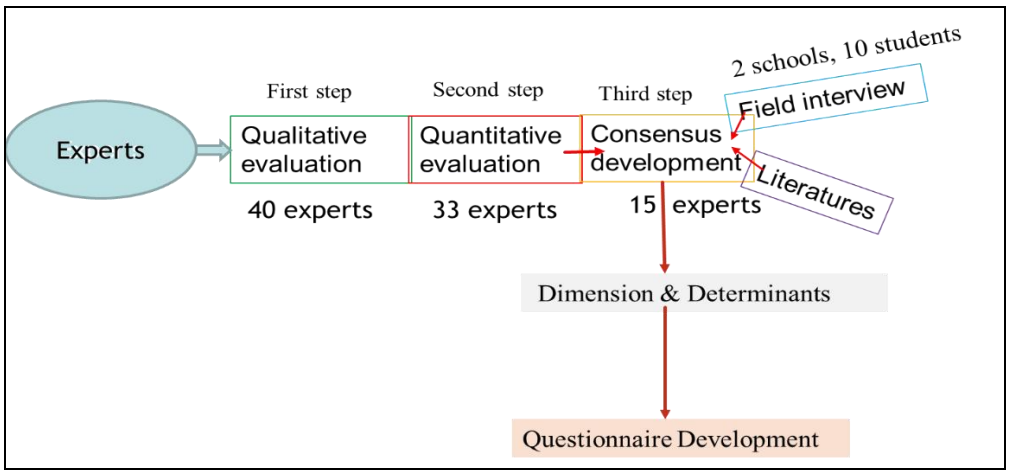
Health Risk Behavior is not a normative behavior, and respondents tend to hide such behaviors. So, questions were asked in five frequency indicating categories namely always, mostly, sometimes, rarely and never in order to get the actual status so that respondents could choose one response applicable to them without hesitation. Data were analyzed based on binary category “yes” and “no”. As explained earlier, a questionnaire was the main instrument for collecting data.

The questionnaire had six sections. The first section was designed to collect individual student’s socio-demographic profile such as educational stream, age, gender, religion, accompaniment, job, marital status, family size, types of family, attendance at school, and future plans. The second section included family information regarding parental education and occupation, parental marital status, family income level, parent-children interaction, parents’ and siblings’ HRB status, family violence etc. The third section included information regarding school such as teacher’s monitoring, teacher’s time availability, strictness of school and teacher, connectedness to school, seating position in class, peer influence and pressure, and peer involvement in HRB. The fourth section included questions on neighbors and media exposure. The fifth section had questions related to four major health risk behaviors. The question included status, frequency and reasons for involvement in HRB by an individual student. Each type of HRB was measured in the five-point Likert scales – always, very often, sometimes, rarely and never. The sixth or the final section of the questionnaire was designed to record student’s perception about school curriculum, school and government role to minimize the HRB.

Instrument in this research was developed through a rigorous Delphi method (Keeney et al., 2011). The Delphi method was used in order to make the instrument more valid. The method was carried out in three steps (Figure 4). In the first step, a

questionnaire with four qualitative questions was sent to subject specialists (experts) by email. Fifty subject specialists were selected on the basis of their: knowledge and experience of HRBs among adolescents; availability, capacity and knowledge to participate; and effectiveness of communication skills. The overall result and validity of the developed instrument revolved around those experts' views and consensus in this research. The identified experts were informed about the context and objectives of the study in brief by telephone. They were then asked for voluntary participation. After getting their preliminary approval for participation, explicit cover letter, open ended questions on health risk behaviour of adolescents along with detail instructions and demographic sheet were emailed to them. The questionnaire was then further refined and finalized after analysing the response received from the first step.

Figure 4. Delphi Method for Tool Construction



In the second step, an online questionnaire was developed in Google forms on the basis of major issues as identified in the first round. HRBs and their determinants were listed, and a group of expert panel members were asked to rate each item on a five-point Likert scale (from strongly agree, agree, neutral, disagree, strongly disagree). Altogether 40 respondents of step I were requested to participate in step II, with 33 responses. Items that reached greater than 70 percent consensus (i.e. agreement or strong agreement) were selected for round III. During the first and second step of the

Delphi process, anonymity was maintained to provide equal chance for each expert to express views and ideas, unbiased by the identities of other experts in the first two steps.

In the third step, the experts who responded in step II were invited for a panel discussion at the university. During the interaction, experts were not blinded to the researcher, but their information was kept confidential and not shared outside the group. This was done to help reach consensus among experts on the content and quality of measurement instruments. Finally, items were verified by experts. Few items were added literature review and field interactions. All these steps led to the drafting of a questionnaire.

The draft questionnaire was then subjected to a pilot test. The pilot survey was done to obtain estimates expected response rates and data quality. It also helps to ensure validity and comprehensibility of the questionnaire (Silman & Macfarlane, 2001). Pilot test of questionnaire was done among 42 students (almost 12% of sample size) of grade 12 in two public schools of Lalitpur Municipality. The schools were selected purposively for the pilot test. Students and school characteristics were ensured to be similar to Kathmandu Municipality public schools (Femwiki, 2018). The pilot test data was coded and analyzed for reliability by using Cronbach's alpha.

Study Site, Population and Sample

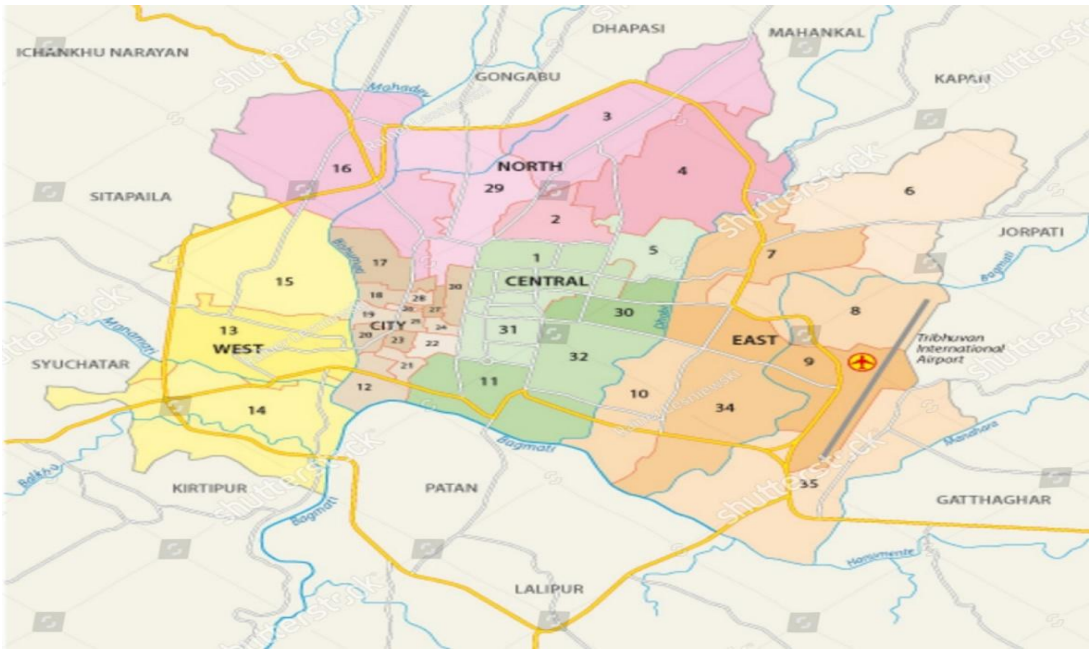
Kathmandu metropolitan city (KMC) was selected for the study because of its population diversity (students coming from different districts). Adolescents and youth survey (2012) showed that the prevalence of HRBs was higher in Kathmandu valley in comparison to other areas of the country. Since most migrants study in public schools because of low cost, this research included only the students studying in public schools.

The population was sampled from the resource centers in KMC. There are 22 resource centers in KMC and each resource center has a number of public schools

(DOE, 2013). All 18 public schools (census method) which had grade 11 and 12 were selected from 22 resource centers. From the data provided by the District Education Office, a total of 2,352 students are studying in grade 12 in selected 18 public schools and out of which 1,039 constituted males and 1,153 female students.

At the beginning of the survey, it was necessary to determine a representative sample size which entailed a process called sampling (Alvi, 2016). So, only the students studying in grade 12 in public school of KMC were selected as a sample unit. Sample population was thus homogenous in terms of age and socio economic background.

Figure 5. Map of Kathmandu Metropolitan City



Source: Shutterstock

The Yamane (1967) formula was used to calculate the representative sample size in this study.

$$n = \frac{N}{1 + N * (e)^2}$$

Where, n = Sample size

N= Population Size

e = level of significance which is 0.05 for this study

n = 2352/1+2352(0.05)2

=341.86

=342

In proportionate sampling, the number of sample population from each subgroup was determined by their number relative to the entire population. Therefore, the sample size was determined proportionately from each school considering the total population in each school. Information on student population and sample size is provided in Annex 2. Altogether 342 students were selected as per the sampling formula.

The school survey was conducted after obtaining the prior informed consent approval from each school. The survey was carried out on the mutually confirmed date and time. A class was selected randomly by lottery method. If one class was not sufficient in a school with a large number of students, then another class was selected randomly with the lottery method. The required number of students were selected randomly by lottery method with the help of teacher or student representative of class based on class attendance register. Altogether 342 students participated in survey out of 408 approached.

Data Collection Procedure

After selection of the class and students, the researcher explained the objectives of the research and provided the instruction to fill the questionnaires. The researcher also obtained verbal consent from the students prior to the distribution of questionnaires. Students were allowed to leave the survey at any point of time if they did not want to be involved and were informed that survey was anonymous. The students were given as much time as they needed complete the questionnaires but requested not to copy each

other. The students were also encouraged to ask questions on anything they did not understand or were not sure of.

Most questions related to HRBs were very sensitive and some respondents were likely to hide their behavior/s from others because of the common belief that engaging in such behaviors was not normal or socially accepted. So, during the survey teachers were requested to leave the class to make students comfortable in completing the questionnaires. Students seem to have felt more comfortable in the absence of teachers. For example, in some schools during the survey, students asked the researcher about the unclear questions, especially on RSB, only after the researcher requested teachers to leave the class. Following this experience, the researcher requested the teachers to leave the class while the students filled up the survey questions. The completed questionnaires were collected in a drop box or on teacher's front desk so that privacy and confidentiality of the students could be maintained. All questionnaires from the drop box or teacher's table were collected at the end and they were numbered for data entry. Response rate is 80% in survey.

Reliability and Validity

Reliability of the research data was measured by using Cronbach's alpha. SPSS 21 version was used to find Cronbach's alpha in this study. Cronbach's alpha measures the internal consistency or reliability. It was used to find whether instrument accurately measured the variables of interest or not. Cronbach's alpha ranges from 0 to 1 in providing an overall assessment of the measures of reliability. If all items are entirely independent from one another, then alpha is zero but if items are highly correlated then alpha approaches 1. Therefore, the higher the alpha value, the more likely it is that the items probably measure the same underlying concept (University of Virginia, 2018).

Table 3.1 shows a satisfactory level of Cronbach's alpha values in HRBs and its major determinants among 42 students in pilot test. Therefore, few minor revisions in language and terminology were done to make the questionnaire. Very similar to this research, a study conducted in 61 schools of USA also revealed that items related to tobacco use, alcohol use, drug use and sexual behavior showed significantly higher reliability as compared to the items related to dietary behaviors, physical activity and other health behaviors (Brener et al., 1995).

Table 3.1

Cronbach's Alpha Test (N=42)

Dimension	Cronbach's alpha	Number of items
Health Risk Behaviors	0.8	4
Family	0.9	36
School and Peers	0.9	22
Neighbors	0.7	5
Coping strategy	0.7	45

The questionnaire was revised after Cronbach Alpha test. Cronbach Alpha value 0.67 considered as the accepted level (Cohen, Manion, & Morrison, 2007). This study considered those items which had Cronbach Alpha value equal or more than o.67. The pilot tested questionnaires were not included in data entry of the main survey for the purpose of this research.

Validity of the research was considered as the degree to which the scales measure what it purports to measure (Alsnso, Geys, Molenbergh, & Vangeneugden, 2002). Certain threats to validity are generally in the research process which can never be eliminated. So, the researcher tried best to minimize the threats by gathering prior knowledge and careful instrumentation, data collection, analysis and interpretation

based on objectives of the study (Mohajan, 2017). To minimize the threat, four types of validity were considered: face validity, content validity, construct validity and criterion validity.

Researcher often applied superficial and subjective assessment of whether or not the study measures what it was supposed to measure. Face validity of this research was ascertained by an overall judgment of the instrument/tools by experts (Mohajan, 2017). The developed tools were sent to experts to comment on whether it was a good fit to the research questions. The researcher further checked to confirm that items in the tools were compatible with other previously developed international tools.

Face and content validity of the instruments were also ensured in this research by using the rigorous Delphi Method of instrument development. It was further supplemented by literature review and field interaction with students. Literature review was done systematically for major risk behavior such as cigarette smoking by using search engine like google scholars, PubMed, Psych INFO, Crochrane library, IMBASE. The variables and related items compatibility to local context was also ensured by field interaction with students. Students' interviews were recorded with their permission and the recordings were later analyzed to identify the variables and items. HRBs and determinants were quantified, compared and merged to experts' responses. The researcher was careful in ensuring consistency between questions and theoretical perspectives (Bajpai & Bajpai, 2014) which was done by correlating experts' and students' views and literature review. The problem statement, purpose of the study, research questions and hypothesis were all closely linked to each other. Both the Delphi method and reliability test helped to ensure the construct validity of the instrument.

Criterion validity was considered in the study by comparing and contrasting previous studies including previous theses and empirical studies. In this research, the

criterion validity was established when the measures of results were compared with similar other studies at local, national and international level. The major study for comparing and contrasting this research was Adolescents and Youth Survey (MoHP, 2012)

Analyzing and Interpreting Data

Survey data were conflated to dichotomous outcomes by merging always, very often and sometimes to “yes” and rarely, never to “no”. This was also done in one of the studies conducted in Peru among 970 students based on previous studies (Sharma, Nam, Kim, Yoon, Kim, & Kim, 2016). In this research, the question such as “During last month, have you missed meal because there was nothing to eat at home?” The answer options such as “never” or “rarely” were re-classified as “no”, and “sometimes”, “often” or “always” were re-classified as “yes” (Sharma et al., 2016). The main purpose of dichotomous merging of attributes was to enable logistic regression analysis in order to find the extent of association between HRBs and their determinants.

This research has used univariate, bivariate and multivariate analysis to answer research questions. Three major data analysis techniques were used. In the first step, univariate analyses method such as frequency and percentage distribution were used to describe the characteristics of sample population. In the second step, bivariate analysis (chi square test) was used to find the relationship between each of the HRB and its determinants. Finally, in third step multivariate analysis (logistic regression method) was used to examine extent of the effect of determinants at personal, family, community/societal level separately on each HRB.

Binary logistic regression method was used in analysis of determinants of dependent variables because all four dependent HRBs had been dichotomized as present or absent. Then, the binary logistic regression analysis was carried out to

examine the association between independent variables and the four dependent variables separately. The adjusted odd ratio of the associations and the 95 percent confidence intervals of each independent variable with the dependent variables were also obtained. The dependent variables that were not associated with independent variables at $p < 0.05$ were not included in binary logistic regression.

In the binary logistic regression, association of independent variables with each other was tested separately while controlling for the confounding effect of independent variables. The correlated independent variables as shown in multicollinearity test were not included in logistic regression. Logistic regression modelling assumed that the log of dependent variable is a linear function of independent variables. The multivariate regression models provide the odd ratio and 95 percent confidence interval for each of the independent variables.

The model used in this study is as follow

$$\text{Log}(P/1-P) = \alpha + \beta 1\ x1 + \beta 2\ x2 + \beta\ 3\ x3 + \ldots\ldots\ldots\ldots + \beta n\ xn$$

Where, P is probability of practicing health risk behavior,

α = intercept,

$\beta 1 \ldots \beta n$ is the regression coefficient

The regression coefficient represents the change in the log odds of the dependent variables associated with a unit change in each corresponding independent variable while controlling for the effect of the other independent variables.

Logistic regression was carried out in four major steps:

Independent variables that were not significant at $p<0.05$ were then discarded. The independent variables that were significant in simple binary regression, were included in logistic regression to examine its association with dependent variable. Then developed hypothesis were tested. Combined analysis of independent variable

was carried out and a new set of variables was added one by one to the first variables set to find the combined effect of the independent variable on each of the dependent variables separately. The logistic regression tested the association of the independent variables, while controlling the confounding effects of the other independent variables and variable sets. Finally, a full regression model was tested at personal, family and community/societal level that comprised all variables that were found significantly associated with dependent variable in simple logistic regression. The models were compared by adding variables in ecological system and variation in extent on each model was assessed.

Ethical Considerations

The prime reason for research ethics is to promote the knowledge, truth and avoidance of error. The major errors are fabrication, falsification and misrepresenting data. Moreover, it also helps to promote moral and social values such as social responsibilities, human rights, health safety and compliance with the law (Resnik, 2015). The core basic principles of ethics emphasize to do good or beneficence and do no harm. To meet the ethical requirements, at the very beginning, the researcher obtained prior informed consent from research participants, and undertook measures to protect their anonymity and confidentiality, and gave the participants the right to withdraw from research at any time if they no longer wanted to be involved (Lund Research, 2012). In this research, all major ethical issues, much to the knowledge of the researcher, were all considered.

Research professionalism was maintained throughout the study. This research was conducted by using specialized knowledge and skills gained during the academic period, self-regulation was applied throughout, and research conducted within the limits of societal expectation (Eigeum, 2012). Non-maleficence was one major issue

concerned while carrying out the research (Grand Canyon University, 2019). No harm or exploitation to the participants, regarding information and time, was meant at any time during the course of this research. Whilst interpreting and inferring the findings, appropriate precautions were taken to avoid any harm to the participants.

Beneficence was considered in the research from the very beginning. The research followed the basic principle to benefit the participants rather than simply making them as the subjects of the research. In this context, whenever possible, this researcher discussed with participants about life skills to cope with Health Risk Behavior immediately and attended to any queries or information participants wanted to know.

The objective of the research was stated and printed at the front of the questionnaire as a means to inform the participants. The participants were asked to read and understand it fully before proceeding to complete the questionnaires. Participants were informed they could opt out of the research if they did not want to be involved. The participants were assured that data and information provided by them would be used only for the research purpose. Further, participants were asked not to put their name, school's name or any other identification regarding their personal characteristics. Since most of the questions had multiple choices, the participants were asked to tick mark the answers and not to write anything on the questionnaire. Data security was also maintained by not allowing any other person to code or enter data. The researcher gave code ID to each participant and all data were entered into the computer by the researcher. No prejudiced claim was made against the response of participants and findings in this research.

Chapter Summary

This chapter provided the overall methodological path of the research. Delphi method was used to construct the tool and Cronbach alpha test was applied to test the reliability. The primary data was collected from 18 public schools of Kathmandu metropolitan city. The participating students were selected by simple random sampling method in randomly selected classes. Students were proportionately selected in each school and questionnaires were self-administered among students. Data were analyzed to describe status of HRB, its relation to determinants at personal, family and community level and extent of relationship between HRB and its determinants Both bivariate and multivariate analyses was performed to test the hypothesis. Three level of models were developed by logistic regression at personal, family and community level for each HRB. The extent of relationship was observed by adding determinants in each level in three different models. And finally, the researcher has presented adherence to the ethical research principles throughout the course of data collection and analysis.

CHAPTER IV

HEALTH RISK BEHAVIOR AMONG HIGHER SECONDARY SCHOOL STUDENTS

The aim of this study was to determine the factors associated with major HRB among HSS in KMC. First, univariate or descriptive analysis was performed to describe the frequency and percentage of sample respondents according to individual and family characteristics. Bivariate and multivariate analyses were carried out to observe the association between four major HRBs and their determinants. Bivariate analysis was carried out using chi-square test to examine the association between HRBs and determinants at personal, family, community or societal level. In addition, multivariate model was fitted to examine the effect or extent of determinants on each HRBs separately in proceeding chapter V. This chapter begins with descriptive statistics related to sample population and distribution of HRBs by major determinants.

Characteristics of Sample

The sample population of the study constitute a total of 342 adolescents and youth studying in 18 higher secondary public schools of Kathmandu Metropolitan City (KMC). These students were originally from 60 different districts of Nepal (Annex 2, Table 51).

Table 4.1 presents the students' gender, age, religion, ethnicity, marital status and education stream. There were slightly more male students1 (n=175, 51.2%) than females (n=167, 48.8%). Nearly 90% of the students were aged 19 or younger in selected HSS. Majority of the students were Hindu (78%) and Buddhist (19%). More than one third (42%) of respondents were *Brahmin/Chhetri.* Majority of students (91%)

were unmarried. More than half (57.6%) of the students were from management stream while remaining were from education, humanity and science faculties.

Table 4.1

Socio-demographic Characteristic of the Students

Characteristics	Number	Percent
Gender		
Male	175	51.2
Female	167	48.8
Age		
19 or below	303	88.6
Above 19	39	11.4
Religion		
Hindu	267	78.1
Buddhist	64	18.7
Christian/Muslim	11	3.2
Ethnicity		
Brahmins & Chhetri	144	42.1
Janajati	123	36.0
Newar	47	13.7
Dalit	20	5.8
Madhesi	8	2.3
Marital Status		
Unmarried	311	90.9
Married	28	8.2
Widow/Separated	3	0.9
Educational stream		
Education	76	22.2
Management	197	57.6
Humanities	62	18.1
Science	7	2.0

Frequency and percentage of parental education is presented in table 4.2. Parental education status was categorized into illiterate (person who cannot read and write in Nepali), only literate (person who can just read and write in Nepali either learning at home or through non formal education), primary level (completed grade 5 of the school education), secondary (completed grade 10 of the school education), SLC (high school passed), proficiency certificate level (+2 or intermediate level passed), bachelors level (graduate level passed).

Nearly one fifth (19.7%) of students' fathers were illiterate while more than one fourth of students' fathers (28.6%) were literate. Only 5% of students' fathers had completed intermediate or higher level of education. The table also revealed that only 3 out of 342 students' mothers had completed certificate or higher level of education.

Table 4.2

Frequency of Categories of Parental Education and their Occupation

Parental characteristics	Number	Percentage
Father's education		
Illiterate	62	19.7
Only literate	90	28.6
Primary	63	20.0
Secondary	35	11.1
SLC pass	49	15.6
Certificate level	8	2.5
Bachelors or above	8	2.5
Mother's education		
Illiterate	120	36.9
Only literate	112	34.5
Primary	38	11.7
Secondary	30	9.2
SLC pass	22	6.8
Certificate level	1	.3
Bachelors or above	2	.6
Father's Occupation		
Government job	29	9.2
Private office/company job	45	14.2
Migrant labor	28	8.9
Business	60	19.0
Agriculture	143	45.3
Wage	11	3.5
Mother's occupation		
Government job	12	3.7
Private office/company job	20	6.2
Business	42	12.9
Agriculture	204	62.8
Wage	47	14.5

As depicted in the table, father's occupation has been categorized into government job, private job, migrant labor, business, agriculture and wage based job.

Agriculture was the major occupation of students' parents - nearly half of the students' fathers (45.3%) and nearly two third of students' mothers (62.8%) were engaged in agriculture. Besides agriculture, the main occupation for students' fathers was business (19%) and for mothers, it was a wage based job (14.5%).

Health Risk Behavior (HRB) among Students

The table 4.3 showed the frequency or occurrence of HRB in five different categories. Accordingly, among those adolescents that are involved in HRBs, the category "always" is less frequent whereas "sometimes" is the most frequent.

Table 4.3

Frequency of Health Risk Behaviors based on level of involvement

Frequency		Cigarette Smoking	Alcohol use	Drug use	RSB
Never	Number	254	130	256	235
	Percentage	74.3	38.0	74.9	68.7
Rarely	Number	23	136	73	35
	Percentage	67.0	39.8	21.3	10.2
Sometimes	Number	33	59	9	64
	Percentage	9.6	17.3	2.6	18.7
Very Often	Number	26	15	4	7
	Percentage	7.6	4.4	1.2	2.0
Always	Number	6	2	0	1
	Percentage	1.8	0.6	0	0.3

The majority of cigarette smokers (78.5%) were male, while slight majority of non-smokers (55.2%) were female (Table 4.4). Study also showed an average cigarettes smoking days of the students i.e. 14 days per month. Most students started smoking cigarettes at the age of 15. Cigarettes smoking students spent NRs 594 in average for smoking per month.

Table 4.4
Frequency Percentage of Health Risk Behaviors

Gender	Involvement in HRB			
	Yes		No	
Smoking	Number	Percentage	Number	Percentage
Male	51	78.5	124	44.8
Female	14	21.5	153	55.2
Total	65	100	177	100
Alcohol use				
Male	50	65.8	125	47.0
Female	26	34.2	141	53.0
Total	76	100	166	100
Drug use				
Male	13	100.0	162	49.2
Female	0	0	167	50.8
Total	13	100	329	100
RSB				
Male	60	82.2	115	42.8
Female	13	17.8	154	57.2
Total	73	100	269	100

More than half of the smokers (56%) started smoking cigarettes because of inquisitiveness. Similarly, 24% modelled smoking behaviors of peers and others. Only 8% students smoked due to peer pressure. One in ten students smoked cigarettes because they were sad. About 37% students smoked at restaurant and shop whereas one third (35%) smoked on road. Only 15% of students smoked at home whereas 21% smoked at a friend's home. More than one fourth (29%) students smoked at an identified junction or youth gathering area.

The majority of alcohol users were male (65.8%) and while slight majority of female (53%) were female. Study also showed majority of the students drank beer (76%) and wine (31%). Altogether 19% students preferred hard drinks and equal

percentage (17%) took local alcohol "*Jand & Rakshi"*. About 32% male students and 21% female students drank a bottle of beer at one sitting. Similarly, 22% male students and 18% female students usually drank one nib of hard drinks in one sitting. The average age for drinking initiation among students was 16 years. Less than half (44%) of students drank due to inquisitiveness and 30% drank to celebrate happiness. Only 10% drank due to peer pressure. About 3% of students drank because they were sad. About half of students (47.4%) drank alcohol at parties and about 27% drank at the restaurant and shops whereas about one quarter of students (24%) drank at home.

All drug users were male students. The majority of drug using students (70%) used *Ganja/Bhang.* On average students started to use drugs at age 16 years. Majority (42%) of students used drug due to inquisitiveness. Only 12% took drug due to peer pressure. 16% of students modelled the behavior of peers and others. More than one third of students (36%) students used drug at friend's house and more than one fourth (28%) students used drug at identified junction.

In this study, RSB was sexual intercourse without protection among adolescents and youth. The main variables to measure RSB were condom use, having multiple sex partners, age at first sexual intercourse, homosexual anal sex, low level of commitment in relationship, sex with commercial sex workers, use of drug and alcohol before sexual intercourse (Turchik, 2007). Altogether 21.3% students had experience of sexual intercourse which was considered as risky in this study. Out of those who had sexual relationship, majority of them were male students (82%) and only few female students (17.8 %%) were also involved in RSB.

Some of the variables such as kissing and masturbation have not been defined as RSBs under this study. However, these variables have been noted as they help to provide a complete picture of an individual's sexual behavior (Fortenberry, 2013). For

example, kissing and masturbation stimulate sexual urge in some individuals who then engage further in RSBs. About 34% of boys reported that they had kissed girl friend or partner. About 3% students mentioned that they had masturbation experience. More than three quarters (78%) of students had sexual intercourse with partners (girlfriend/boyfriend and husband/wife). It is interesting to note that about 12 % of students mentioned that they had sexual intercourse with acquaintance. One in twenty (4.8%) students said that they went to commercial sex workers (CSW). Average age for initiation of sexual intercourse among the students was 16 years.

There was remarkable number of students who started sexual intercourse at 14 years (5.3%), whereas others started sexual intercourse at age of 15 (12%), 16 (20%), 17 (26%), 18 (27%), 19 (6.4%), and 20 (4.3%). Most of the students had sexual intercourse in own house/flat (29%), at partner's room (24%), hotel/lodge (22%) and in the forest (13%). Half of the students felt satisfied after first sexual intercourse. More than one fourth (28%) of the students were terrified after first sexual intercourse and one in twenty (4.8%) of the students, mostly female students cried immediately after first sexual intercourse. More than one fourth (26%) of the students used emergency contraceptives after first sexual intercourse to prevent unwanted pregnancy. About 7.6 % of students sought abortion for preventing unwanted pregnancy. Fifty-six percent of students were not involved in any of four HRBs but 44 % of students were involved in at least one HRB. About 2 % of students involved in all four major HRBs (Table 4.5).

Table 4.5
Frequency and Percentage of Health Risk Behavior of Students Involvement in Multiple Risk Behavior

HRB compositive Index	Involvement in HRBs	Number	Percentage
In four different categories	None	192	56.1
	One	99	28.9
	Two	31	9.1
	Three	14	4.1
	Four	6	1.8
In at least one category	None	192	56.1
	Involved in at least one among four	150	43.9
In all four categories	None	336	98.2
	Involved in all four	6	1.8
	Total	342	100

Socio-demographic Characteristics and HRBs

Four socio-demographic variables namely gender, age, religion, accompaniment and ethnicity were tested for associations against four major HRBs namely smoking, alcohol use, drug use and RSB. They are presented with cross tab and chi square at 95% significance.

Table 4.6 shows that gender is significantly associated with all the major HRBs (Table 1-4, annex 1). It shows 51 (29.1%) male students smoked compared to 14 (8.4%) female students. Chi square test was significant [χ^2 (1, N=342) = 23.924, p<0.001] to gender which indicates there was relation between gender and smoking behavior of the students. Similarly, gender was also significantly associated with alcohol use, drug use and RSB of the students. A significant association was found [χ^2 (1, N=342) = 35.474, p <0.001] between gender and RSB of the students.

In terms of age, the majority of students were adolescents compared to youth in this study. Altogether, 303 (88.6%) respondents were adolescents and 39 (11.4%)

respondents were youth while 18.5% of adolescents were smoker. There was no significant relationship between age and cigarette smoking but age of the student was associated with RSB. Test result shows that there is also a significant difference in among age group [χ^2 (1, N=342) = 7.682, p <0.001]. Likewise, majority of the students were Hindus but religion was not associated with HRBs of the student.

Ethnicity is significantly associated only with smoking behavior whereas it is not associated with alcohol use, drug use and RSB of the students. The Chi square test was significant with p value less than 0.05 [χ^2 (4, N=342) = 11.979, p<0.01] which indicates there is an association between ethnicity and cigarette smoking habit of the students. Among total *Janajati* students, more than one fourth (27.6%) was smoker. One quarter of *Dalit* students was smoker.

More than one third (37%) of the students were living with family, one third (33%) students were living alone, and about 30% were living with others than parents and siblings. Accompaniment of the students was associated with all four major HRBs of students. Cigarette smoking was higher in students not living with their parents [χ^2 (2, N=342) = 26.294, p<0.001]. The chi square test was significant with p value less than 0.001 [χ^2 (1, N=342) = 32.063, p<0.001] therefore alcohol is used more by students not living with parents. Moreover, RSB was also associated with accompaniment of the student. Similarly, students' accompaniment and RSB was also associated significantly [χ^2 (1, N=342) = 32.678, p <0.001]. (See Table 1-4, Annex 1).

Table 4.6
Relation of Demographic Characteristics with HRBs

Demography	Cigarette(N=65)	Alcohol(N=76)	Drug(N=13)	RSB(N=73)
Gender	***	**	***	***
Male	51(29.1%)	50(28.6%)	13(7.4%)	60(37.4%)
Female	14(8.4)	26(15.6%)	0(0%)	13(7.8%)
Age				**
Adolescents	56(18.5%)	69(22.8%)	13(4.3%)	58(19.1%)
Youth	9(23.1%)	7(7.9%)	0(0%)	15(8.3%)
Religion				
Hindu	45(16.9%)	54(20.2%)	10(3.7%)	55(3.7%)
Non-Hindu	20(26.67%)	22(29.33%)	3(4%)	18(13.8%)
Ethnicity	**			
Brahmin/Chhetri	17(11.8%)	23(16%)	3(2.1%)	33(22.9%)
Janajati	34(27.6%)	34(27.6%)	6(4.9%)	28(22.8 %)
Newar	7(14.89%)	12(25.5%)	4(8.5%)	5(10.6%)
Dalit/Madhesi	7(25%)	7(25%)	0(0%)	7(25%)
Accompaniment	***	***	**	***
With parents	6(4.76%)	7(5.6%)	0(0%)	6(8.2%)
Alone/with others	59(27.31%)	69(31.9%)	13(6.02%)	67(91.8%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Family Characteristics and HRBs

Family Characteristics includes parental characteristics, parent-children interactions, family members' involvement in HRB and family violence.

Parental Characteristics and HRB

Table 4.7 shows that father's education was significantly associated with cigarette smoking [χ^2 (4, N=325) = 9.495, p = 0.05]. Father education was not significantly associated with alcohol use and drug use. The result revealed that there was significant association between father's education and RSB of the students [χ^2 (4, N=315) = 9.993, p <0.05]. Similarly, father's occupation and cigarette smoking were

associated [χ^2 (4, N=325) = 20.337, p<0.001]. A chi-square test result showed that there was no significant association between father's occupation and alcohol use, drug use and RSB. Furthermore, mother's education and occupation were not associated significantly with all four major HRBs. (See Tables 5-8, Annex 1)

Table 4.7

Relation of Parental characteristics with HRBs

Parental characteristics	Cigarette(N=65)	Alcohol(N=76)	Drug(N=13)	RSB(N=73)
Father's Education				*
Illiterate	14(22.6%)	18(29%)	0(0%)	22(35.5%)
Literate	10(11.1%)	19(21.1%)	4(4.4%)	18(20%)
Primary	19(30.2%)	11(17.5%)	3(4.76%)	10(15.9%)
Secondary	6(17.1%)	11(31.4%)	3(8.57%)	8(22.9%)
SLC/above	11(16.9%)	12(18.5%)	3(4.61%)	10(15.4%)
Mother's Education				
Illiterate	29(24.2%)	31(25.8%)	3(2.5%)	35(29.2%)
Literate	16(14.3%)	21(18.8%)	6(5.35%)	18(16.1%)
Primary	9(23.7%)	9(23.7%)	2(5.26%)	8(21.1%)
Secondary	4(13.3%)	5(16.7%)	2(6.06%)	6(20%)
SLC/above	5(20%)	7(31.8%)	0(0%)	5(20%)
Father's occupation	***			
Government job	2(6.9%)	4(13.8%)	2(6.90%)	5(17.2%)
Private job	10(22.2%)	15(33.3%)	2(4.44%)	10(22.2%)
Migrant worker	4(14.3%)	6(21.4%)	2(7.14%)	6(21.4%)
Business	15(25%)	14(23.3%)	4(6.67%)	10(16.7%)
Agriculture	22(15.4%)	30(21%)	3(2.30%)	34(23.8%)
Wage	7(63.6%)	2(18.2%)	0(0%)	3(27.3%)
Mother's occupation				
Job/Service	5(15.15%)	8(24.2%)	1(3.03%)	3(9.09%)
Business	8(19.51%)	11(26.83%)	4(9.76%)	7(17.07%)
Agriculture	36(17.65%)	41(20.10%)	5(2.45%)	54(26.47%)
Wage	14(29.79%)	13(27.66%)	2(4.25%)	8(17.02%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Parent-children Interaction and HRBs

As shown in table 4.8, three variables parents-children relationship, parents-children communication and parental monitoring were tested separately. Parent-

adolescent relationships are based on parental attachment, involvement, monitoring and communication (Ramirez, 2016). As shown in table, there is a significant association between parents-children relationship and smoking behavior [χ^2 (3, N=341) = 48.746, p<0.001]. Parent-child relationship has significantly association with alcohol use [χ^2 (4, N=341) =10.152, p< 0.05]. Almost double the non-users had very good relation with parents compared to users indicating that students who had good relationship with parents are less likely to drink alcohol. But, parent-children and drug use had no significant association. The association between parents-children relationship was significant with RSB [χ^2 (1, N=341) = 19.104, p < 0.001].

Similarly, there was significant relationship between parents-children communication and all four major HRBs. Smoking behavior is significant [χ^2 (3, N=341) =116.963, p<0.001] with parents-children communication. Moreover, there is an association between parents monitoring and smoking behavior at [χ^2 (3, N=341) = 94.174, p<0.001]. The pattern is also similar for alcohol use. There is significant relationship between parent-child communication and alcohol use among students [χ^2 (4, N=341) =48.524, p< 0.001]. As can be seen in Table 4.8, there is significant relationship between parental interaction and drug use by the students. [χ^2 (1, N=342) = 18.053, p< 0.001]. Parent-children communication was significantly associated with RSB [χ^2 (1, N=342) = 13.716, p <0.01]. Similarly, Parental monitoring was significantly associated with RSB [χ^2 (1, N=342) = 13.464, p <0.01].

Parental monitoring is a set of parenting behavior where parents usually try to get information about their children's activities, whereabouts and about their engagement with type of friends (Ying, Ma, Guo, Chan, & Xu, 2015). Children attachment to parents keep them away to participating in the activities that disappoint their parents. Parental monitoring was significantly associated with all four major

HRBs. Parental monitoring shows significant association with alcohol use [χ^2 (4, N=341) = 74.061, p< 0.001]. Similarly, parental monitoring had significant association with drug use by the students [χ^2 (1, N=342) = 12.086 p <0.005]. (See Table 9-12, Annex 1)

Table 4.8

Relationship of Parental Interaction with HRBs

Parents-Children Interaction	Cigarette (N=65)	Alcohol (N=76)	Drug (N=13)	RSB (N=73)
Relationship	***	*		***
Very bad	11(42.3%)	10(38.5%)	NA	6(23.1%)
Bad	12(75%)	6(37.5%)	3(7.1%%)	10(62.5%)
Just Okay	5(19.2%)	3(11.5%)	NA	4(15.4%)
Good	10(20.4%)	14(28.6%)	10(3.5%)	13(26.5%)
Very good	27(12.1%)	43(19.2%)	NA	40(17.9%)
Communication	***	***	***	**
Very less	24(68.6%)	16(45.7%)	NA	12(34.3%)
Less	22(56.4%)	22(56.4%)	9(12.2%)	14(35.9%)
Just okay	5(10.9%)	9(19.6%)	NA	12(26.1%)
Much	8(8.2%)	13(13.4%)	4(1.5%)	13(13.4%)
Very much	6(8.2%)	16(12.8%)	NA	22(17.6%)
Monitoring	***	***	***	**
Very less	11(47.8%)	7(30.4%)	NA	9(39.1%)
Less	32(60.4%)	35(66%)	8(10.5%)	18(34%)
Just okay	6(15.8%)	7(18.4%)	NA	8(21.1%)
Much	9(11.8%)	8(10.5%)	5(1.9%)	16(21.1%)
Very much	7(4.6%)	19(12.6%)	NA	22(14.6%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Family Types and Income Level and HRBs

No significant association was found in-between family types, family size, family income source, family income level and major health risk behavior among students. This study has considered two basic family types, i.e., single and joint, with

single referring to a nuclear family and joint as the family that includes parents, grandparents, uncles, and others. As shown in table 4.9, there was no significant relation found in family type, size and income with the four HRBs. There was a significant association between family income source and drug use by the students [χ^2 (1, N=341) = 13.378, p <.001]. (See Table 13-16, Annex 1).

Table 4.9

Relationship of Family Characteristics with HRBs(N=342)

Family characteristics	Cigarette	Alcohol	Drug	RSB
Types of family(n=341)				
Single	36(17.6%)	48(23.5%)	7(3.4%)	45(22.1%)
Joint	29(21.2%)	27(19.7%)	6(4.4%)	27(19.7%)
Family size				
2-5	25(16.0%)	40(25.6)	7(4.5%)	31(19.9%)
6-9	28(19.4%)	25(17.4%)	4(2.8%)	29(20.1%)
10-15	7(26.9%)	5(19.2%)	2(7.7%)	6(23.1%)
Family Income Source			**	
Agriculture	33(17.2%)	39(20.3%)	4(2.08%)	49(25.5%)
Business	24(26.7%)	24(26.7%)	9(10%)	16(17.8%)
Job/Service/wage	8(13.3%)	13(21.7%)	0(0%)	8(13.33%)
Income per month (NRs)				
Below 10000	12(13.3%)	15(16.7%)	2(2.2%)	21(23.3%)
10001 to 20000	20(17.1%)	31(26.5%)	3(2.6%)	24(20.5%)
20001 to 30000	17(25%)	14(20.6%)	2(2.9%)	17(25%)
300001 to 40000	9(28.1%)	6(18.8%)	2(6.3%)	4(12.5%)
400001 to 50000	5(26.3%)	5(26.3%)	3(15.8%)	5(26.3%)
Above 50000	2(12.5%)	5(31.3%)	1(6.3%)	2(12.5%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Family Members' Involvement in HRB and HRBs of Students

This study has taken data from only the students who have parents and siblings. In case of students who have siblings and among them even if only one has been involved in HRBs, they are considered as having siblings with HRBs. Generally, the

HRB of family members especially parents and siblings were associated with four major risk behaviors for adolescents and youth with few exceptions. Involvement of family members in smoking behavior apparently influences students' smoking. Test was carried out to those students who had parents and siblings. As shown in table 4.10, there was significant relationship between father's alcohol consumption and students' alcohol use [χ^2 (1, N=317) = 5.768, p< 0.05] but father's smoking behavior, drug use and RSB is not significantly associated with students' HRBs. Similarly, mother's alcohol consumption, drug use and RSB were associated with student's HRB. Table 4.10 shows that mother's involvement in HRBs was also significantly associated with alcohol use by the students [χ^2 (1, N=325) = 18.179, p< 0.001] and drug use by the students [χ^2 (1, N=325) = 6.574, p <0.05]. Involvement of mother in HRB was associated with students' involvement in RSB [χ^2 (1, N=317) = 4.133, p <0.05].

On the other hand, there was no significant association between siblings' HRBs and students' alcohol use. There is a significant relationship between brother's involvement in HRBs and student's smoking behavior, χ^2 (1, N=313) =6.384, p<0.05

Table 4.10
Relation between Respondent's HRBs and Family Members' HRB Status

Risk behavior of family members	Cigarette	Alcohol	Drug	RSB
Father's HRB		***		
Yes	16(20%)	19(35.2%)	7(4.8%)	39(26.5%)
No	45(19%)	53(20.2%)	592.9%)	30(17.6%)
Mother's HRB		***	*	*
Yes	9(19.1%)	13(59.1%)	6(9%)	21(31.3%)
No	54(19.4%)	60(19.8%)	6(2.3%)	51(19.8%)
Brother's HRB	*			*
Yes	9(39.1%)	4(28.6%)	2(5.7%)	13(37.1%)
No	49(17.6%)	64(21.4%)	10(3.6%)	58(20.9%)
Sister's HRB				
Yes	0(0%)	1(100%)	0(0%)	1(25%)
No	50(18.6%)	58(21.5%)	10(3.7%)	56(21%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Brother's involvement in HRB such as smoking, alcohol and drug use was associated with RSB of the students [χ^2 (1, N=313) = 4.698, p <0.05]. (See tables 17-20, Annex 1)

Family Violence and HRBs

Table 4.11 shows that family violence was significantly associated with all four major HRBs. Family violence refers the family quarrel within family members including parental disputes. Students whose family had family violence were more likely to smoke cigarette [χ^2 (1, N=342) =18.545, p<0.001]. A significant association was found between family violence and alcohol use [χ^2 (1, N=342) = 16.208, p< 0.001]. There was significant association between drug use and family violence [χ^2 (1, N=342) = 7.769, p <0.01]. As can be seen by the frequency's cross tabulation in Table 4.9, there is significant relationship between family violence and RSB [χ^2 (1, N=342) = 4.308, p

<0.05]. However, in contrast to this, physical violence in between parents was not associated with students' cigarette smoking. There was no significant association between" father beats mother" and "mother beats father" and students' alcohol use behavior.

Table 4.11

Relation between Family Violence and HRBs

	Cigarette	Alcohol	Drug	RSB
Family violence	***	***	**	*
Yes	46(28.8%)	51(31.9%)	11(6.9%)	42(26.3%)
No	19(10.4%)	25(13.7%)	2(1.1%)	31(17%)
Father beats mother				
Yes	9(17.6%)	15(29.4%)	3(5.9%)	15(29.4%)
No	56(19.2%)	6(21%)	10(3.4%)	58(19.9%)
Mother beats father				*
Yes	10(29.4%)	10(29.4%)	3(8.8%)	12(35.3%)
No	55(17.9%)	66(21.4%)	10(3.2%)	61(19.8%)

*Note***.** Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Unlike family violence, the physical violence between father and mother was associated with RSB among students. The students whose mother beats father were more likely to be involved in RSB [χ^2 (1, N=342) = 4.375, p <0.05] but student's whose father beats mother was not associated with four major HRBs. (See Tables 21-24, Annex 1)

School Characteristics and HRBs

Teachers' Influence and HRBs

School level determinants have no significant association with Smoking behavior (Table 4.12) Teacher monitoring, time provided by teacher and teacher compulsion to follow school rules are not associated with cigarette smoking, alcohol use, drug use and RSB. (See Tables 25-28, Annex 1)

Table 4.12

Relation of Teacher-Student's Relationship with HRBs

Interaction with teachers	Cigarette (N=65)	Alcohol (N=76)	Drug (N=13)	RSB (N=73)
Teacher monitoring				
Yes	58(19%)	67(22%)	12(3.9%)	65(21.3%)
No	7(18.9%)	9(24.3%)	1(2.7%)	8(21.6%)
Time provided by teacher				
Much	57(19.1%)	66(22.1%)	12(4%)	64(21.%)
Less	8(18.2%)	10(22.7%)	1(2.3%)	9(20%)
Compel to follow rule				
Yes	58(19%)	65(21.2%)	10(3.3%)	66(21.6%)
No	7(19.4%)	11(30.6%)	3(8.3%)	7(19.4%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

School Strictness, Rule and Punishment

Similarly, school related variables such as rule and regulation of school, school punishment and students' connected to school were not associated with all major HRB included in this study (Table 4.13). The P value of all three school related variables was more than 0.05 or no significant association was observed. (See Tables 29-32, Annex 1)

Table 4.13

Relation between School Characteristics and HRBs

School Rule and regulation	Cigarette	Alcohol	Drug	RSB
School Strictness				
Yes	55(18.3%)	65(21.7%)	11(3.7%)	65(21.7%)
No	10(23.8%)	11(26.2%)	2(4.8%)	8(19%)
School punishment on HRB				
Yes	45(18.5%	65(21.2%)	9(3.7%)	48(19.8%)
No	20(20.2%)	11(30.6%)	4(4%)	25(25.3%)
Student like school				
Yes	61(18.6%)	73(23.3%)	12(3.7%)	72(22%)
No	4(28.6%)	3(21.4%)	1(7.1%)	1(7.1%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

School-parent Communication

A chi-square test of independence was calculated by comparing the frequency of parents-school interaction on HRB in different aspects and HRBs of the students. As shown in table 4.14, a significant association was found between Parents'-school interaction on HRB involvement on HRB and cigarette smoking [χ^2 (1, N=342) =4.564, p<0.05]. But, parents-school interaction on HRB was not significantly associated with alcohol use, drug use and RSB.

Table 4.14

Relation between Parent-School Communication and HRBs

Parents-school interaction on	Cigarette	Alcohol	Drug	RSB
HRB involvement	*			
Yes	35(15.7%)	47(21.1%)	6(2.7%)	41(18.4%)
No	30(25.2%)	29(24.4%)	7(5.9%)	32(26.9%)
Bunking class				*
Yes	30(14.4%)	43(20.6%)	6(2.9%)	37(17.7%)
No	35(26.3%)	33(24.8%)	7(5.3%)	36(27.1%)
Academic achievement				**
Yes	41(16.5%)	53(21.4%)	8(3.2%)	44(17.7%)
No	24(25.5%)	23(24.5%)	5(5.3%)	29(30.9%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

There was no significant relationship between parent-teacher interaction on HRB, bunking class (students escape classes) and cigarette smoking, alcohol use and drug use. However, there was a significant relationship between parents-school interaction on bunking class and RSB [χ^2 (1, N=342) = 4.245, p <0.05]. Similarly, parents-school interaction on academic achievement was significantly associated with RSB [χ^2 (1, N=313) = 6.977, p <0.005]. (See Tables 33-36, Annex 1)

Peer Influence and HRBs

As shown in table 4.15, there were no relationships between group involvement and peer behavior in any HRB. However, there was a significant association between peer influence (best friend's involvement in HRBs) and cigarette smoking by the students [χ^2 (1, N=342) = 29.136, p<0.001]. Peer influence had significant relationship to the alcohol use by the students [χ^2 (1, N=342) = 7.342, p< 0.05]. Chi square test shows that there was significant association between peer influence and RSB among students [χ^2 (1, N=342) = 22.027, p <0.001].

Similarly, peer pressure was also significantly associated with cigarette smoking by the students [χ^2 (1, N=342) = 37.731, p<0.001]. Peer pressure was significantly associated with alcohol use by the students [χ^2 (1, N=342) = 32.785, p <0.001] but peer pressure was not associated with drug use among students. Peer pressure for dating [χ^2 (1, N=342) = 8.611, p <0.01] and peer pressure for sexual intercourse [χ^2 (1, N=342) = 32.268, p <0.001] were significantly associated with RSBs.

Table 4.15

Relation of Peer Involvement and HRBs

Peer pressure	Cigarette	Alcohol	Drug	RSB
Group involvement				
Yes	58(19.5%)	66(22.2%)	10(3.4%)	64(21.5%)
No	7(15.6%)	10(22.2%)	3(6.7%)	9(20%)
Peer behave				
Good	62(18.9%)	73(22.3%)	13(4%)	72(22%)
Bad	3(21.4%)	3(21.4%)	0(0%)	1(7.1%)
Peer influence	***	**	***	***
Yes	28(42.4%)	10(45.5%)	7(15.2%)	29(42%)
No	37(13.4%)	66(20.6%)	6(2%)	44(16.1%)
Peer pressure	***	***		***
Yes	31(44.9%)	33(47.8%)	5(6.8%)	42(40.4%)

No	34(12.5%)	43(15.8%)	8(3%)	31(13%)
Best friends' with CSW				***
Yes	NA	NA	NA	25(53.2%)
No				244(82.7%)
Peer pressure for dating	NA	NA	NA	**
Yes				93(70.5%)
No				176(83.8%)
Masturbation				***
Yes	NA	NA	NA	44(49.44%)
No				29(11.46%)
Visit adult site				***
Yes	NA	NA	NA	47(31.76%)
No				26(13.40%)
Best friend visit adult site	NA	NA	NA	***
Yes				56(31.64%)
No				17(10.30%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Moreover, best friends' involvement with commercial sex workers was also associated with RSB among students (1, N=342) = 21.043, p <0.001]. Masturbation and RSBs is also associated significantly [χ^2 (1, N=342) = 56.555, p <0.001]. Student visits adult site [χ^2 (1, N=342) = 16.846, p <0.001] was significantly associated with RSBs of the student and best friend visits adult site [χ^2 (1, N=342) = 23.153, p <0.01] significantly associated with RSB of the students. (See Tables 37-40, Annex 1).

Neighbor's Influence and HRBs

Table 4.16 shows that best friend in neighborhood was significantly associated only with alcohol use by the students [χ^2 (1, N=341) = 4.228, p<0.05]. However, best friend in neighbor was not associated with cigarette smoking, drug use and RSB. Neighbor health (help provided by neighbor for student's family) was not associated with any of the HRBs. There was significant relationship between neighbor monitoring

and alcohol use by the students [χ^2 (1, N=342) = 4.185, p <0.05] but neighbor monitoring was not associated with cigarette smoking, drug use and RSB. Neighbor informs parents on HRB was not significantly associated with any of the HRB. There was significant association between neighbor's pressure to involvement in cigarette smoking of students including smoking [χ^2 (1, N=342) = 14.004, p<0.001].

There was also significant relationship between neighbor pressure and alcohol use by the students [χ^2 (1, N=342) = 6.096, p <0.05]. Neighbor pressure was significantly associated with RSB [χ^2 (1, N=342) = 11.259, p <0.001]. (See Tables 41-44, Annex 1).

Table 4.16

Relation between Neighbor Behavior and HRBs

Neighbor pressure	Cigarette	Alcohol	Drug	RSB
Best friend in neighbor		*		
Yes	59(19.6%)	62(20.6%)	10(3.3%)	65(21.6%)
No	6(15%)	14(35%)	3(7.5%)	8(20%)
Help from neighbor				
Yes	63(19.9%)	67(21.1%)	11(3.5%)	67(21.1%)
No	2(8.3%)	9(37.5%)	2(8.3%)	6(25%)
Neighbor monitoring		*		
Yes	58(20.2%)	58(20.2%)	11(3.8%)	65(22.6%)
No	7(12.7%)	18(32.7%)	2(3.6%)	8(14.5%)
Neighbor informs parents on HRB				
Yes	48(17.8%)	64(23.7%)	9(3.3%)	59(21.9%)
No	17(23.6%)	12(16.7%)	4(5.6%)	14(19.4%)
Neighbor pressure for HRB	***	**		***
Yes	25(34.2%)	24(32.9%)	5(6.8%)	26(35.6%)
No	40(14.9%)	52(19.3%)	8(3%)	47(17.5%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Media Influence

As can be seen in Table 4.17, newspaper reading was significantly associated with cigarette smoking [χ^2 (1, N=342) = 4.33, p <0.05] but newspaper reading was not associated with alcohol use, drug use and RSB.

However, listening radio was associated with alcohol use and RSB among the students. The result revealed that there was a significant relation between listening radio and alcohol use by the students [χ^2 (1, N=342) = 7.218, p <0.05]. Similarly, the chi-square test result also shows that listening radio by the student was significantly associated with drug use by the students [χ^2 (1, N=342) = 4.184, p <0.05]. But there was no significant association between listening radio and RSB of the students.

Table 4.17

Relation between Media and Communication Channel and HRBs

Media type	Cigarette	Alcohol	Drug	RSB
Newspaper	*			
Yes	49(17.1%)	64(22.3%)	8(2.8%)	58(20.2%)
No	16(29.1%)	12(21.8%)	5(9.1%)	15(27.3%)
Radio		**	*	
Yes	46(17.4%)	50(18.9%)	7(2.7%)	57(21.6%)
No	19(24.4%)	26(33.3%)	6(7.7%)	16(20.5%)
Television				
Yes	56(18.5%)	67(22.1%)	10(3.3%)	62(20.4%)
No	9(23.1%)	9(23.1%)	3(7.7%)	11(28.2%)
Mobile possession				
Yes	61(18.9%)	71(22%)	12(3.7%)	
No	4(22.2%)	5(27.8%)	1(5.6%)	
Use of social media				
Yes	62(20.1%)	71(23%)	12(3.9%)	68(22%)
No	2(8.7%)	5(21.7%)	1(4.3%)	3(13%)
Use of Facebook				
Yes	60(19.9%)	71(23.5)	12(4%)	64(21.2%)
No	4(13.3%)	5(16.7%)	29(96.7%)	7(23.3%)

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Watching television, possession of mobile phone, use of social media and use of facebook were not significantly associated with any of the HRBs. The study result

shows a total of 57.6% of the students used the internet. Students used internet for different purposes such as for playing game, for using social media, for getting course materials, for chatting with friends, for using email, for entertaining/YouTube. Altogether 36.6% students mentioned they were using internet for entertainment. The test result (Annex 1, table 49 B) shows there was significant association between use of internet for entertainment and RSB [χ^2 (1, N=333) = 8.612, p <0.01]. There was significant association between best friend watching adult movie and respondent watching adult movie [χ^2 (1, N=342) = 94.057, p <0.001]. Similarly, chi-square test also revealed that students watching adult movie was related to RSB [χ^2 (1, N=342) = 16.846, p <0.001]. The test result also showed that students were more likely to get aroused after watching adult movie [χ^2 (1, N=342) = 51.351, p <0.001]. (See Tables 45-49, Annex 1).

Chapter Summary

This chapter includes the statistical analysis of the relationship between determinants of HRBs and major HRBs which were tested by chi square test. The chi square test indicates that several determinants at personal, family, community and societal level are associated with the major HRB such as cigarette smoking, alcohol use, drug use and RS. The test result shows that gender and accompaniment of the students are major determinants at personal level. Parent-children interaction, parents and sibling's involvement in HRB, family violence are major determinants at family level. At community level peer influence and pressure become crucial compared to school and neighbor's influence. Media influence is not remarkable. This indicates major determinates at personal/demographic variables, family level variables, community and societal level variables have relationship with HRBs. The extent of these relationships is tested and presented in the proceeding chapter.

CHAPTER V

DETERMINANTS OF HEALTH RISK BEHAVIORS

This chapter presents the strength of association between HRBs and determinants at the personal, family and community level as measured using binary logistic regression. Only those determinants that had significant association with cigarette smoking, alcohol use, drug use and RSB in chi square test were reassessed in logistic models and only those determinants which were significant in logistic regression are shown in the tables below. Regression models were developed first in each dimension separately, and then a combined analysis conducted to develop the final model, including determinants at three levels.

Statistical Analysis Procedure

Both the dependent variables (HRBs) and independent variables (eg. personal characteristics, the immediate environment of family- and community-level determinants) are either nominal or ordinal in nature. The binary logistic regression model fulfilled the following criteria:

1. The dependent variables such as cigarette smoking, alcohol use, drug use and RSB were nominal and dichotomous in nature. The involvement in HRB was either “yes” or “no”
2. The dichotomous groups were mutually exclusive as respondent either fall in “yes” group or “no” group
3. As each group of independent variables required at least 50 cases for maximum likelihood coefficient, the attributes with less than 50 cases were merged appropriately.

4. The outliers were removed, and independent variables were not highly correlated. For instance, the most of students fall on age group 18 and 19 but four of the students were above age 30 so, they were removed in the data cleaning process.
5. The independent variables which are highly correlated to each other were not included in regression after multicollinearity test. Tolerance value less than 0.1 and variance inflation factor (VIF) more than 10 was considered as problematic independent variables and were not included in regression.

Cigarette Smoking Behavior

Univariate analysis indicated that gender, ethnicity, accompaniment, father's education and occupation, parents-children relationship, parents-children communication, parental monitoring, brother's smoking habit, family violence, parent-school communication on HRBs, best friend's smoking habit, peer pressure for cigarette smoking, neighbor' pressure, exposure to newspaper were associated with smoking behavior at $p<.001$, $p<.01$ and $p<0.05$. Hence, only these variables are included in further analysis, and the rest of the variables not associated at $p<0.05$ were excluded from logistic regression model.

The logistic regression model used the 'enter' method to predict the logit, that is the natural log of the odds. The data was fitted into the following equation of logistic regression.

$$\text{Logit (P)} = \text{logit (P/1-P)} = \beta x + \varepsilon$$

Where,

P is the likelihood of smoking behavior; x is the independent variables. β is the coefficients of corresponding independent variable and ε is the error term. Logit (P) can range from $-\infty$ to$+\infty$and P from 0 to 1

Personal Level Variables and Cigarette Smoking

First of all, cigarette smoking was regressed with personal level determinants such as gender, ethnicity and accompaniment. This model tested the following research hypothesis:

Hypothesis 1

There is a significant relationship between personal level determinants (gender, ethnicity and accompaniment) and cigarette smoking

Table 5.1

Students' Personal Characteristics and Cigarette Smoking in Logistic Regression Model

Predictors	aOR	95% CI	
		Lower	Upper
Gender			
Female	1		
Male	3.241**	2.65	6.36
Ethnicity			
Brahmin/Chhetri	1		
Janajati/Newar/Dalit/Madhesi	2.66**	1.41	5.02
Accompaniment			
With family	1		
Alone/with others	5.44***	2.21	8.44
Constant	.268		
-Log likelihood	279.09		
Cox & Snell R square	.15		
Nagelkerke R square	.23		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

For the analysis of the model, the smaller the Log likelihood statistic, the better the model fits. Here, adding the independent variable gender (Niraula, Ghimire, Singh, Pokharel, & Pradhan, 2013), caste/ethnicity (MoHP, 2012), accompaniment produced a -2 Log Likelihood statistics of 279. Table1 shows that the value of Nagelkerke R

Square was .23. This indicates the predictability power of the logistic regression model that means 23% of the variation in cigarette smoking was explained by the considered determinants (covariates) where the Nagelkerke R^2 could reach a maximum of 1.

The result shows the covariate gender $(\text{Wald's } \chi^2 = 11.708, p = .001)$ was a significant predictor of cigarette smoking among students [odds ratio = exp (B) = 3.24]. The odd of smoking is more than three times as great in males than females. This result supports retention of the Hypothesis 1.

Similarly, other factors such as caste/ethnicity and accompaniment also predicted smoking behavior. The odd of cigarette smoking is more than three times as great in non-Brahmin/Chhetri students than Brahmin/Chhetri students (B = 0.978, odds ratio = Exp(B) = 2.659, P =.001). The odd of smoking is more than five times great in students staying alone or with other than parents than those staying with parents (B = 0.978, odds ratio = Exp (B) = 2.66, P <.01).

In aggregate, the logistic regression equation including demographic variable is expressed by

Logit (P) = 0.268+ 1.176(gender) +0.978(ethnicity) +1.695(accompaniment) …. (1)

Family Level Variables and Cigarette Smoking

In second step, cigarette smoking was regressed with family level determinants such as father's occupation, parents-children relationship, parent-children communication, parental monitoring, brother's smoking behavior and family violence which was significant in chi-square test. This model considering the assumption was used to test the following research hypothesis:

Hypothesis 2

There is a significant relationship between family level determinants (father's occupation, Parents-children relationship, Parents-children communication, parental monitoring, siblings' cigarette smoking, and family violence) and cigarette smoking

The result shows that father's education & occupation, parents-children relationship, brother's cigarette smoking was not significantly associated so it was not used and shown in the table 5.2.

Table 5.2

Students' Family Characteristics and Cigarette Smoking in Logistic Regression Model

Predictor	aOR	95% CI	
		Lower	Upper
Communication with parents			
Yes	0.11***	0.046	0.263
No	1		
Monitoring by parents			
Yes	0.26**	0.11	0.627
No	1		
Family violence			
Yes	3.85***	1.84	5.054
No	1		
Constant	2.155		
-Log likelihood	214.138		
Cox & Snell R square	0.293		
Nagelkerke R square	0.471		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 & non-significant variables father's education, father's occupation, parents-children relationship, brother's HRB

The result showed that variable parents-children communication $(\text{Wald's } \chi^2 = 24.635, p < 0.001)$ is a significant predictor of cigarette smoking among students [odds ratio = exp(B) = .110]. Therefore, students having much

communication with parents are 89% less likely to smoke cigarette. The students whose parents monitored more are 74% less likely to cigarette smoke (B =8.973, odds ratio = Exp (B) = .260, P <0.001). The odd of smoking is more than four times great in students who are exposed to family violence than students who are not (B =1.349, odds ratio = Exp (B) = 3.853, P <0.001).

The Nagelkerke R Square was 0.471 (Table 5.2) which indicates that nearly half of the variability in cigarette smoking is explained by considered family level determinants. Family level variables used in this model therefore have a strong influence on cigarette smoking in students.

In aggregate, the logistic regression equation family level variable is as follows

Logit (P) = 2.155-2.206(parent-children communication)- 1.349 (parental monitoring) + 1.349(Family violence) + ……. (2)

Community/Society Level Variables and Cigarette Smoking

In the third step, cigarette smoking was regressed with community/society level variables such as school-parent communication on HRBs, school attendance, peer influence, peer pressure, neighbor pressure, exposure to newspaper which were significant in chi-square test. This model considering the assumption was used to test the following research hypothesis:

Hypothesis 3

There is a significant relationship between community level determinants (parents-school communication, school attendance, best friend smoking, peer pressure, neighbor pressure, exposure to newspaper) and cigarette smoking

The logistic regression showed that community level variables such as best friends' smoking behavior, school attendance and peer pressure are significant predictors of cigarette smoking behavior of students. From the result, students whose

best friends smoke cigarette are three times more likely to smoke than those students whose best friends did not smoke cigarette (B = 1.212, odds ratio = Exp (B) = 3.359, P < 0.001). Students with regular school attendance are 61% less likely to smoke cigarette than students with irregular school attendance (B = .939, odds ratio = Exp (B) = .391, p <0.01). Students with peer pressure are 86% more likely to smoke cigarettes as compared to students who did not had peer pressure (B = 1.415, odds ratio = Exp (B) = .243, p <0.001).

Table 5.3

Students' School & Peer Characteristics and Cigarette Smoking in Logistic Regression Model

Predictors	A OR	95% CI	
		Lower	Upper
School attendance			
Regular	0.39**	0.19	0.79
Irregular	1		
Peer influence			
Yes	3.36***	1.75	6.46
No	1		
Peer pressure			
Yes	1.24***	1.13	1.46
No	1		
Constant	2.09		
-Log likelihood	280.89		
Cox & Snell R square	0.140		
Nagelkerke R square	0.226		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and non-significant variables: Parent teacher interaction, neighbor pressure and exposure to newspaper

In aggregate, the logistic regression equation including cigarette smoking and community level variables are as:

Logit (P) = 2.087+1.212(best friend cigarette smoking/peer influence) +1.415(peer pressure) – 0.939(school attendance) +…… …. (3)

The model depicted that cigarette smoking habits of students increased with best friend cigarette smoking, peer pressure for cigarette smoking and school attendance. The result showed students whose best friend smoke cigarette and whose peer pressure are likely to smoke cigarette. At the same time, students who had regular school attendance are less likely to smoke.

Alcohol Use

Personal Level Variables and Alcohol Use

This model considering the assumption was used to test the following research hypotheses that were related to research question 2:

Hypothesis 4

There is a significant relationship between personal level determinants (gender, accompaniment) and alcohol use

Table 5.4

Students Personal Characteristics and Alcohol Use in Logistic Regression Model

Predictors	aOR	95% CI	
		Lower	Upper
Accompaniment			
With parents	1		
Alone/with others	7.18***	3.12	16.54
Constant	-2.94		
-Log likelihood	323.47		
Cox & Snell R square	0.11		
Nagelkerke R square	0.16		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and non-significant variable is gender

The result shows the covariates accompaniment explain alcohol use among students. From the statistical results: student staying alone had (B =1.972, odds ratio = Exp (B) = 7.184, p <0.001). Gender was not major predictor of alcohol use among the students which was not shown in table. The odd of alcohol use is more than seven times as great in students living alone or with others and with parents.

Logit (P) = -2.937+.32(Gender)+1.972(Accompaniment)…… (4)

Table 5.4 shows that the value of Nagelkerke R Square was .164. This indicates that the model predicted 16.4 % of the variation in dependent variable (Alcohol use) explained by the considered independent variables (covariates). Hypothesis 2 was retained, whereas hypothesis related to gender was not retained.

Family Level Variables and Alcohol Use

There are eight hypotheses under this dimension:

Hypothesis 5

There is a significant relationship between family level determinants (father's alcohol use, mother's alcohol use, parents-children relationship, parents-children communication, parental monitoring and family violence) and student's alcohol use

In the model father’s alcohol use, children-parent relationship and children-parent communication were not significant; the final model included mother’s alcohol use, monitoring by parents, and family violence. Table 5.5 shows that the value of Nagelkerke R Square was 0.269. This indicates the predictability power of the logistic regression model that means 27% of the variation in alcohol use was explained by the considered determinants (covariates) where the Nagelkerke R^2 could reach a maximum of 1.

Table 5.5

Students' Family Characteristics and Alcohol Use in Logistic Regression Model

Predictor	aOR	95% CI	
		Lower	Upper
Mother drinks alcohol			
Yes	4.41**	1.62	12.02
No	1		
Monitoring by parents			
Yes	0.17***	0.09	0.51
No	1		
Family Violence			
Yes	2.83***	1.55	4.16
No	1		
Constant	-.655		
-Log likelihood	283.225		
Cox & Snell R square	0.18		
Nagelkerke R square	0.27		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and non-significant variables are parents-children communication, parents-children relationship, Father's HRBs

From the statistical results: mother's alcohol use (B =1.483, odds ratio = Exp (B) = 4.407, p <0.01) Parental monitoring (B =-1.79, odds ratio = Exp (B) = 0.167, p <0.001) and with family violence (B =1.041, odds ratio = Exp (B) = 2.833, p <0.001). The odd of alcohol use is more than four times as great in student whose mother drink alcohol than the student whose mother does not drink alcohol. The odd of alcohol use is 83% less in student's whose parents monitor than those students' whose parent's do not monitor. Thus, model equation is

Logit (P) = -.655+1.483(mother's alcohol use) – 1.79(parental monitoring) +1.041(family violence) + ……. (5)

The model depicted that, other things remaining same, the degree of alcohol use by the students depends on family characteristics.

Community Level Variables and Alcohol Use

This model tested the following seven research hypotheses that are related to research question 2.

Hypothesis 6

There is a significant relationship between community level determinants (peer influence, peer pressure, neighbor pressure and exposure to radio) and alcohol use

Table 5.6

Students' Peer and Community Characteristics and Alcohol Use in Logistic Regression Model

Predictor	aOR	95% CI	
		Lower	Upper
Peer influence			
Yes	7.06***	3.82	13.03
No	1		
Neighbor pressure			
Yes	1.61*	1.32	1.97
No	1		
Exposure to radio			
Yes	0.63*	0.33	0.98
No	1		
Constant	-1.761		
-Log likelihood	297.269		
Cox & Snell R square	0.17		
Nagelkerke R square	0.27		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and non-significant variables are peer pressure, neighbor pressure, neighbor monitoring and best friend in neighbor is correlated to peer influence so it is not regressed.

Table 5.6 shows that the value of Nagelkerke R Square is 0.265. This indicates the predictability power of the logistic regression model that means 26.5 percentage of the variation in dependent variable (Alcohol use) is explained by the considered

independent variables (covariates) where the Nagelkerke R^2could reach a maximum of 1.

The result showed that the covariates: Best friend alcohol use, neighbor pressure positively and significantly explain alcohol use among students. From the statistical results: Best friend alcohol use (B = 1.954, odds ratio = Exp (B) = 7.059, p <0.001). The odd of alcohol use is more than seven times as great in whose best friend drink (peer influence) than those whose best friend does not drink at 95% CI. Moreover, neighbor pressure had (B =.493, odds ratio = Exp (B) = 1.61, p< 0.05). Students whose neighbor pressure to use alcohol are 61 % more likely to use alcohol. Exposure to radio (B =-.469, odds ratio = Exp (B) = .626, p<0.05). Students who listen to radio are 37 % less likely to use alcohol at 95% CI. Internet use by student has (B =.775, odds ratio = Exp (B) = 2.170, p< 0.05).

Logit (P) = 1.761+1.954 (peer influence) +.493(neighbor pressure) - .469(exposure to radio) + …… (6)

The model depicts that, other things remaining same, the degree of alcohol use by the students depends on community characteristics such as peer, neighbor and media influences.

Drug Use

Personal and Family Level Variable and Drug Use

Data for the variables gender and accompaniment was not sufficient for the logistic regression model. This tested the following research hypothesis that were related to research question 2.

Hypothesis 7

There is a significant relationship between family level determinants (parents-children communication, parental monitoring, mother's involvement in HRBs, family violence) and drug use

Table 5.7

Students' Family Characteristics and Drug Use in Logistic Regression Model

Predictors	aOR	95% CI	
		Lower	Upper
Monitoring by parents			
Much	2.62*	0.45	5.19
Less	1		
HRB of mother			
Yes	1.27*	1.08	1.97
No	1		
Constant	7.89		
-Log likelihood	78.56		
Cox & Snell R square	0.07		
Nagelkerke R square	0.26		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and non significant variables are family source of income, family violence; similarly, personal level variables such as gender and accompaniment are also not significant.

Table 5.7 shows that the value of Nagelkerke R Square was 0.264. This indicates the predictability power of the logistic regression model i.e. 26% of the variation in drug use was explained by the considered determinants (covariates) where the Nagelkerke R^2 could reach a maximum of 1.

The result showed that the covariates: Monitoring by parents and HRB of mother significantly explained drug use among students. From the statistical results: Monitoring by parents (B =- 1.309, odds ratio = Exp (B) = 2.616, $p < 0.05$) and HRB of mother (B =-1.290, odds ratio = Exp (B) = 0.275, $p < .05$). Students whose parents monitor was two times more likely to use drug and students whose mother had HRB were more likely to use drug.

Logit (P) = 2.804-1.309(communication with parents) +.962(Monitoring by parents)- 1.290(HRB of mother) -.1.415 (Family violence) + …… (7)

Community/Society Level Variables and Drug Use

This model tested the following research hypotheses that were related to research question 2.

Hypothesis 8

There is a significant relationship between community level determinants (peer influence, peer pressure, exposure to radio) and drug use

Table 5.8

Students' Peer and Community Characteristics and Drug Use in Logistic Regression Model

Predictors	aOR	95% CI	
		Lower	Upper
Exposure to radio			
Yes	0.30*	.09	0.98
No	1		
Constant	.71		
-Log likelihood	102.19		
Cox & Snell R square	0.02		
Nagelkerke R square	0.09		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05, peer influence and pressure are non-significant variables).

The value of Nagelkerke R Square is .087. This indicates the predictability power of the logistic regression model i.e. 8.7 percentage of the variation in dependent variable (Drug use) had been explained by the considered independent variables (covariates) where the Nagelkerke R^2could reach a maximum of 1.

The result shows that exposure to newspaper was related to reduced odds of drug use (B = -1.199, odds ratio = Exp (B) = 0.30, p <0.05). Hypothesis 8 was retained.

Logit (P) = -.343 -1.199 (exposure to radio) ……. (8)

The model depicted that, other things remaining same, the degree of drug use by the students depends on community characteristics.

Risky Sexual Behavior

Personal Level Variable and Risky Sexual Behaviors (RSB)

First of all, RSB was regressed with personal level determinants, testing the following research hypothesis

Hypothesis 9

There is a significant relationship between family level determinants (gender, accompaniment) and RSB

Table 5.9

Students' Personal Characteristics and RSB in Logistic Regression Model

Predictors	aOR	95% CI	
		Lower	Upper
Gender			
Male	4.20***	2.15	7.21
Female	1		
Accompaniment			
Alone/With others	0.17*	0.07	0.41
With family	1		
Constant	-1.84		
-Log likelihood	293.6		
Cox & Snell R square	0.16		
Nagelkerke R square	0.24		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and age is non-significant variable

When gender and accompaniment are regressed, the result shows male students are more likely to be involved in RSB. The odds of RSB is more than four times as great in males than females (95% CI 2.15- 7.21)

log(P)= -3.106 + 1.502(Gender)+1.605(Accompaniment) +……. (9)

Family Level Variable and Risky Sexual Behaviors

This model tested the following research hypothesis that were related to research question 2:

Hypothesis 10

There is a significant relationship between family level determinants (father's education, parents-children relationship, parents-children communication, parental monitoring, family violence) and RSB

Nagelkereke R square validates the relationship between predicted variable, i.e. risky sexual behavior of students with selected predicting variables. Nagelkereke R square value .09 indicates 9 percent predictability of independent variables on dependent variable. The summary of logistic regression is presented below.

The binary logistic regression method was used to test family variables such as father's education, communication with parents, parental monitoring and family violence were related to RSB of the students. The odds of involvement in RSB is 78% more in student whose father is educated than a student whose father is not educated at 95% CI. Moreover, the result also showed that children who are monitored more by their parents are less likely to be involved in RSB. The odds of involvement in RSB is 44% higher in students who exposed to family violence compared to students who are not (95% CI 1.116-4.061).

Table 5.10

Students' Family Characteristics and RSB in Logistic Regression Model

	aOR	95% CI	
		Lower	Upper
Father's education			
Literate	0.78***	0.64	0.88
Illiterate	1		
Family violence			
Yes	0.56*	0.32	0.98
No	1		
Constant	0.97		
-Log likelihood	305.82		
Cox & Snell R square	0.06		
Nagelkerke R square	0.10		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05 and non-significant variables are parents-children relationship, parents-children communication, parental monitoring, mother's involvement in HRB and brother's involvement in HRBs; Mother's beat father is highly correlated to family violence so it is removed during regression

Logit (P) = .965-2.44(Father's education) -0.584(Family Violence) + ……. (10)

The model depicted that, other things remaining same, the degree of involvement in RSB use by the students depends family characteristics. The hypothesis 3 and 6 are retained.

Community/Society Level Variable and RSB

This model tested the following research hypothesis that were related to research question 2:

Hypothesis 11

There is a significant relationship between community level determinants (peer influence, best friends' visit to CSW, peer pressure for dating, peer pressure for sexual intercourse, internet use for entertainment, masturbation) and RSB

Arousal after watching adult movie and masturbation habit of students were significant predictors of RSB among students. Arousal after watching adult movie increased 2 folds in odds 95% CI. of involving in RSB. Masturbation habit of students increased 3 folds in odds (95% CI 1.68-6.21) of involving in RSB.

Logit (P) = -4.868- +.729(internet use) +1.171(Masturbation)+ (11)

Nagelkereke R square validates the relationship between predicted variable, i.e. RSB of students with selected predicting variables. Nagelkereke R square value 0.336 indicates 33.6 percent predictability of independent variables on dependent variable. Hypothesis 13 and 14 were retained.

Table 5.11

Students' Peer and Community Characteristics in Logistic Regression Model

Predictors	aOR	95% CI	
		Lower	Upper
Visit adult site/internet use			
Yes	2.93**	1.41	6.09
No	1		
Masturbation			
Yes	3.22***	1.67	6.21
No	1		
Constant	0.01		
-Log likelihood	265.89		
Cox & Snell R square	0.22		
Nagelkerke R square	0.34		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05; Peer influcen, peer pressure, neighbor pressure, academic achievement, bunking class and peer pressure are non significant variables whereas best friend visit adult site, student's visit adult site and internet use for entertainment are correlated in multicollinearity test so were not regressed)

Analysis of Major Health Risk Behaviors and Its Determinants across three levels: Personal, Family and Community

Cigarette Smoking

The analysis supported some of the findings of previous analysis indicated different pattern of effect on some variables. In combined analysis, gender, ethnicity, accompaniment, communitation with parents, monitoring by parents, family violence, school attendance, best friend cigarette smoking habit and peer pressure were found significantly related to smoking behavior. This study shows male students have higher probability of smoking behavior than female students. Similarly, results also show non-Brahmin/Chhetri students have higher probability of cigarette smoking compared to Brahmin/Chhetri students. Combined analysis shows that in model 1 male students are more likely to smoke compared to female students. Caste/Ethnicity and Accompaniment in model I has statistically significant effect on smoking behavior. Non-Brahmin/Chhetri students are significantly exposed in model I, II and III but the odd ratio decreased subsequently from model I to III. Non-Brahmin/Chhetri students nearly two times more likely to smoke as compared to Brahmin and Chhetri.

Sex/gender variable retained its significance in all models. However, after addition of family level variable in the first model and community variables in second model, the odd ratio decreased slightly in model III. Family and community level variables are also important predictor as their inclusion also reduce the odd ratios. In model I, students staying alone and with others were statically significant, but it was also retained in model III. After inclusion of community level variables, it was revealed that students staying have higher probability of smoking.

Students whose parents monitor more and students with higher family violence are significantly associated with cigarette smoking in II and III models which

decreased with addition of community level variable in model III indicating that community level variables can influence to cigarette smoking habit of the students to some extent. Furthermore, best friend smoking habits and peer pressure was also significantly found associated with cigarette smoking habit of the students.

Table 5.12

Variables in Models Predicting Smoking Behavior of Students

Predictors	Model 1			Model II			Model III		
	aOR	95% CI		aOR	95% CI		aOR	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Gender									
Female(ref)	1			1			1		
Male	3.24**	1.65	6.36	2.10**	1.32	6.78	1.71*	1.69	4.28
Ethnicity									
Brahmin/Chhetri(ref)	1			1			1		
Janajati/Newar/Dalit/Madhesi	2.66**	1.41	5.02	1.94*	1.10	4.22	1.97*	1.87	4.47
Accompaniment									
With family(ref)	1			1			1		
Alone	5.44***	2.21	8.44	2.1*	1.06	5.93	3.19*	1.07	6.48
Communication with parents									
No				1			1		
Yes				0.12	0.06	2.94	0.11***	0.04	0.43
Monitoring by parents									
No				1			1		
Yes				0.41*	0.16	0.65	0.45*	0.17	0.64
Family Violence									
No				1			1		
Yes				4.10***	1.10	8.92	2.77**	2.21	6.33
School attendance									
Irregular							1		
Regular							0.57*	0.22	0.81
Peer influence/best friends smoke									
No							1		
Yes							3.40**	1.41	8.19
Peer pressure							1		
No							0.45*	0.19	0.78
Yes									
Constant	6.53			1.030			1.42		
-Log likelihood	272.7			196.11			181.36		
Cox & Snell R square	.16			.33			0.36		
Nagelkerke R square	.26			.53			0.58		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Similarly, family violence is almost 4 folds in odds 95% CI but it decreases in model III after adding community level variables. Best friend smoking behavior and peer pressure are significant at community level. Model III which include personal, family and community level variables with Nagelkerke R Square .481 can predict smoking behavior by 48.1%.

Alcohol Use

Student staying alone were 7 times more likely to use alcohol than students staying with family in model I. Students' accompaniment variable retained its significance even after inclusion of family and community level variables but in each addition there was slightly reduction on odds ratio by adding family level variable in Model I (odd ratio=7.2) to Model II (odd ratio=5.2) but it increased slight again in Model III (odd ratio=6.0) shows family level variables are important predictor of smoking behavior.

In multivariate analysis mother's alcohol use, family violence and communication with parents are significant which shows that students with family violence and whose mother use alcohol have higher probability of alcohol use. Similarly, peer influence or students whose friends drink have higher probability of alcohol use. In the final or third model, all three variables at personal, family and community level predict alcohol use by 48%.

Table 5.13

Variables in Models Predicting Alcohol Use

Predictor	Model 1			Model II			Model III		
	aOR	95% CI		aOR	95% CI		aOR	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Gender									
Female	1			1			1		
Male	1.38	0.78	2.43	1.246	0.64	2.41	0.61	0.29	1.28
Accompaniment									
Family	1			1			1		
Alone/others	7.18***	3.12	16.54	5.245**	2.12	12.96	6.08***	2.28	16.21
Alcohol use(Mother)									
Yes				5.442***	1.84	16.13	6.15***	1.96	21.65
No				1			1		
Parental monitoring									
Yes				0.24***	0.13	0.47	0.21***	0.10	0.44
No				1			1		
Family Violence									
Yes				2.65**	1.42	4.97	1.52**	1.16	3.06
No				1			1		
Peer Influence									
Yes							6.93***	3.28	14.62
No							1		
Neighbor pressure									
Yes							0.85	0.38	1.86
No							1		
Exposure to radio									
Yes							0.44*	0.21	0.93
No							1		
Use of internet									
Yes							2.21*	1.78	6.24
No							1		
Constant	-0.66			-2.29			-2.47		
-Log likelihood	283.23			263.79			223.16		
Cox & Snell R square	0.18			0.22			0.32		
Nagelkerke R square	0.27			0.34			0.48		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Drug Use

Personal level characteristics were not included in drug use because in Chi square test both the gender and accompaniment are significant but the result shows that all drug users were male and staying alone/with others or with parents. Model I fits without controlling any variables but Model II fits only after controlling community level variables (Best friends' involvement in HRB, peer pressure and exposure to newspaper). Both Model I and Model II shows that monitoring by the parents is significantly associated with drug use by the students. Students' whose parents monitor more are two times less likely to involve in drug use with 95% CI in model I. Similarly, in model II by adding community level variable, result shows that students' whose parents monitor more are also two times less likely to involve in drug use with 95% CI.

Mother's HRB status and drug use by the students are significantly associated. Students whose mother has any of the four major health risk behavior are 27% more likely to use drug as shown in model I with 95% CI. In Model II, students' whose mother has any of the four major health risk behavior included in this study were 30% more likely to use drug in 95% CI.

Table 5.14

Variables in Models Predicting Drug Use

Predictors	Model I			Model II		
	aOR	95% CI		aOR	95% CI	
		Lower	Upper		Lower	Upper
Communication with parents						
Much	0.27	0.05	1.57	0.31	0.06	1.737
Less	1			1		
Parental monitoring						
Much	2.62*	1.45	5.19	2.47*	1.434	4.014
Less	1			1		
HRB of mother						
Yes	1.28*	1.08	1.97	1.30*	1.083	1.094
No	1			1		
Family violence						
Yes	0.24	0.05	1.19	0.29	0.06	1.457
No	1			1		
Peer influence						
Yes				0.52	0.12	2.081
No				1		
Peer pressure						
Yes				1.19	0.26	5.438
No				1		
Exposure to Radio						
Yes				0.52	0.12	2.157
No				1		
Constant	7.89			26.01		
-Log likelihood	78.56			76.75		
Cox & Snell R square	0.07			0.08		
Nagelkerke R square	0.26			0.28		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

Risky Sexual Behavior (RSB)

The multivariate analysis shows that several factors such as gender, accompaniment, father's education, masturbation, sexual drive after visiting adult site were significantly associated with RSB in any one of three model namely I, II, III. Model I was fitted without controlling any variables. Model II was fitted after controlling family characteristics (Father's education, parents-children communication, monitoring by parents, family violence). Model III added community characteristics (HRB of peers, Best friend visit CSW, peer pressure for dating, peer pressure for sexual intercourse, use of internet, surfing of adult site, sexual drive after visiting adult site). Gender of students shows significantly more involvement in RSB at .001significance levels. But gender and accompaniment are not significantly associated with RSB after adding community level variables.

After controlling family characteristics, accompaniment resulted significant association with RSB. Father's education significantly was associated with RSB with odds of 1.27 at 95% CI after adding community level variables. In model III along with personal characteristics and family characteristics, some of the variables of community level were significantly associated with RSB.

The data on below table shows that one percent increase in masturbation habit increases the odds of improving increase in the RSB of the students by 2.89 times. In other words, if the masturbation habits are increased by 10 percent, the possibility of RSB increased 20.90 times. The odd ratio indicates the extent of independent variable(s) to dependent.

Table 5.15

Variables in Models Predicting RSB

Predictors	Model 1			Model II			Model III		
	aOR	95% CI		aOR	95% CI		aOR	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Gender									
Male	4.20***	2.15	7.21	4.57***	2.20	9.51	1.45*	1.18	3.66
Female	1			1			1		
Accompaniment									
Alone/with others	1.17	0.07	1.41	1.24***	1.09	1.60	1.80*	1.51	2.24
With family	1			1			1		
Father's education									
Illiterate				0.80	0.64	.99	1.27*	1.10	1.61
Literate							1		
Monitoring									
Yes				0.77	0.30	1.92	1.44	0.52	4.01
No							1		
Family violence									
Yes				0.46	0.25	0.89	1.97*	1.46	4.04
No							1		
Peer pressure(sex)									
Yes							1.44	0.69	3.03
No							1		
Masturbation									
Yes							2.89**	1.40	5.96
No							1		
Internet use for entertainment									
Yes							2.75**	1.22	6.22
No									
Constant		-1.84			-.064		-5.97		
-Log likelihood		293.6			265.36		238.11		
Cox & Snell R square		0.16			0.18		0.24		
Nagelkerke R square		.240			0.27		0.37		

Note. Significant at ***= p<0.001; **=p<0.01 and *=p<0.05

The odd ratio more than one shows that there is positive influence on the dependent variable. Similarly, sexual drive after visiting adult sites was significantly associated with RSB with odds of 2.75 at 95% CI (1.22-6.22). Therefore, students who had masturbation habit were almost 3 times more likely to involve in RSB with 95% CI (1.40-5.96). Students who surfed in internet for adult contents and they had sexual drive after going through it were 2 times more likely to involve in RSB.

Relation of Alcohol Use with Cigarette Smoking and RSB

This test was conducted to assess the relationship between major HRBs. One HRB sometimes catalyses the other. For example, a student consuming alcohol has higher chances of engaging in other HRBs such as smoking cigarettes and RSBs.Table 5.15 shows the Nagelkereke R square value as 0.119. This indicates the predictability power of the logistic regression model that means 12% of the variation in alcohol use was explained by the considered cigarette smoking and RSB where the Nagelkerke R^2 could reach a maximum of 1. The summary of logistic regression is presented below in table 5.16.

Table 5.16

Variables in the Equation

Predictors	aOR	95% CI	
		Lower	Upper
Cigarette smoking	***		
Yes	3.28	1.80	5.98
No	1		
Risky sexual behavior	**		
Yes	2.29	1.26	4.16
No	1		
Constant	-1.75		
-Log likelihood	334.58		
Cox & Snell R square	.08		
Nagelkerke R square	0.12		

The odds of alcohol use are three times greater for students who smoke than those who donot smoke (95% CI 1.795-5.984). Similarly, the odds of alcohol use are two times greater in students who involve in RSB than those who do not (95% CI 1.256-4.155).

Summary of Hypothesis Testing

Chi-square test was performed to examine the association between four major HRBs included in this study and their determinants at personal, family and community/society level. The chi-square test showed that gender, accompaniment, parent-children communication, parental monitoring, family violence, peer influence and pressure were personal factors that were significantly associated with major HRBs among HSSS. Similarly, Father's education, Father's occupation, Relationship with parents, sibling involvement in HRBs, parents' involvement in HRBs, Mass media and technology were family and community factors that were significant to some particular HRBs only. Logistic regression models were then used to find the extent of determinants more or less likely to involve in HRBs. First, the models were created separately at personal, family and community/society level for cigarette smoking, alcohol use, drug use and RSBs. Then, a combined analysis was performed to observe difference in each determinant with the addition of other determinants or independent variables at different levels or personal, family and community/societal level.

5.17

Summary of Hypotheses Test

Determinants	Smoking	Alcohol use	Drug use	RSB
Gender	✓	×	×	✓
Accompaniment	✓	✓	×	✓
Fathers education	×	×	×	✓

Mother's involvement in HRB	×	✓	✓	×
Parents-children communication	✓	×	×	×
Parental monitoring	✓	✓	✓	×
Family violence	✓	✓	×	✓
Peer influence	✓	✓	×	×
Peer pressure	✓	×	×	×
School attendance	✓	×	×	×
Neighbor pressure	×	✓	×	×
Exposure to radio	×	✓	✓	×
Adult movies/Internet use	×	×	×	✓
Masturbation	×	×	×	✓

Table 5.16 shows the summary of hypothesis testing where tick (✓) represents a significant relationship and cross (×) denotes no relationship. Gender is significantly associated with cigarette smoking, drug use and RSB but it is not associated with alcohol use. Accompaniment is also major determinants which is significantly associated with all major health risk behavior except drug use. Similarly, father's education is significantly related to RSB whereas other major HRBs are not significantly related. Mother's involvement in HRBs is also major predicting factors for alcohol and drug use. Parents-children communication is significantly associated with cigarette smoking. Similarly, parental monitoring is significantly related to cigarette smoking and drug use. Family violence is also major determinants for HRBs. It is significantly associated with all major HRBs except drug use.

School attendance and Peer influence or peer modelling is also significantly related to cigarette smoking and alcohol use. Peer pressure is significantly associated with only cigarette smoking while Neighbor pressure is significantly associated with alcohol use. Similarly, Media has less influence on HRBs. However, exposure to

radio is significantly associated with alcohol use. Likewise, watching adult movie and masturbation practice is also significantly associated with RSB.

Chapter Summary

This chapter included statistical analysis procedure to find out the extent of contribution of determinants on each HRB. The statistical analysis showed that influence of determinants on different HRBs are not the same. For instance, smoking behavior is related to gender, accompaniments, parent-child communication, parental monitoring to large extent and peer influence and pressure to some extent only. Gender is not a major determinant of alcohol use. Instead, it is determined by accompaniment, monitoring by parents, family violence and best friends' alcohol use.

All the drug users in this study were male. The finding suggests that drug use among students is determined by monitoring of parents, mother's involvement in HRB and exposure to media/radio. RSB was determined by variables like gender, father's education, family violence, sexual drive after watching adult contents in websites and masturbation. Overall, this chapter shows that gender, accompaniment and family violence is the main determinant for major HRBs included in this study except alcohol use. Similarly, family violence has also tremendous effect on HRBs of the students except drug use. Parental monitoring is one of the main determinants in HRB except RSB. This chapter also showed the combined analysis to show the effect of major determinants on each HRB by controlling variables at personal, family and community levels.

CHAPTER VI

DISCUSSION

This chapter discusses the major determinants of four HRBs by establishing their linkages at various level of ecological system including personal, family and community level.

Major Findings of the Study

The major findings of the study have been discussed in relation to prevalence of HRBs, socio-demographic factors, family factors and community factors.
In terms of the prevalence of HRBs, alcohol use stands at the highest with 22.2% followed by RSB (21.3%), cigarette smoking (19%), and drug use (3.8%).

In relation to socio-demographic factors, gender and accompaniment are the major determinants of HRBs. Gender is the major factor that influences cigarette smoking, drug use and RSBs but it does not have any significant association with alcohol use. However, accompaniment generally influences cigarette smoking, alcohol use and RSBs but not as significantly the use of drugs.

In terms of family factors, family violence influences cigarette smoking, alcohol use and RSBs but not drug use. Similarly, parental monitoring affects cigarette smoking, alcohol and drug use, and mother's involvement in HRBs influences the use of alcohol and drugs.

At community level, peer influence or behavior modelling influences cigarette smoking and alcohol use have been prevailed, however, peer pressure more significantly influences only cigarette smoking. Similarly, watching adult movies/porn site and masturbation practice influence the uptake of RSBs.

Discussion of the Findings

The discussion of findings is presented below in two categories including prevalence of the HRBs and determinants of the HRBs. The discussion reflects on the determinants of HRBs at different tiers by considering the ecological system theory as the major model which includes determinants at three levels such as personal, family and community.

The behavior development in students starts within the innermost setting where different components interact with students directly. The set of nested structures also interact with each other and influence students' behavior. Therefore, in most situations, students' behavior is the result of the overall influence of different factors and their interconnectedness within the overall setting, embedded as nested structures or system (Bronfenbrenner, 2005). For instance, students' ability to learn and read depends not only on the lessons at school but on the nature of connectedness between students' home and school/peers.

In line with the above-mentioned perspective and the theory of developmental ecological perspectives, as emphazised by this study, it can be inferred that the interrelation between students, family and social environments in particular cultural and political settings always exists (Derksen, 2010). Accordingly, for behavioral change of students, a comprehensive ecological approach will help to better understand the interaction between different factors.

Moreover, social learning of students is very much related to available role models in a society. In a society, students are surrounded by many models such as parents, friends, teachers, cinema actors/actress, neighbors to imitate or copy respective behavior. They usually model the behavior of those who they perceive similar to them by gender, age, background etc. (Nabavi, 2012). Therefore,

prevalence of HRBs in students are very much influenced by those models surrounding them such as parents, friends, teachers, neighbor, film stars etc. Students reproduce the behavior that their society deems appropriate for them and they perceive such behaviors as rewarding or punishing depending on social norms. A student also learns by observing the consequence of another person's or model's behavior (Nabavi, 2012). A younger child observing an older sibling being rewarded by parents for a particular behavior is more likely to practice that behavior for him/herself.

Prevalence of the HRBs

The prevalence and status of four major HRBs as found by this research generally differed from the national level data. Cigarette smoking prevalence in students, as shown by this research, was quite high (19%) compared to national percentage (13%) (MoHP, 2012). However, in comparison to smoking prevalence in another metropolitan city such as Pokhara (17%) (VS, Subba, Menezes, & Nagraj, 2010), the prevalence did not differ much. In case of alcohol, the findings of this research suggest higher use of alcohol, 22.2%, as compared to the national data of 18% (MoHP, 2012). Drug abusers in this research stood at 3.8% as against the national data of 1.8% (MoHP, 2012). The reason for a higher prevalence across all HRBs, in comparison to national level data (MoHP, 2012), could be due to the factor that this research has considered urban area whereas the national data often takes an average of the population in rural and urban areas. The other reason could be that the trend of HRBs is increasing in general, irrespective of the national average. In comparison to HRB prevalence in other South Asian countries such as India, Pakistan and Sri Lanka, smoking behavior in Nepal is higher (WHO, 2012). Similarly, alcohol consumption is higher in India and Sri Lanka as compared to Nepal, but it is lower in

Bangaladesh and Pakistan (The Straits Times, 2017). This indicates that the prevalence ranking of different HRBs in South Asian countries is not always the same for one particular country.

Determinants of HRBs

This study confirms that most of the HRBs are shaped at personal, family and community levels (Figure 6). A student's behavior is influenced by a variety of interrelated protective and risk factors. This study particularly highlights the influence of socio-demographic characteristics and the value of family and friends in student's involvement in HRBs. At community level, a student's behavior is influenced by school and neighbor factors to some extent only. The influence of media such as newspaper, radio, television was less whereas the influence of modern technology such as internet was quite high. Health related policies and programs seemed not appropriately helpful for protecting students from HRBs.

Personal Level Determinants

Personal characteristics such as gender and accompaniment are the major determinants to HRBs involvement. Gender is the major factor that influences cigarette smoking, drug use and RSBs but it does not have any significant association with alcohol use. These personal characteristics are very much related to socio-cultural context of Nepali society.

Gender Differences Influences HRBs to a Great Extent

This research has confirmed that gender is a key factor in determining the HRBs among adolescents and youth. The prevalence of all types of HRBs is generally higher in male than in female students. Accordingly, the odds of smoking are three times greater for male students than females. The odds of RSB are five times greater for male students than female students. Drug use is present only in male students. The

prevalence of alcohol consumption is higher in male students, but this difference is not as significant as in case of the smoking, RSBs or drug use. The general trend of higher prevalence of HRBs among male students could be due to predominant social cultural factors, mostly revolving around patriarchal culture of unequal power relation that empowers men and largely considers these HRBs as socially acceptable behavior for the male population (Kaplan, Carriker, & Waldron, 1990; Niraula, Jha, & Shyangwa, 2013; Pradhan et al., 2013; Waldron, 1991; Waldron, Lye, & Brandon, 1991). The marginal difference in alcohol consumption (Anderberg & Dahlberg, 2018) in male and female students, as found by this research, could be due to gender neutral cultural and religious acceptance of alcohol use (Wilsnack, Wilsnack, Kristanjason, Vogeltanz-Holm, & Gmel, 2009) in Newar and indigenous communities, which constitute the major population sample (50%) of this research. The finding of drug use only in male students, is in line with the findings of other researches. For instance, Haas (2004); McCabe et al. (2007) and Becker and Hu (2008) found that adult men are two to three times more likely to use drugs than women, and drug use is mostly associated with aggressive masculinity (Kulis, Marsiglia, Chase, Nieri, & Nagoshi, 2008).

The RSBs is higher among male students compared to female students, as found by this research is consistent with the findings of other researches (Puente et al., 2011; Stupp, McDonald, & Ishida, 2011). Some researchers, however, have shown unclear association between gender and RSB (Vesely et al., 2004). As the literature suggests, conventional beliefs about men's and women's different roles in society could lead to power difference between them which in turn leads to gender differences in RSB (Lefkowitz, Shearer, Gillen, & Epinosa-Hernadez, 2014). In the Nepali culture in particular, the gender differences in RSB could be due to differential

parental monitoring for male and female (MoHP, 2012) because males are considered less vulnerable to sexual abuse and RSB may be considered as normative behavior. Students imitate those models they perceive as similar to themselves and consequently, they are more likely to imitate behavior modeled the same gender (Nabavi, 2012). This statement resonates Nepali context too since son generally learns father's behavior and daughter learns mother's behavior as constructed by society.

Accompaniment is Pivotal to Determine HRBs among Students

This research found a positive association between HRBs and students' accompaniment with parents. Accompaniment generally influences cigarette smoking, alcohol use and RSBs but not as significantly the use of drugs. The odds of cigarettes smoking are five times greater for students staying alone or accompaniment with others than the students staying with their parent. Similarly, the odds of alcohol use are eight times greater for students staying alone or accompaniment with others than the students staying with the parents. Moreover, they are also more likely to engage in RSB. Malta, Mascarenhas, Porto, Barreto, and Morais Neto (2014) and Nnebue, Chimah, Lawoyin, Ilika, and Duru (2015) reiterate that family connectedness and family support are protective factors against HRBs and therefore the absence of parental monitoring often drives young people to alcohol consumption. Spending more time with family and having frequent religious visits usually lowers RSBs and consumption of alcohol (Abebe, Tsion, & Netsanet, 2013). Furthermore, if parental communication on sex and relationships is started at middle school (grade 6-8) or at early adolescence period, the adolescents respond positively to parents' communication and are more effective (Grossman, Jenkins, & Richer, 2018). Similarly, another study done by Santelli, Lowry, Brener, and Leah (2000) reveals

that adolescents who live with both the parents are less likely to have sexual relationship than the adolescents who lived with only one parent or neither parents.

Ethnicity is a Pivotal Determinant for Only Cigarette Smoking

Ethnicity also determines the HRBs among adolescents and youth. However, ethnicity is positively associated with smoking behavior, but this research does not find any clear association between ethnicity and other HRBs such as alcohol and RSBs. Non-Brahmin Chhetri students are three times more likely to smoke cigarette than Brahmin Chhetri students. Accordingly, the research finds the prevalence of smoking the highest in Newar students (78%), followed by Dalit and Madhesi students (38%) and Brahmin/Chhetri students (33%). This finding is similar to other research findings that Janajanti students are two and six times more likely to smoke in comparison to Brahmin/Chhetri students (Bhaskar et al., 2016). Such difference is primarily attributed to permissive culture and attitude for smoking in the hilly regions that are home to Non-Brahmins or Janjati groups (Pradhan, Niraula, Ghimire, Singh, & Pokharel, 2013). Internationally also, a positive correlation between racial or ethnic differences in the adoption of HRBs have been found. For instance, Hispanic youth have the highest smoking initiation rates and white youths have the highest smoking progression rates (Kandel, Egziabher, Schaffran, & Hu, 2004).

Although other researchers have found some level of association between ethnicity and alcohol consumption, this research found no clear association between the two. A study conducted among 369 households in *Sindhupalchowk* found *Manjhi* and *Danuwar* community having higher prevalence of alcohol (Manandhar, Shrestha, & Joshi, 2017). The key reason for no clear association between ethnicity and alcohol consumption as found by this research could be due to the cosmopolitan nature of settlements where younger population mix up and celebrate all festivals and events,

and where alcohol consumption is not as restricted for any one particular ethnic group as one would find in homogenously populated rural areas.

Family Level Determinants

The family environment includes parents, siblings and the nearest relatives who interact with students regarding day to day affairs. Parental characteristics are major determining factors for the students' involvement in HRBs. Family violence influences cigarette smoking, alcohol use and RSBs but not drug use. Similarly, mother's involvement in HRBs influence the use of alcohol and drugs and parental monitoring affects cigarette smoking and drug use.

Family Violence is a Strong Determinant of HRBs

This research indicates a strong association between family violence or conflict and smoking behavior. Accordingly, students who witnessed or are involved in family violence are four times more likely to have smoking behavior and three times more likely to consume alcohol. Furthermore, they are also more likely to engage in RSBs. Ackerson, Kawachi, Barbeau, and Subramanian (2007) suggest that witnessing family violence increases stress and results in more aggressive behaviors, increased smoking and drug use (Chang, 2013). Similarly, weak family bonding and less parental supervision in family violence situation can cause alcohol consumption among adolescents and youth (Kask & Markina, 2013). Inability of adolescents to bond effectively with their family often results in bonding with peers instead and drives them to spending more time with friends (Zinzow et al., 2009), which is similar to the finding of this research and could provide opportunities for them to smoke or drink or undertake RSBs.

Family violence contributes to teenage drug use due to lack of control from parents. Female students with high prevalence of family violence were found more

likely to engage in substance use or drug use (Moses, 2013). Unlike other research studies (Moses, 2013), this research did not find a clear association between family violence and drug use. The reason could be as this research being carried out among student population, many of them were not staying with parents and they hardly had witnessed any family quarrels.

This research, however, found a positive association between parental physical violence and RSBs. The female adolescents who have been exposed to violence are more likely to have sex compared to those who have not. For the male adolescents, it is just the opposite. Hence, it can be derived that perhaps female adolescents are more affected by domestic violence and they place more meaning on family relationship (Mmari, Kakanar, Brahmbhatt, & Venables, 2016). In line with this, research findings of Coyle et al. (2016) also suggest that witnessing or experiencing direct violence is associated with greater intention of vaginal sex and sexual touching behavior. In some instances, female adolescents living with biological parents but experiencing violence at home are more likely to seek sexual experience as compared to those living with relatives or others (Mmari, Kakanar, Brahmbhatt, & Venables, 2016). Similarly, female adolescents who witness parental violence are two times more likely to feel bad about themselves and find trouble in concentration but male students who witness violence are almost twice likely to have suicidal thoughts (Nicodimos, Gelaye, Williams, & Berhane, 2009). The major cofounders for positive relationship between family violence and involvement in HRBs are due to low self-esteem, stress, aggression and retaliation which ultimately can result in lack of focus in their study, and job and diversion to HRBs.

Parental Involvement in HRBs Influences Children's HRBs

This research reveals an association with parental background and HRBs to some extent. This research found no clear association between smoking behavior of students and parents, but other research studies reveal cigarette smoking related to parents' or father's smoking behavior. (Arora, Gupta, Gupta, Bansal , & Thakar, 2017; Wen, Tsai, Chang, Hsu, & Lin, 2005 ; Mays et al., 2014). Parental smoking acts as negative role modelling to adopt such behavior (Shamsuddin & Haris, 2000), or to continue already adopted behavior (Urrutia-Pereira, Oliano, Aranda, Mallol, & Sole, 2017). Herbert and Schiaffino (2007) state that adolescents' smoking attitudes are related to mothers' smoking habit and their perception of smoking depends on messages received from mothers. Furthermore, Oncel, and Aliev (2014) and Arora, Gupta, Gupta , Bansal, and Thakar (2017) show siblings' influence on adoption of smoking behavior is more prominent than parental influence.

This research reveals alcohol uses differently as it is related to mother's alcohol use. Students whose mothers use alcohol are five times more likely to use it but father's alcohol use has not been related to student's alcohol use in this research. Accordingly, in older children, alcohol use is strongly related to mother's drinking behavior (Murray, 2015). Hoque and Ghuman (2012) also state that adolescents are more likely to use alcohol when they see either of their father or mother or both drinking. Likewise, father's drinking habit leading to son's alcohol use are often correlated but parent-offspring correlation as regards to opposite sex is not observed (McGue, Sharma, & Benson, 1996). In case of drug use, family members' drug use has been related to student's drug use (ADBH, 2011; Gopiram & Kishore, 2014). However, in this research, student's drug use has not been related to parents' drug use.

Parental Monitoring is an Important Factor for HRBs

This research found that parental monitoring is related to drug use and cigarette smoking but it is not so prominent in case of alcohol use and RSB. Students whose parents monitor the day to day activities of children are three times less likely to use drug and 59% less likely to smoke. Similar to this research, another research also shows if parents are passive or if parents do not set clear rules against substance use or do not monitor children, then children might develop positive attitude towards substance use or they are more permissive (Ahlstrom, 2002). Parental monitoring is therefore crucial for drug use prevention program (National Institute of Drug Abuse, 2003; Nyatuora, 2012). Stronger parental monitoring is related to less RSB (Aufderheijde, 2015). Parental monitoring helps in preventing adolescents from negative peer influence. One study shows that peer pressure is reported by almost one third of adolescents living alone or with friends which is higher than adolescents living with both the biological parents (Dekeke & PT, 2014). Appropriate and timely parental monitoring is crucial because it creates bond between parents and children and establishes good relationship between them.

Parental monitoring is, therefore, a key influencing factor for preventing adolescents from RSB but parent-children communication does not show much effect on RSB as adolescents hesitate to talk to their parents and do not show sexual urges in front of parents (Aufderheijde, 2015). Along the similar line of other research, this research found a negative association between parental monitoring and RSB. Higher parental monitoring is associated with decrease in number sexual intercourse and parental knowledge about monitoring and enforcement of rules are associated with decrease in the number of adolescents having sex (Dittus et al., 2015). Appropriate

parental monitoring may add more value to decrease prevalence of HRBs than frequent parental monitoring.

Parental Education Influences Only a Few HRBs

This research found no clear relation between parental education and occupation of the parents with HRBs. But in contrast to this research finding, So and Yeo (2015) assert that smoking behavior in adolescents and youth is associated with parental education level. However, the level of parental education has no effect on children's concurrent smoking experimentation or their concurrent decision about smoking in future (Zalondikova, Hruba, & Samara, 2012). Livazovic (2017) also shows that mother's and father's educational level, fathers' work status and family configuration are not significant factors in relation to adolescent's risk behaviors, but these mostly depend on parental time availability. Likewise, socioeconomic status of a student depends on the occupation or profession of the parents which influences the adolescents' and youth smoking indirectly through influence on parents' and peer smoking behavior (Geckova , Stewart, Van, Groothoff, & Post, n.d.) . However, Richter and Lampert (2008) pointed out parental occupation or profession may not be important. In line with this research, Kaya and Unalan (2010) also reveal that mother's educational level is unrelated to the smoking behavior of children which might be due to students imitating behaviors of powerful members in the family usually father.

Educational level of fathers is usually higher than that of mothers (Baxter, 2002) and this research found relationship between father's education and RSB of children. A student whose father is literate is less likely to be involved in RSB. Parents with lower educational level practice appropriate parenting skills less compared to parents with higher educational levels (Sutan & Mahat, 2017). This

finding, however, differs from another study as it revealed that parental education insignificant in the prediction of RSB (Odimegwu & Adedini, 2013). Higher level of parental education can help parents to communicate appropriately on different issues including sex to some extent but on the other hand, the educated parents remain busy which may result in spending less time with children and fail to practice appropriate parenting skills or prevent them from HRBs (Sutan & Mahat, 2017). Therefore, the parental education is not predictor in major HRBs of this research. In Nepali society, illiterate parents are generally engaged in wage based job and they lack time and skills to guide children to follow correct track and many educated parents are also engaged in jobs and provide less time to children.

Community Level Determinants of HRBs

Community level determinants are mainly related to peer, school, neighbor and media where students interact. Peer is one of the major determinants whereas school and neighbor influence less. At community level, peer influence or behavior modelling influences cigarette smoking and alcohol use whereas peer pressure more significantly influences only cigarette smoking. Watching adult movies and masturbation practices influence the uptake of RSBs.

Peer Influence is Vital to Initiate HRBs among Students

The literature review explains that adolescents and youth are usually more connected to peers than parents (KH, Bukowski, & Parker, 2006). For this research as well, all the major HRBs are related to peer influence and peer pressure (Harkeh & Vollebergh, 2012). This research found a strong association between best friends' smoking habit (peer influence) and smoking habits of a student. Students whose best friends smoke are three times more likely to smoke. Similar association was found in India where cigarette smoking was three times more likely if best friend smoked

(Arora, Gupta, Gupta, Bansal, & Thakar, 2017). In addition, self-selection of smoking friends plays a greater role in the initiation of smoking habits (Wang, Eddy, & Fitzhugh, 2000). The smoking pattern and behavior thus indicates that peer influence in general and best friend's influence in particular is a key factor in inducing smoking behavior in adolescents and youth.

Some researchers also suggest that peer influence varies with age category, being stronger for 11th than 8th graders (Urberg, Cheng, & Shya, 1991). Other group of researchers suggest peer influence in terms of active and passive influence (Harkeh & Vollebergh, 2012) or normative modelling influence (Urberg, Shyu, & Liang, 1990). The analysis of data of this research supports the idea of active peer influence, such as imitation or direct pressure, and passive peer influence like social learning. For some students, normative modelling through experimentation could lead to them adopting smoking behavior. Generally, students initiate smoking behavior with the concept "try it" first, however, later they adopt the behavior for "fit in" (Arora, Gupta, Gupta, Bansal, & Thakar, 2017). If peer influence is compared with parental influence, the peer influence such as smoking behavior of the best friend is the consistent predictor of adolescents and youth smoking behavior (Wang, Fitxhugh, Westerfield, & Eddy , 1995). Overall, the data from this research as well as the review of other research studies suggest that peer influence plays an important role for adolescent's adoption of smoking behavior.

This research reveals that peer selection also plays an important role in facilitating drinking behavior. Accordingly, students whose best friends use alcohol are seven times more likely to use alcohol. Alcohol drinking by the adolescents and youth are generally learned through observing or modelling through peers' behavior or by direct pressure from peers to use alcohol (Wang, Hipp, Butts, Jose, & Lakon,

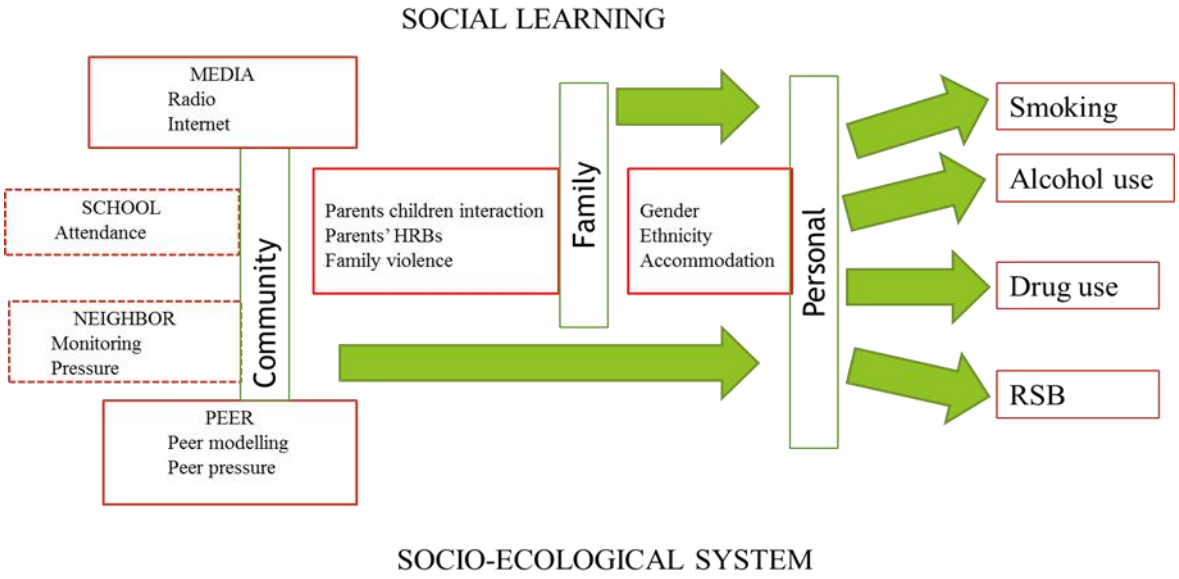
2015). Not a direct peer pressure, but often perceived peer pressure felt by the adolescents could lead to drinking behavior (Ding, 2014). Both the involvement in groups or the association with close friends, could help predict adolescents drinking habit (Urberg, Degirmencioglue, & Pilgrim, 1997). This research found three kinds of peer influence, namely overt offers of alcohol, modelling and social norms. They use alcohol due to offers ranging from polite request to command and then drink, by modelling drinking behavior of best friends, or through the self-observation or perceived social norms that accept drinking (Borsari & Carey, 2001). Therefore, this research suggests that the role of peers is important and a relevant predictor of alcohol use (Silverstre, Oliveira, Trigo, Lopes, & Calaco, 2015), particularly as regards to accepting drinks from friends. In Nepali societies where boys usually spend more time outside home, they could have more peer influence than girls who have less mobility and freedom.

This research found that peer influence and pressure for drug use and RSB are less as compared to smoking and alcohol use. Of the various reasons for drug use, adolescents and youth mentioned the top reasons being relieving oneself from boredom, for forgetting troubles, for relaxation, for fun or to ease pain and for experimentation due to curiosity rather than peer pressure.

This finding is consistent with the social control model that argues that drug users experience less social control than non-users due to personal isolation and weak personal ties. Adolescents and youth with less social control tend to find friends who also have low social controls and who are already engaged in delinquency. In such situations, friendship based on similarities are developed (Rice, Donohew, & Clayton, 2003) and that helps them to use drugs.

Similar to drug use, this research found that there is no strong peer pressure or influence for students to undertake RSB. This finding is in contrast to other studies (Potard, Courtois, & Rusch, 2009; Cherie & Berhane, 2012; Peci, 2017), which found a positive association between peer pressure and RSB of adolescents and youth. Similarly, Sieving, Eisenberg, Pettingell, and Skay (2006) also suggest that the higher the proportion of adolescents and youth whose friends are sexually active, there are chances of greater sexual involvement and adolescents' perception that their friends respect them by having sex. Furthermore, although the size and the composition of adolescents' peer networks influence their involvement in sexual activity (Bingenheimer, Asante, & Ahiadeke, 2015), this research noted that rather the best friends' influence is stronger than the influence from the wider peer network. Such correlation possibly could be due to the fact that in normal Nepali peer culture, adolescents and youth hide their sexual behavior or any account of intimate relationship from the wider peer network and in case they do disclose any such behavior, they would do so only with one or two best friends. The conversation with the adolescents during the research survey, revealed that they are inclined to hide their sexual behavior to themselves and in very rare situation would disclose to a close or best friend.

Figure 6. HRBs and Determinants in Ecological System



School and Neighbor are not Major HRB Determinants

In this research, some of neighbor and school related determinants are found associated with HRBs but their extent of association is not strong. This research found that school attendance is one of the important factors, which shows that students with regular school attendance are less likely to smoke. Similarly, a strong school community helps students to engage in various school activities that result less likeliness of students' involvement in HRBs (Gaete, Rojas, Fritsch, & Araya, 2018) Similarly, school-parent communication on HRBs and academic achievements also have some level of association with smoking behavior of the students. Furthermore, students from schools with stricter rules and discipline are less likely to take drug or engage in RSBs. This finding is consistent with the findings of other research since tobacco uses or smoking among the students is more strongly influenced by peer factors than by school or family influence (Bernette, Gauvin, Lambert, Loughlin, & Paradis, 2007; Kim & Chun, 2018; Livazovic, 2017; Richter & Lampert, 2008).

Neighbours are other immediate influencers on adolescents and youth. This research found that a low level of association between the influence of neighbors and

HRBs. The association is found only in the case of alcohol consumption. Considering alcohol consumption, the influence of neighbors is only when the behavior results in neighborhood noise, disturbances, vandalism, drunkenness, vomiting and urination and in those cases, neighbors inform parents or the family of the adolescent's behavior but in most cases they ignore any such behavior, if it does not harm them or the environment (Wechsler, Lee, Hall, Wagenaar, & Lee, 2002). This is particularly true in urban areas where there is little interaction within the neighborhood (McGahan, 1972). As regards to neighborhood, students' involvement in extracurricular activities through clubs or community centers could also play a major role in diverting adolescents from engaging in HRBs. This was found by (Adachi-Mejia, Chambers, Li, & Sargent, 2014) in their research that adolescent's participation in extra-curricular activities lowers the risk of experimental drinking or smoking. Similarly, participating in extracurricular activities (Pride Survey, 2008) and religious activities (Adamczyk, 2012) sets the framework for their free time which consequently reduces the substance use among students. Therefore, neighborhood role in relation to HRBs among the students is not as vital compared to other determinants.

Masturbation Habits Tend to Increase Adolescents' Engagement in RSB

This research found that adolescents' masturbation habit actually increases the likelihood of their engagement in RSB. This finding is just the opposite of what other researchers have suggested i.e. masturbation is likely to suppress sexual urge or decrease engagement in RSBs (Kat, 2017; 21st century web, 2018). One reason for such increased sexual activity as seen among those with masturbation habit could be due to adolescents' continuous thought process of sexual activity which does not have an outlet or has any chances of getting diverted to any other non-sexual activity.

Similarly, the research also indicates that adolescents and youth whose best friends watch porn or adult movie are associated with student's involvement in RSBs. Furthermore, sexual drive among the students increased three times after watching adult movie. This finding is also in contrast to other research such as the one by Luder, Pittet, Berchtold, Akre, Michaud, and Suris (2011) who suggested that RSBs are not associated with online pornography exposure and such exposure does not seem to have impact on RSBs among adolescents. As regards to the finding of this research, the exposure to web materials among adolescents and youth may not increase the chances of their engagement in RSBs but the unregulated exposure to porn and the absence of parental monitoring in urban set up may induce a favorable environment for adolescents to engage in RSBs.

Media and Watching Adult Movie Influence the HRBs to Some Extent Only

This research suggests a greater influence of adult movie on students' involvement in RSB and alcohol consumption. The effect in other HRBs including smoking and drug use is found to be less prominent. The research particularly indicates that adolescents and youth who visit porn or adult sites are three times more likely to involve in RSBs. Moreno and Whitehill (2014) also had similar findings that increased exposure to alcohol related contents such as pro alcohol messages and images through social media, online portrayals of alcohol marketing and internet use was positively correlated with risky health behaviors. This research also derived that adolescents who used internet more than 3 hours per week were more likely to drink alcohol. Similar to this study, the study conducted among early adolescent students of grade 8 showed that internet use more than 20 hours per week increased alcohol consumption by 2.78 times (Mu, Moore, & LeWinn, 2015). Similarly, the study conducted among 2114 high school students revealed that internet addiction was

associated with problematic alcohol use (Ko, Yen, Yen, & Chen, 2008). Therefore, adolescent and youth's drinking habit is related to using the internet. Besides, internet use, adolescents' alcohol consumption is also associated with radio where they listen to drama, songs and interviews related to consumption of alcoholic beverages which tempts them to use it further in their lives. Contents or images of advertisements related to alcohol use are often portrayed as a way of socialization, relaxation, romance, celebration of success (Grube, 2004), which could instigate adolescents to use alcohol to gain similar experiences.

Alcohol Use among Adolescents and Youth Act as a Catalyst for Cigarette Smoking and RSB

Besides the individual impact of personal, family and community level factors on the prevalence of HRBs, this research found a multiplier or catalyzing effect of one HRB on the other. For instance, the data shows a strong association between HRBs such as alcohol use and cigarette smoking. The students who use alcohol are three times more likely to smoke cigarettes. Other researchers have also revealed similar association that people who smoke are 3-4 times more likely than general population to take alcohol (NIH, 2007). Moreover, alcohol consumption and drinking frequency are strongly associated with being experimental or regular smoker (Jiang, Lee, & Ling, 2014; Reed , Wang, Shillington, Clapp, & Lange, 2007). A research conducted in Finland (Pojanpaa, Rimpela, Rimpela, & Karvonen, 1997) also confirms a strong correlation between tobacco and alcohol use. Furthermore, a study conducted among 13000 pupils revealed that cigarette smoking, and alcohol use are positively associated. Moreover, alcohol use is associated with faster rate of change from non smoker to smoker, but smoking is also associated with slower rate of change from non alcohol user to alcohol user (Hagger-Johnson et al., 2013). One potential explanation

for such correlation and persistence of multiple HRBs could be that adolescents may consider the prevalence of multiple HRBs such as smoking and alcohol use as the symbol of status and maturity. Many of the adolescents could engage in multiple HRBs as an experimental behavior but over time, such behavior becomes persistent or regular.

As with alcohol use and smoking behaviors, this research also found a strong association between alcohol use and RSB among students. Research conducted by Hopkins (2015) also suggested similar findings that students who use alcohol are two times more likely to involve in RSB. Another systematic review also revealed that acute alcohol use generally increases HIV and sexual risk decision making. Furthermore, these effects intensified by alcohol expectancies, increased arousal and delay to condom use (Berry & Johnson, 2018). Alcohol use leads to RSB but the relationship between drinking and risky sexual behavior is the result of interaction among personality, situational and behavioral factors. Therefore, any encounter with new sexual partners is more likely to involve alcohol but alcohol event alone may not significantly be associated with RSB (Temple, Leigh, & Schafer, 1993). Overall, this research finding supports the common assumption that one type of HRB can play a catalytic role and has the potential to induce other types of HRBs in adolescents and youth.

Chapter Summary

This chapter presented the major findings of this research by focusing on the prevalence of four major HRBs including smoking, alcohol use, drug abuse and RSB. These HRBs are analyzed in the context of possible influencing factors at personal, family and community levels. One of the key findings of the research is in relation to the prevalence of four HRBs among sampled students. Accordingly, alcohol use stood

at the highest, followed by RSB, cigarette smoking, and drug use. In terms of ethnicity, non-Brahmin/Chhetri students are three times more likely to smoke cigarette but ethnicity is found not directly related to alcohol use, drug use and RSB of the students. Students who witnessed family violence are three times more likely to use alcohol, four times more likely to smoke and be involved in RSB. Furthermore, students whose parents monitored them regularly are three times less likely to use drugs. This research found the influence of peers is a strong determinant of HRBs. All the findings have been discussed in relation to other research. The main point of difference in this research is related to the association between masturbation habit and undertaking of RSB. Accordingly, the research found adolescents' masturbation habit increases the likelihood of their engagement in sexual behavior. This finding is in contradiction with findings from similar research studies elsewhere which have suggested that masturbation is likely to suppress sexual urge or decrease engagement in RSBs.

CHAPTER VII

SUMMARY, CONCLUSION AND IMPLICATIONS

This chapter summarizes the thesis by relating the research problem with the overall findings and at the end draws together the theoretical, practical and policy level implications.

Summary

Adolescents and youth are generally at the risk of negative health outcomes due to their HRBs. They usually tend to take more risk than adults as they transit to adulthood and as they experience and notice changes in their physical, mental, psychological and social personas. This research considered the context of adolescents and youth by focusing on HRB including cigarette smoking, alcohol use, drug use and RSB. The research analyzed the status and determinants of HRB amongst secondary school students, using three levels of environmental context including personal, family, community.

Adolescents and youth mostly get information regarding good health behavior from family, school, neighbor and media. As the data of this research shows, despite having good information and knowledge on HRB, adolescents and youth are increasingly engaging in HRBs. National level data from adolescents and youth survey (MoHP, 2012) also shows that in Kathmandu valley 20 % of adolescents and youth smoke cigarettes, 35 % drink alcohol, 7 % use major drugs. Moreover, 99 % of adolescents and youth knew about condom but only 44 percent were using it (MoHP, 2012). However, this difference varies due to the influence of personal, family, community level determinants.

This research investigated the answer to the following four research questions.

1. What kind of health risk behaviors do higher secondary school students of Kathmandu metropolitan city engage with?
2. To what extent do sociodemographic factors (age, gender, ethnicity, accompaniment) determine the Health Risk Behaviors of the students?
3. To what extent do family factors (parents' education, occupation, parents-children interaction, parents' and siblings' involvement in Health Risk Behaviors, family violence/conflict) determine the Health Risk Behaviors of the students?
4. To what extent do community level factors (peer influence, school engagement, neighbor connectedness, media exposure) determine the Health Risk Behaviors of the students?

To explore answers to the above research questions, a thorough review of literature related to the topic was carried out (Chapter III). In the literature review, the researcher primarily focused on the status of HRBs, associated variables, policies and theories related to HRB. Based on this comprehensive analysis of literature, the researcher decided to use a quantitative research method. The theory and hypothesis was tested according to the survey data collected at the beginning of the research. The survey questionnaire was developed through Delphi method which was also complemented by literature review and field interaction. There were eighteen higher secondary public schools in Kathmandu metropolitan city. All the schools were chosen for survey (Census method) and the number of students from each school were chosen proportionately based on the number of students in each school. Altogether 342 students were selected as a sample population from 2256 students studying in grade twelve of higher secondary public school in Kathmandu Metropolitan City.

This research has used both descriptive and inferential statistics techniques to analyze data. In the descriptive statistics, frequency and percentage (univariate analysis) as per data type was used to show the status of HRBs among students. The correlation between each HRB and the major determinants at personal, family, community/societal level was carried out by chi square test (bivariate analysis). Moreover, the extent of correlation between HRBs and associated determinants was carried out by logistic regression analysis (multivariate analysis).

In general, the findings show that 19 percent of the student smoke, 22.2 percent students use alcohol, 3.8 percent student use drugs and 21.5 percent students are found involved in RSBs. All the four major risk behavior was higher in male students compared to female students. The major determinants of cigarette smoking were gender, ethnicity, accompaniment, parents-children communication, parental monitoring, family violence, school attendance, peer influence and pressure whereas for alcohol use, accompaniment, mother's alcohol use, family violence, peer influence, neighbour pressure, and exposure to radio were significant predictors. For drug use, parental monitoring and mother's involvement in HRBs were the major determinants. Finally, gender, accompaniment, parental education, family violence, peer influence, masturbation and watching adult movie were the major predictors of RSB. Additionally, the findings show that some HRBs can act as catalyst or influencer of RSB. For instance, alcohol use may act as the catalyst for smoking and RSBs.

Conclusion

This study investigated determinants of HRBs among the students in Kathmandu in an attempt to get insights on the personal and environmental factors. The major findings from this study fall under five main domains including personal, family, school, peer and neighbor and cumulative influence across contexts. Health

risk behavior, as found by this study, is considerably higher among higher secondary public school students as compared to the national average. The study highlights that HRBs are an outcome of the tiered and complex interaction between multiple factors in student's environments which ultimately influence their involvement in a specific or multiple HRBs.

This may be due to the complexity with which various determinants and HRBs interact or combine in a given situation. As the analysis of this research confirms, it is not simply one determinant that determines the HRB, but a complex combination of other aspects such as personal attributes, family/home, school, peers, neighbor and other wider environment such as parents' school interaction, media exposure, norms, value, etc. that determines the extent and prevalence of HRBs. The level of interaction and resources in an individual environment, Kathmandu Metropolitan City in the case of this study, determined the potential of students for adopting and avoiding HRBs. As consistent with ecological system theory, this study indicates that HRBs is determined by the complex combination of immediate and broader environmental factors.

The complexity within student's socio-environment confirms the extent of influence of each determinant's variation at different levels for different types of HRBs. Individual characteristics or personal attributes influence how a student copes with risk factors. As regards to the personal attributes, this study found that gender, accompaniment and immediate environment such as family and peers have a greater influence on students' behavioral development. As such gender is one of the major determinants of HRB among students - the prevalence being higher in male students compared to female students. This might be due to greater social power of men and

boys rooted in patriarchal nature of Nepali society. As per the social architecture, women and girls have less freedom and are monitored strictly by parents.

The involvement of students in different HRBs can be determined through an array of immediate environmental factors and the other factors which are in the periphery or at broader environmental level. This study indicates that immediate environment such as family and peers are vital in determining students' adoption of a particular HRB. One such important immediate environmental determinants, is family level determinants such as family violence and parental monitoring.

Students in public schools generally belong to lower middle or poor income family conditions. Many parents are engaged in low paid employment or run small business and they usually remain stressed due to long working hours or labor-intensive jobs. These often result in low monitoring and care for their children. But, appropriate parental monitoring prevents them from involving with friends having problematic behavior and other adults and siblings. Peer relationships provide the chance for them to learn and model both positive and negative behaviors in the society.

Furthermore, parents are inexperienced at navigating school systems because of their low educational, occupational and awareness level. Similarly, the chances of family violence are generally higher in those situations due to unequal power relation between family members. This study found that students whose family background is full of conflict have more stress and aggression. In such situations, they don't have any clear sense of value and belief system of the family or they get easily diverted from the conventional or normative social behavior. Therefore, in the absence of any strong value and belief system of family, students model and adopt the behaviors of others by imitation. The situation is favorable for adoption of problem behavior

because parents usually monitor less, making it easier for children to divert or engage to delinquent friends. Students' perceive favorable environment, such as peer influence, less parental control and peer approval, allow them further to adopt HRBs. Resilience to HRBs is very much related to relationships with supportive adults in family, witnessing and experiencing family violence and adult family member's involvement in HRBs. Adolescents and youth who do not receive adequate support from adults in the home environment and if parents or care-givers' are involved in any risk behavior, they have potential to influence their children's risk taking behavior.

This study has also drawn a positive correlation of HRBs and peer influence. Students from financially disadvantaged family are more likely to live in low income neighborhoods and mix with peers from similar circumstances. Similarly, in adolescents and youth, parental influence is moderated by peer groups due to their physical, psychological, emotional changes which occur owing to their adolescence hormonal changes. During social learning process, reward and recognition from peers often provide motivation to adopt a certain behavior. In such an ecosystem, a peer as one of the immediate environmental contexts, can have a favourable influence over HRBs. Peers also compel students to have new gadgets like mobile phones, tablets and computers which helps them to interact with different web materials, further catalyzing their tendency to adopt risky health behavior.

This study goes further in stating that the HRBs are also influenced by other immediate environmental context such as school and neighbor influences. The school and neighbor influence HRB of students to some extent only. Students in public school are generally come from low socioeconomic backgrounds from well-off students of many private schools. Microsystems of these students are unique in terms of physical features, activities, and social interactions. This study also draws a

positive correlation of students' health risk behavior and neighborhood, but neighbor influence is not remarkable in urban areas. Generally, neighbors' interaction is less so the monitoring and pressure by neighbor for adoption of behavior is not seen as compared to villages. Students from lower middle class family usually go to the public school where similar types of peers are studying. Therefore, in such school settings, students have low cultural and social capital and they are more likely to involve themselves with delinquent peers and imitate and adopt their behavior. The fact that sibling and peer relationships are more important for the young people as they are immediate microsystem, and these are significant component for imitating and modeling the behavior. Over time and as systems change, risk and protective factors and processes also change.

Moreover, availability, accessibility and affordability of institutional resources, support networks, collective efficacy in neighborhood, government policy and programs are another determining factor at higher ecological level. The social norms, value and cultural setting may also affect students' involvement in HRBs. However, the wider context that may influence HRB is not included in this study and therefore, this can be considered as the limitation of the study.

Implications of the Research

As explained in the previous sections, HRB is the result of a complex combination of the aspects at home, school, neighborhood, personal attributes and other wider environmental context. Understanding such complexity and the correlation between the determinants and the various HRBs, as per this study, has wider implications. The findings of this study are applicable at different levels such as policy, institution and family, and have been explained in the sections below.

Implications for Policy Makers

Adolescents and youth being the larger and productive population segment of a society, the finding of this research reveals that HRB could act as shortfall at different levels in the environment of students. Therefore, it would be much better for policy makers to design youth policies in an integrated way, rather than stand-alone, so to provide a complete package of protective environmental continuum from individual, family to community/society levels. This may provide options or choices for healthy behavior for young people and help them not to get diverted to adopting risky health choices when confronted with a situation to make any decisions.

As the discussion of this research revealed a strong association of gender and HRBs, it is suggested that youth policies and programs need to be better at incorporating gender issues. Policy makers need to include age specific and appropriate gender sensitive HRBs topics early from the primary school higher grades, for instance 11 and 12, or incorporate these topics into the curriculum. Furthermore, as this research shows that students who studied health education at school or those who have had the chance to closely interact with teachers on HRB issues, have less likelihood engaging in HRBs. In light of this, it would be good to consider providing training to teachers so as to enable them to teach and discuss the HRB related issues and topics with students without hesitation.

Given that in Nepalese context, alcohol and cigarette sale happen openly and widely and there is practically no mechanism to monitor age of a buyer, policy makers need to consider putting in place strong prohibition provisions for the sale of alcohol and cigarettes around academic institutions. Provisions need to be made to place any point of sale as far from the educational institutions as possible. Like it happens in other countries, the sale of cigarettes and alcohol has to be done in

allocated licensed shop and it is important to develop a strong system to monitor that. Additionally, it would be better to organize preventive and awareness campaign on HRB on regular basis in public secondary school and to develop the specific networks of organizations working in adolescents and youth issues. It is important to coordinate all level of stakeholders so that required services can be efficiently delivered to young people as per their need. At a broader level, it would be important to put in place policy measures to disseminate knowledge and skills aimed at young people by peer educators so as to enable them to cope where HRBs are already existent.

Implications for Parents

Findings of this research also show that parents, as they are being their immediate interaction circle, play an important role in crafting students' behavior. Given such context, if parents are able to build good relationship and have better communication with their children, they could prevent young and adolescents from engaging in HRBs. Parents need to closely monitor children for the HRBs but without intimidating them or by the use of force. Parents also need to give consideration to establish a regular communication with teachers and management at the school so that their children's academic progress and behavior can be monitored appropriately. Any disciplinary and authoritarian style of parenting can only decrease communication between parents and children and may in fact drive children to hide information and eventually engage in HRBs. Moreover, parents specifically will have to ensure good family environment provided to children by avoiding or solving family violence. They also need to role model for good behavior in front of children because children are very observant and in the first place they usually imitate the behavior of parents, family members and peers. A conducive environment for an adolescents' all-round

normative behavior can only happen when all the three elements constituting parents, peers and school environments align.

Implication to School/Teachers

The teachers and school management play a crucial role in disseminating information and improving the awareness of students on HRBs. Generally, students spend 6 hours or more per day in school and interact with peers and teachers more than they do with their family, neighbors and gadgets. Teachers and school management could use constructive teaching and learning methods rather than traditional teaching to aware students on HRBs and to help students develop connectedness with teachers and peers through good communication. Similarly, good communication between parents and teachers could also minimize HRBs among students. For that matter, there is a need for teachers to be trained in teaching methods for young adults considering the changing behavior patterns in adolescents and youth period. Moreover, schools could play an important role in the delivery of HRB messages correctly and appropriately to adolescents and youth by organizing awareness campaign and interaction programs. Where such campaigns cannot be held, ways need to be explored to include them in the school curriculum, especially by focusing on grade 11 and 12.

This research shows that most of the students are involved in HRBs outside of the school compound, it would be important to develop a strong student behavior monitoring system both inside and outside schools. Strict policy and punishment within the confines of school compound only, as happens currently in the majority of schools, may not be sufficient or effective.

Implications for Future Researchers

Finally, this research also provides reference to potential future researchers to explore different determinants of HRBs. This research was only conducted in community schools in KMC. Hence, future researchers could take an in-depth inquiry into the issues among adolescents in private schools and for adolescents who drop out of school. Furthermore, whereas this research has focused mostly on the immediate environmental context such as personal attributes, family, peers, neighbors and interaction between these contexts, other researchers could consider wider environmental context such as socio-cultural norms.

This study did not consider a detail policy and program review over time but it leaves the scope open for future researchers who would want to look into areas such as evolution of adolescent and youth policies over the years toward addressing adolescent and youth health and programs developed through Ministry of Health and Population and Ministry of Education and Science and Technology. Furthermore, this study focusses more on students' perspective, but the future researchers could also consider to include perspectives of teachers and parents. The other caveat that future research could fulfill is as regards to including samples from both public and private schools, different age groups and rural and urban setting. Such an approach could give a more holistic picture of adolescent and youth behaviors.

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ANNEXES

Annex I: Chi Square Tables

Table 1

Relation of Demographic Characteristics with Smoking (N=342)

Demographic Criteria		N	Smoker	Non smoker	χ^2	p
Gender	Male	175	51(29.1%)	124(70.9%)		
	Female	167	14(8.4%)	153(91.6%)	23.924	<0.001
Age	19 or below	303	56(18.5%)	247(81.5%)		
	Above 19	39	9(23.1%)	30(76.9%)	0.474	0.637
Religion	Hindu	267	45(16.9%)	222(83.2%)		
	Non-Hindu	75	20(26.8%)	55(73.3%)	3.663	0.043
Ethnicity	*Brahmin/Chhetri*	144	17(11.8%)	127(88.2%)		
	Janajati	123	34(27.6%)	89(72.4%)		
	Newar	47	7(14.9%)	40(85.1%)	11.979	0.007
	Dalit/Muslim	28	7(25%)	21(75%)		
Stay	With parents	126	6(4.8%)	120(95.2%)	26.294	<0.001
	Alone/with others	216	59(27.3%)	157(72.7%)		

Table 2

Socio-demography of Respondent and Alcohol Use (N=342)

Demographic Criteria		N	Alcoholic	Non alcoholic	X2(CI)	p
Gender	Male	175	50(28.6%)	125(71.4%)	8.359	.004
	Female	167	26(15.6%)	141(84.4%)		
Age	19 or below	303	69(22.8%)	234(77.2%)	0.465	0.495
	Above 19	39	7(17.9%)	32(30.3%)		
Religion	Hindu	267	54(20.2%)	213(79.8%)	2.811	0.094
	Non-Hindu	75	22(29.33%)	53(70.66%)		
Ethnicity	Brahmin/Chhetri	144	23(16%)	121(84%)	5.768	0.123
	Janajati	123	34(27.6%)	89(72.4%)		
	Newar	47	12(25.5%)	35(74.5%)		
	Dalit/Madhesi	28	7(25%)	21(75%)		
Accompaniment	With parents	126	7(5.6%)	119(94.4%)	32.063	<0.001
	Alone/with others	216	69(31.9%)	(68.1%)		

Table 3

Demographic Characteristics of Respondent and Drug Abuse (N=342)

Demographic Criteria		N	Drug user	Non-user	χ^2 (CI)	p
Gender	Male	175	13(7.4%)	162(92.6%)	12.896	0.001
	Female	167	0(0%)	167(100%)		
Age	19 or below	303	13(4.3%)	290(95.7%)	1.739	0.187
	Above 19	39	0(0%)	39(100%)		
Religion	Hindu	267	10(3.7%)	257(96.3%)		
	Non-Hindu	75	3(4%)	72(96%)	0.01	0.919
Ethnicity	Brahmin/Chhetri	144	3(2.1%)	141(97.9%)		
	Janajati	123	6(4.9%)	117(95.1%)	5.509	0.138
	Newar	43	4(8.5%)	43(91.5%)		
	Dalit/Madhesi	28	0(0%)	28(100%)		
Accompaniment	With family	126	0(0%)	126(100%)	7.883	.005
	Alone/with others	216	13(6.02%)	203(93.98%)		

Table 4

Demographic Characteristics of Respondent and Risky Sexual Behavior (N=342)

Demographic Characterstics		n	Yes	No	χ^2 (CI)	P
Gender	Male	175	60(37.4%)	115(65.7%)	35.474	<0.001
	Female	167	13(7.8%)	154(92.2%)		
Age	19 or below	303	58(19.1%)	245(80.9%)	7.682	0.010
	Above 19	39	15(8.3%)	24(61.5%)		
Religion	Hindu	267	10(3.7%)	257(96.3%)	2.110	0.348
	Buddhist	64	3(4.7%0	61(95.3%)		
	Christian/Muslim	11	1(9.1%)	11(90.9%)		
Ethnicity	Brahmin/Chhetri	144	33(22.9%)	111(77.1%)	3.791	0.435
	Janajati	123	28(22.8%)	95(77.2%)		
	Newar	42	5(10.6%)	42(89.9%)		
	Dalit	15	5(25%)	15(75%)		
	Madhesi	6	2(25%)	6(75%)		
Accompaniment	With family	126	6(8.2%)	120(44.6%)	32.678	<0.001
	Alone/with others	216	67(91.8%)	149(55.4%)		

Table 5

Relation of Parental Variables with Smoking

Parental characteristics	n	Smoker	Non smoker	χ^2	p
Father's Educational level(n=315)					
Illiterate	62	14(22.6%)	48(77.4%)	9.495	0.050
literate	90	10(11.1%)	80(88.9%)		
Primary	63	19(30.2%)	44(69.8%)		
Secondary	35	6(17.1%)	29(82.9%)		
SLC or above	65	11(16.9%)	54(83.1%)		
Mother's Educational level(n=325)					
Illiterate	120	29(24.2%)	91(75.8%)	5.340	0.254
Literate	112	16(14.3%)	96(85.7%)		
Primary	38	9(23.7%)	29(76.3%)		
Secondary	33	4(13.3%)	29(86.7%)		
SLC or above	22	5(20%)	17(80%)		
Father's occupation(n=316)					
Government job	29	2(6.9%)	27(93.1%)	20.337	0.001
Private job	45	10(22.2%)	35(77.8%)		
Migrant worker	28	4(14.3%)	24(85.7%)		
Business	60	15(25%)	45(75%)		
Agriculture	143	22(15.4%)	121(84.6%)		
Waged based work	11	7(63.6%)	4(36.4%)		
Mother's occupation(n=325)					
Service or job	33	5(15.15%)	28(84.85%)	4.028	.258
Business	41	8(19.51%)	33(80.49%)		
Agriculture	204	36(17.65%)	168(82.35%)		
Waged based work	47	14(29.79%)	33(70.21%)		

Table 6

Relation of Parental Variables with Alcohol

Parental characteristics	n	Alcohol user	Non user	χ^2 (CI)	p
Father's Educational level(n=315)					
Illiterate	62	18(29%)	44(71%)	4.736	0.315
Literate	90	19(21.1%)	71(78.9%)		
Primary	63	11(17.5%)	52(82.5%)		
Secondary	35	11(31.4%)	24(68.6%)		
SLC or above	65	12(18.5%)	53(81.5%)		
Mother's Educational level(n=325)					
Illiterate	120	31(25.8%)	89(74.2%)	3.820	0.431
Literate	112	21(18.8%)	91(81.3%)		
Primary	38	9(23.7%)	29(76.3%)		
Secondary	33	5(16.7%)	28(83.3%)		
SLC or above	22	7(31.8%)	15(68.2%)		
Father's occupation(n=316)					
Government job	29	4(13.8%)	25(86.2%)	4.644	0.461
Private job	45	15(33.3%)	30(66.7%)		
Migrant worker	28	6(21.4%)	22(78.6%)		
Business	60	14(23.3%)	46(76.7%)		
Agriculture	143	30(21%)	113(79%)		
Waged based work	11	2(18.2%)	9(81.8%)		
Mother's occupation(n=325)	12	2(16.7%)	10(83.3%)	1.893	0.595
Job/Service	20	8(24.2%)	15(75%)		
Business	1	11(26.83%)	0(0%)		
Agriculture	41	41(20.10%)	30(73.2%)		
Wage	204	13(27.66%)	163(79.9%)		

Table 7

Relation of Parental Variables with Drug Use

Parental characteristics	n	Drug user	Non user	χ^2 (CI)	p
Father's Educational level(n=315)					
Illiterate	62	0(0%)	62(100%)	4.948	0.293
Literate	90	4(4.4%)	86(95.6%)		
Primary	63	3(4.76%)	60(95.23%)		
Secondary	35	3(8.57%)	32(91.43%)		
SLC or above	65	3(4.61%)	62(95.38%)		
Mother's Educational level(n=325)					
Illiterate	120	3(2.5%)	117(97.5%)	2.837	0.585
Literate	112	6(5.35%)	106(94.64%)		
Primary	38	2(5.26%)	36(94.73%)		
Secondary	33	2(6.06%)	31(93.94%)		
SLC or above	22	0(0%)	22(100%)		
Father's occupation(n=316)					
Government job	29	2(6.90%)	27(93.10%)	3.735	0.588
Private job	45	2(4.44%)	43(95.56%)		
Migrant worker	28	2(7.14%)	27(92.86%)		
Business	60	4(6.67%)	56(93.33%)		
Agriculture	143	3(2.30%)	140(97.90%)		
Waged based work	11	0(0%)	11(100%)		
Mother's occupation(n=325)					
Job/Service	33	1(3.03%)	32(96.97%)	5.206	0.157
Business	41	4(9.76%)	37(90.24%)		
Agriculture	204	5(2.45%)	30(14.70%)		
Wage	47	2(4.25%)	45(95.74%)		

Table 8

Relation of Parental Variables with Risky Sexual Behavior

Parental characteristics	n	Yes	No	χ^2 (CI)	P
Father's Educational level(n=315)					
Illiterate	62	22(35.5%)	40(64.5%)	9.933	0.04
literate	90	18(20%)	72(80%)		
Primary	63	10(15.9%)	53(84%)		
Secondary	35	8(22.9%)	27(77.1%)		
SLC or above	65	10(15.4%)	55(84.6%)		
Mother's Educational level(n=325)					
Illiterate	120	35(29.2%)	85(70.8%)	5.999	0.19
literate	112	18(16.1%)	94(83.9%)		
Primary	38	8(21.1%)	30(78.9%)		
Secondary	30	6(20%)	24(80%)		
SLC or above	25	5(20%)	20(80%)		
Father's occupation(n=316)					
Government job	29	5(17.2%)	24(82.8%)	1.811	0.875
Private job	45	10(22.2%)	35(77.8%)		
Migrant worker	28	6(21.4%)	22(78.6%)		
Business	60	10(16.7%)	50(83.3%)		
Agriculture	143	34(23.8%)	109(76.2%)		
Waged based work	11	3(27.3%)	8(72.7%)		
Mother's occupation(n=325)					
	33	3(9.09%)	30(90.90%)	6.801	0.079
	41	7(17.07%)	34(82.92%)		
	204	54(26.47%)	150(73.52%)		
	47	8(17.02%)	39(82.98%)		

Table 9

Relationship between Parental Interaction with Smoking (n=341)

Interaction with parents	n	Smoker	Non smoker	χ^2	p
Relationship with parents					
Very bad	26	11(42.3%)	15(57.7%)	48.746	<0.001
Bad	16	12(75%)	4(25%)		
Just Okay	26	5(19.2%)	21(80.8%)		
Good	49	10(20.4%)	39(79.6%)		
Very good	224	27(12.1%)	197(87.9%)		
Communication with parents					
Very less	35	24(68.6%)	11(31.4%)	116.963	<0.001
Less	39	22(56.4%)	17(43.6%)		
Just okay	46	5(10.9%)	41(89.1%)		
Much	97	8(8.2%)	89(91.8%)		
Very much	125	6(8.2%)	119(95.2%)		
Parents' monitoring					
Very less	23	11(47.8%)	12(52.2%)	94.174	<0.001
Less	53	32(60.4%)	21(39.6%)		
Just okay	38	6(15.8%)	32(84.2%)		
Much	76	9(11.8%)	67(88.2%)		
Very much	151	7(4.6%)	144(95.4%)		

Table 10

Relationship between Parental Interaction with Alcohol (n=341)

Interaction with parents	n	Alcohol user	Non user	χ^2	p
Relationship with parents					
Very bad	26	10(38.5%)	16(61.5%)	10.152	0.038
Bad	16	6(37.5%)	10(62.5%)		
Just Okay	26	3(11.5%)	23(88.5%)		
Good	49	14(28.6%)	35(71.4%)		
Very good	224	43(19.2%)	181(80.8%)		
Communication with parents					
Very less	35	16(45.7%)	19(54.3%)	48.524	<0.001
Less	39	22(56.4%)	17(43.6%)		
Just okay	46	9(19.6%)	37(80.4%)		
Much	97	13(13.4%)	84(86.6%)		
Very much	125	16(12.8%)	109(87.2%)		
Parents' monitoring					
Very less	23	7(30.4%)	16(69.6%)	74.061	<0.001
Less	53	35(66%)	18(34%)		
Just okay	38	7(18.4%)	31(81.6%)		
Much	76	8(10.5%)	68(89.5%)		
Very much	151	19(12.6%)	132(87.4%)		

Table 11

Relationship between Parental Interaction with Drug Use

Interaction with parents	n	Drug user	Non user	χ^2	p
Relationship with parents					
Good	300	10(3.5%)	290(96.7%)	1.462	0.227
Bad	42	3(7.1%)	39(92.9%)		
Communication with parents					
Much	268	4(1.5%)	264(98.5%)	18.053	<0.001
Less	74	9(12.2%)	65(87.8%)		
Parents' monitoring					
Much	266	5(1.9%)	261(98.1%)	12.086	0.001
Less	76	8(10.5%)	68(89.5%)		

Table 12

Relationship between Parental Interaction with Risky Sexual Behavior

Interaction with parents	n	Yes	No	χ^2	p
Relationship with parents					
Very bad	26	6(23.1%)	20(76.9%)	19.104	0.001
Bad	16	10(62.5%)	6(37.5%)		
Just Okay	26	4(15.4%)	22(84.6%)		
Good	49	13(26.5%)	36(73.5%)		
Very good	224	40(17.9%)	184(82.1%)		
Communication with parents					
Very less	35	12(34.3%)	23(65.7%)	13.716	0.008
Less	39	14(35.9%)	25(64.1%)		
Just okay	46	12(26.1%)	34(73.9%)		
Much	97	13(13.4%)	84(86.6%)		
Very much	125	22(17.6%)	103(82.4%)		
Parents' monitoring					
Very less	23	9(39.1%)	14(60.9%)	13.464	0.009
Less	53	18(34%)	35(66%)		
Just okay	38	8(21.1%)	30(78.9%)		
Much	76	16(21.1%)	60(78.9%)		
Very much	151	22(14.6%)	129(85.4%)		

Table 13

Relationship between Family Variables and Smoking (n=342)

Family characteristics	N	Smoker	Non smoker	χ^2	P
Types of family(n=341)				0.659	0.417
Single	204	36(17.6%)	168(82.4%)		
Joint	137	29(21.2%)	108(78.8%)		
Family size					
2-5	156	25(16.02%)	131(83.97%)	1.948	.378
6-9	144	28(19.44%)	116(80.56%)		
<15	26	7(26.92%)	19(7.31%)		
Family income source				5.918	0.116
Agriculture	192	33(17.2%)	159(82.8%)		
Business	90	24(26.7%)	66(73.3%)		
Job/Service/wage	57	8(13.33%)	52(86.66)		
Income per month(NRs)					
Below 10000	90	12(13.3%)	78(86.7%)	6.574	0.254
10001 to 20000	117	20(17.1%)	97(82.9%)		
20001 to 30000	68	17(25%)	51(75%)		
300001 to 40000	32	9(28.1%)	23(71.9%)		
400001 to 50000	19	5(26.3%)	14(73.7%)		
Above 50000	16	2(12.5%)	14(87.5%)		

Table 14

Relationship between Family Variables and Alcohol

Family characteristics	n	Alcohol user	Non user	χ^2	p
Types of family(n=341)					
Single	204	48(23.5%)	156(76.5%)	0.698	0.404
Joint	137	27(19.7%)	110(80.3%)		
Family size(n=342)					
2-5	156	40(25.64)	116(74.36%)	3.129	.209
6-9	144	25(17.36%)	119(82.64%)		
<15	26	5(19.23%)	21(80.77%)		
Family income source(n=342)					
Agriculture	192	39(20.3%)	153(79.7%)	2.302	0.512
Business	90	24(26.7%)	66(73.3%)		
Job/Service/wage	60	13(21.67%)	47(78.33%)		
Income per month(NRs)(n=342)					
Below 10000	90	15(16.7%)	75(83.3%)	4.110	0.534
10001 to 20000	117	31(26.5%)	86(73.5%)		
20001 to 30000	68	14(20.6%)	54(79.4%)		
300001 to 40000	32	6(18.8%)	26(81.3%)		
400001 to 50000	19	5(26.3%)	14(73.7%)		
Above 50000	16	5(31.3%)	11(68.8%)		

Table 15

Relationship between Family Variables and Drug Use

Family characteristics	n	Alcohol user	Non user	χ^2	p
Types of family(n=341)					
Single	204	7(3.4%)	197(96.6%)	0.201	0.654
Joint	137	6(4.4%)	131(95.6%)		
Family size(n=342)					
2-5	156	7(4.49%)	149(95.51%)	.619	.734
6-9	144	4(2.78%)	140(97.22%)		
<15	26	2(7.69%)	24(92.31%)		
Family income source(n=342)					
Agriculture	192	4(2.08%)	188(98.95%)	13.378	<.001
Business	90	9(10%)	81(90%)		
Job/Service/wage	60	0(0%)	60(100%)		
Income per month in NRs(n=342)					
Below 10000	90	2(2.2%)	88(97.78%)	9.498	.091
10001 to 20000	117	3(2.56%)	114(97.44%)		
20001 to 30000	68	2(2.94%)	6697.06%)		
300001 to 40000	32	2(6.25%)	30(93.75%)		
400001 to 50000	19	3(15.79%)	16(84.21%)		
Above 50000	16	1(6.25%)	15(93.75%)		

Table 16

Relationship between Family Variables and RSB

Family characteristics	n	Alcohol user	Non user	χ^2	p
Types of family(n=341)					
Single	204	45(22.1%)	159(77.9%)	0.272	0.602
Joint	137	27(19.7%)	110(80.3%)		
Family size(n=342)					
2-5	156	31(19.87%)	125(80.13%)	.144	.931
6-9	144	29(20.14%)	115(79.86%)		
<15	26	6(23.08%)	20(76.92%)		
Family income source(n=342)					
Agriculture	192	49(25.52%)	143(74.48%)	4.970	.083
Business	90	16(17.78%)	74(82.22%)		
Job/Service/wage	60	8(13.33%)	52(86.67)		
Income per month (NRs)(n=342)					
Below 10000	90	21(23.33%)	69(76.67%)	3.318	.651
10001 to 20000	117	24(20.51%)	93(79.49%)		
20001 to 30000	68	17(25%)	51(75%)		
300001 to 40000	32	4(12.5%)	28(87.7%)		
400001 to 50000	19	5(26.32%)	14(73.68%)		
Above 50000	16	2(12.5%)	14(87.5%)		

Table 17

Relation between Respondent Health Risk Behavior Status and Family Members' Health Risk Behavior Status

Risk behavior of family members	n	Smoker	Non smoker	χ^2	P
Father's smoking behavior (n=317)					
Yes	80	16(20%)	64(80%)	0.039	0.843
No	237	45(19%)	192(81%)		
Mother's smoking behavior(n=325)					
Yes	47	9(19.1%)	38(80.9%)	0.002	0.965
No	278	54(19.4%)	224(80.6%)		
Brother's smoking behavior(n=313)					
Yes	23	9(39.1%)	14(60.9%%)	6.384	0.012
No	278	49(17.6%)	229(82.4%)		
Sister's smoking behavior(n=271)					
Yes	2	0(0%)	2(100%)	0.456	0.500
No	269	50(18.6%)	219(81.4%)		

Table 18

Relation between Family Members' Health Risk Behavior Status and Alcohol

Risk behavior of family members	n	Alcohol user	Non user	χ^2	P
Father's alcohol use					
Yes	54	19(35.2%)	35(64.8%)	5.768	0.016
No	263	53(20.2%)	210(79.8%)		
Mother's alcohol use					
Yes	22	13(59.1%)	9(40.9%)	18.179	<0.001
No	303	60(19.8%)	243(80.2%)		
Brother's alcohol use					
Yes	14	4(28.6%)	10(71.4%)	0.404	0.525
No	299	64(21.4%)	235(78.6%)		
Sister's alcohol use					
Yes	1	1(100%)	0(0%)	3.607	0.058
No	270	58(21.5%)	212(78.5%)		

Table 19

Relation between Family Members' Health Risk Behavior Status and Drug Use

Risk behavior of family members	n	Drug user	Non-drug user	χ^2	P
Father's health risk behavior (n=317)					
Yes	147	7(4.8%)	140(95.2%)	0.718	0.397
No	170	592.9%)	165(97.1%)		
Mother's health risk behavior(n=325)					
Yes	67	6(9%)	6(91%)	6.574	0.020

No	258	6(2.3%0	252(97.7%)		
Brother's health risk behavior (n=313)					
Yes	35	2(5.7%)	33(94.3%)	0.378	0.539
No	278	10(3.6%)	268(96.4%)		
Sister's health risk behavior(n=271)					
Yes	4	0(0%)	4(100%)	0.156	0.693
No	267	10(3.7%)	257(96.3%)		

Table 20

Relation between Involvement of Family Members in HRB and Risky Sexual Behavior of Students

Risk behavior of family members	n	Yes	No	χ^2	p
Father's health risk behavior (n=317)					
Yes	147	39(26.5%)	108(73.5%)	3.653	0.056
No	170	30(17.6%)	140(82.4%)		
Mother’s health risk behavior					
Yes	67	21(31.3%)	46(68.7%)	4.133	0.042
No	258	51(19.8%)	207(80.2%)		
Brother's health risk behavior					
Yes	35	13(37.1%)	22((62.9%)	4.698	0.030
No	278	58(20.9%)	220(79.1%)		
Sister's health risk behavior(n=271)					
Yes	4	1(25%)	3(75%)	.0380	0.845
No	267	56(21%)	211(79%)		

Table 21

Relation between Family Violence and Smoking

Family violence	n	Smoker	Non smoker	χ^2 (CI)	P
Violence in Family					
Yes	160	46(28.8%)	114(71.3%)	18.545	<0.001
No	182	19(10.4%)	163(89.6%)		
Father beats mother					
Yes	51	9(17.6%)	42(82.4%)	0.072	0.789
No	291	56(19.2%)	235(80.8%)		
Mother beats father					
Yes	34	10(29.4%)	24(70.6%)	2.656	0.103
No	308.0%	55(17.9%)	253(82.1%)		

Table 22

Relation between Family Violence and Alcohol Use

Family violence	n	Alcohol user	Non user	χ^2	P
Violence in Family					
Yes	160	51(31.9%)	109(68.1%)	16.208	<0.001
No	142	25(13.7%)	157(86.3%)		
Father beats mother					
Yes	51	15(29.4%)	36(70.6%)	1.793	0.125
No	291	6(21%)	230(79%)		
Mother beats father					
Yes	34	10(29.4%)	24(70.6%)	1.129	0.288
No	308	66(21.4%)	242(78.6%)		

Table 23

Relation between Family Violence and Drug Use

Family violence	n	Drug user	Non-drug user	χ^2	P
Violence in Family					
Yes	160	11(6.9%)	149(93.1%)	7.769	.005
No	182	2(1.1%)	180(98.9%)		
Father beats mother					
Yes	51	3(5.9%)	48(94.1%)	0.710	0.399
No	291	10(3.4%)	281(96.6%)		
Mother beats father					
Yes	34	3(8.8%)	31(91.2%)	2.604	0.107
No	308	10(3.2%)	298(96.8%)		

Table 24
Relation between Family Violence and Risky Sexual Behavior

Family violence	n	Yes	No	χ^2	p
Violence in Family					
Yes	160	42(26.3%)	118(73.8%)	4.308	0.038
No	182	31(17%)	151(83%)		
Father beats mother					
Yes	51	15(29.4%)	36(70.6%)	2.323	0.127
No	291	58(19.9%)	233(80.1%0		
Mother beats father					
Yes	34	12(35.3%)	22(64.7%)	4.375	0.036
No	308	61(19.8%)	247(80.2%)		

Table 25

Relation of Teacher-Student's Relationship to Smoking (n=342)

Interaction with teachers	n	Smoker	Non smoker	χ^2	P
Teacher monitoring					
Yes	305	58(19%)	247(81%)	0.000	0.989
No	37	7(18.9%)	30(81.1%)		
Time provided by teacher					
Much	298	57(19.1%)	241(80.9%)	0.022	0.881
Less	44	8(18.2%)	36(81.8%)		
Compel to follow rule					
Yes	306	58(19%)	248(81%)	0.005	0.943
No	30	7(19.4%)	29(80.6%)		

Table 26

Relation of Teacher-Student's Relationship to Alcohol Use (n=342)

Interaction with teachers	n	Alcohol user	Non user	χ^2	p
Teacher monitoring					
Yes	305	67(22%)	238(78%)	0.106	0.745
No	37	9(24.3%)	28(75.7%)		
Time provided by teacher					
Much	298	66(22.1%)	232(77.9%)	.007	0.931
Less	44	10(22.7%)	34(77.3%)		
Compel to follow rule					
Yes	306	65(21.2%)	241(78.8%)	1.617	0.204
No	25	11(30.6%)	25(69.4%)		

Table 27

Relation of Teacher-Student's Relationship to Drug Use (n=342)

Interaction with teachers	n	Drug user	Non user	χ^2	P
Teacher monitoring					
Yes	305	12(3.9%)	293(96.1%)	0.137	0.580
No	36	1(2.7%)	36(97.3%)		
Time provided by teacher					
Much	298	12(4%)	286(96%)	0.323	0.570
Less	43	1(2.3%)	43(97.7%)		
Compel to follow rule					
Yes	306	10(3.3%)	296(96.7%)	2.260	0.133
No	36	3(8.3%)	33(91.7%)		

Table 28

Relation of Teacher-Student's Relationship to Risky Sexual Activity (n=342)

Interaction with teachers	n	Yes	No	χ^2	p
Teacher monitoring	305	65(21.3%)	240(78.7%)	.002	0.965
Yes	29	8(21.6%)	29(78.4%)		
No					
Time provided by teacher					
Much	298	64(21%)	234(78.4%)	.024	0.877
Less	44	9(20%)	35(79.5%)		
Compel to follow rule					
Yes	306	66(21.6%)	240(78.4%)	0.087	1.00
No	36	7(19.4%)	29(80.6%)		

Table 29

Relation between School Characteristics and Smoking

School Rule and regulation	N	Smoker	Non smoker	χ^2	p
Strictness of school					
Yes	300	55(18.3%)	245(81.7%)	0.718	0.397
No	42	10(23.8%)	32(76.2%)		
Punishment for HRB					
Yes	243	45(18.5%	198(81.5%)	0.781	0.397
No	79	20(20.2%)	79(79.8%)		
Students likes school					
Yes	328	61(18.6%)	267(81.4%)	0.868	0.352
No	14	4(28.6%)	10(71.4%)		

Table 30

Relation between School Characteristics and Alcohol Use

School Rule and regulation	N	Alcohol user	Non user	χ^2	P
Strictness of school					
Yes	300	65(21.7%)	235(78.3%)	0436	0.509
No	42	11(26.2%)	31(73.8%)		
Punishment for HRB					
Yes	306	65(21.2%)	241(78.8%)	1.617	0.204
No	36	11(30.6%)	25(69.4%)		
Students likes school					
Yes	328	73(23.3%)	255(77.7%)	0.005	0.942
No	14	3(21.4%)	11(78.6%)		

Table 31

Relation between School Characteristics and Drug Use

School Rule and regulation	N	Alcohol user	Alcohol non user	χ^2	P
Strictness of school	300	11(3.7%)	289(96.3%)	0.121	0.728
Yes	42	2(4.8%)	40(95.2%		
No					
Punishment for HRB					
Yes	243	9(3.7%)	234(96.3%)	0.022	0.883
No	99	4(4%)	95(96%)		
Students likes school					
Yes	328	12(3.7%)	316(96.3%)	0.446	0.504
No	24	1(7.1%)	13(92.9%)		

Table 32

Relation between School Characteristics and Risky Sexual Activity

School Rule and regulation	N	Yes	No	χ^2	p
Strictness of school					
yes	300	65(21.7%)	235(78.3%)	0.151	0.698
No	42	8(19%)	34(81%)		
Punishment for HRB					
Yes	243	48(19.8%)	195(80.2%)	1.267	0.260
No	99	25(25.3%)	74(74.7%)		
School connectedness					
Yes	328	72(22%)	256(78%)	1.754	0.185
No	14	1(7.1%)	13(92.9%)		

Table 33

Relation between Parent-School Communication and Smoking

Parents-school interaction	n	Smoker	Non smoker	χ^2	p
School informs parents on HRB					
Yes	223	35(15.7%)	188(84.3%)	4.564	0.033
No	119	30(25.2%)	89(74.8%)		
School informs parents on class bunk					
Yes	209	30(14.4%)	179(85.6%)	7.555	0.06
No	133	35(26.3%)	98(73.7%)		
School informs parents about academic achievement					
Yes	248	41(16.5%)	207(83.5%)	3.586	0.054
No	94	24(25.5%)	70(74.5%)		

Table 34

Relation between Parent-School Communication and Alcohol Use

Parents-school interaction	n	Alcohol user	Non user	χ^2	p
School informs parents on HRB					
Yes	223	47(21.1%)	176(78.9%)	0.487	0.485
No	119	29(24.4%)	90(75.6%)		
School informs parents on class bunk					
Yes	209	43(20.6%)	166(79.4%)	0.845	0.358
No	133	33(24.8%)	100(75.2%)		
School informs parents about academic achievement					
Yes	248	53(21.4%)	195(78.6%)	0.378	0.539
No	94	23(24.5%)	71(75.5%)		

Table 35

Relation between Parent-School Communication and Drug Use

Parents-school interaction	n	Drug user	Non user	χ^2 (CI)	p
School informs parents on HRB					
Yes	223	6(2.7%)	217(97.3%)	2.16	0.14
No	119	7(5.9%)	112(94.1%)		
School informs parents on class bunk					
Yes	209	6(2.9%)	203(97%)	1.27	0.26
No	133	7(5.3%)	126(94.7%)		
School informs parents about academic achievement					
Yes	248	8(3.2%)	240(96.8%)	0.82	0.37
No	94	5(5.3%)	89(94.7%)		

Table 36

Relation between Parent-School Communication and Risky Sexual Behavior

Parents-school interaction	n	Yes	No	χ^2 (CI)	p
School informs parents on HRB					
Yes	223	41(18.4%)	182(81.6%)	3.34	0.07
No	119	32(26.9%)	87(73.1%)		
School informs parents on class bunk					
Yes	209	37(17.7%)	172(82.3%)	4.25	0.04
No	133	36(27.1%)	97(72.9%)		
School informs parents about academic achievement					
Yes	248	44(17.7%)	204(82.3%)	6.98	0.01
No	65	29(30.9%)	65(69.1%)		

Table 37

Peer Pressure on Smoking

Peer pressure	n	Smoker	Non Smoker	χ^2	p
Group involvement					
Yes	297	58(19.5%)	239(80.5%)	0.401	0.527
No	45	7(15.6%)	38(84.4%		
Peer behave					
Good	328	62(18.9%)	266(81.1%)	0.056	0.813
Bad	14	3(21.4%)	11(78.6%)		
Best friends smoke					
Yes	66	28(42.4%)	38(57.6%)	29.136	<0.001
No	276	37(13.4%)	239(86.6%)		
Peer pressure					
Yes	69	31(44.9%)	38(55.1%)	37.731	<0.001
No	273	34(12.5%)	239(87.5%)		

Table 38

Relation of Peer Pressure on Alcohol Use

Peer pressure	n	Alcohol user	Non user	χ^2 (CI)	p
Group involvement					
Yes	297	66(22.2%)	231(77.8%)	0.000	1.000
No	35	10(22.2%)	35(77.8%		
Peer behave					
Good	328	73(22.3%)	255(77.7%)	.005	0.942
Bad	14	3(21.4%)	11(78.6%)		
Best friend alcohol use					
Yes	22	10(45.5%)	12(54.5%)	7.342	0.007
No	320	66(20.6%)	254(79.4%)		
Peer Pressure					
Yes	69	33(47.8%)	36(52.2%)	32.785	<0.001
No	273	43(15.8%)	230(84.2%)		

Table 39

Relation of Peer Pressure on Drug Use

Peer pressure	n	Drug user	Non user	χ^2 (CI)	p
Group involvement					
Yes	297	10(3.4%)	287(96.6%)	1.164	0.281
No	42	3(6.7%)	42(93.3%)		
Peer behave					
Good	328	13(4%)	315(96%)	0.577	0.448
Bad	14	0(0%)	14(100%)		
Best friends Drug use					
Yes	46	7(15.2%)	39(84.8%)	18.943	<0.001
No	296	6(2%)	290(98%)		
Peer pressure for Drug					
Yes	73	5(6.8%)	68(93.2%)	2.358	0.125
No	269	8(3%)	261(97%)		

Table 40

Relation of Peer Pressure One Risky Sexual Behavior

Peer pressure	n	Yes	No	χ^2 (CI)	p
Group involvement					
Yes	297	64(21.5%)	233(78.5%)	0.056	0.813
No	45	9(20%)	36(80%)		
Peer behave					
Good	328	72(22%)	256(78%)	1.754	0.185
Bad	14	(7.1%)	13(92.9%)		
Peers' HRB					
Yes	69	29(42%)	40(58%)	22.027	<0.001
No	273	44(16.1%)	229(83.9%)		
Best friends’ with CSW					
Yes	47	22(46.8%)	25(53.2%)	21.043	<0.001
No	295	51(17.3%)	244(82.7%)		
Peer pressure for dating					
Yes	132	39(29.5%)	93(70.5%)	8.611	0.003
No	210	34(16.2%)	176(83.8%)		
Peer pressure for sexual intercourse					
Yes	104	42(40.4%)	62(59.6%)	32.268	<0.001
No	238	31(13%)	207(87%)		
Masturbation					
Yes	89	44(49.44%)	45(50.56%)	56.556	<0.001
No	253	29(11.46%)	144(56.91%)		
Watch adult movie					

Yes	148	47(31.76%)	101(68.24%)	16.846	<0.001
No	194	26(13.40%)	168(86.60%)		
Best friend watch adult movie					
Yes	177	56(31.64%)	121(68.36%)	23.153	<0.001
No	165	17(10.30%)	148(89.70%)		

Table 41

Relation between Neighbor Behavior and Smoking

Neighbor pressure	N	Smoker	Non smoker	χ^2 (CI)	p
Best friend in neighbor					
Yes	301	59(19.6%)	242(80.4%)	0.485	0.486
No	40	6(15%)	34(85%)		
Help from neighbor					
Yes	317	63(19.9%)	254(80.1%)	1.926	0.165
No	24	2(8.3%)	22(91.7%)		
Neighbor monitoring					
Yes	287	58(20.2%)	229(79.8%)	1.678	0.195
No	55	7(12.7%)	48(87.3%)		
Neighbor informs parents on HRB					
Yes	270	48(17.8%)	222(82.2%)	1.257	0.262
No	72	17(23.6%)	55(76.4%)		
Neighbor pressure for HRB					
Yes	73	25(34.2%)	48(65.8%)	14.004	<0.001
No	269	40(14.9%)	229(85.1%)		

Table 42

Relation between Neighbor Behavior and Alcohol Use

Neighbor pressure	n	Alcohol user	Non user	χ^2 (CI)	p
Best friend in neighbor					
Yes	301	62(20.6%)	239(79.4%)	4.228	0.040
No	40	14(35%)	26(65%)		
Help from neighbor					
Yes	317	67(21.1%)	250(78.9%)	3.450	0.063
No	24	9(37.5%)	15(62.5%)		
Neighbor monitoring					
Yes	287	58(20.2%)	229(79.8%)	4.185	0.041
No	55	18(32.7%)	37(67.3%)		
Neighbor informs parents on HRB					
Yes	206	64(23.7%)	206(76.3%)	1.629	0.202
No	60	12(16.7%)	60(83.3%)		
Neighbor pressure for HRB					
Yes	73	24(32.9%)	49(67.1%)	6.096	0.014
No	269	52(19.3%)	217(80.7%)		

Table 43

Relation between Neighbor Behavior and Drug Use

Neighbor pressure	n	Drug user	Non user	χ^2 (CI)	p
Best friend in neighbor					
Yes	301	10(3.3%)	291(96.7%)	1.681	0.195
No	40	3(7.5%)	37(92.5%)		
Help from neighbor					
Yes	317	11(3.5%)	306(96.5%)	1.439	0.230
No	24	2(8.3%)	22(91.7%)		
Neighbor monitoring					
Yes	287	11(3.8%)	276(96.2%)	0.005	0.944
No	55	2(3.6%)	53(96.4%)		
Neighbor informs parents on HRB					
Yes	270	9(3.3%)	261(96.7%)	0.768	0.381
No	72	4(5.6%)	68(94.4%)		
Neighbor pressure for HRB					
Yes	73	5(6.8%)	68(93.2%)	2.358	0.125
No	269	8(3%)	261(97%)		

Table 44

Relationship between Neighbor Behavior and Risky Sexual Behavior

Neighbor pressure	n	Yes	No	χ^2 (CI)	p
Best friend in neighbor					
Yes	301	65(21.6%)	236(78.4%)	0.053	0.502
No	40	8(20%)	32(80%)		
Help from neighbor					
Yes	317	67(21.1%)	250(78.9%)	0.198	0.656
No	24	6(25%)	18(75%)		
Neighbor monitoring					
Yes	287	65(22.6%)	222(77.4%)	1.805	0.179
No	55	8(14.5%)	47(85.5%)		
Neighbor informs parents on HRB					
Yes	270	59(21.9%)	211(78.1%)	0.196	0.658
No	72	14(19.4%)	58(80.6%)		
Neighbor pressure for HRB					
Yes	73	26(35.6%)	47(64.4%)	11.259	<0.001
No	269	47(17.5%)	222(82.5%)		

Table 45

Relation between Media and Communication Channel and Smoking

Media type	n	Smoker	Non Smoker	χ^2 (CI)	p
Newspaper					
Yes	287	49(17.1%)	238(82.9%)	4.33	0.037
No	87	16(29.1%)	39(70.9%)		
Radio					
Yes	264	46(17.4%)	218(82.6%)	1.881	0.17
No	78	19(24.4%)	59(75.6%)		
Television					
Yes	303	56(18.5%)	247(81.5%)	0.474	0.491
No	39	9(23.1%)	30(76.9%)		
Mobile phone possession					
Yes	323	61(18.9%)	262(81.1%)	0.123	0.726
No	18	4(22.2%)	14(77.8%)		
Use of social media					
Yes	309	62(20.1%)	247(79.9%)	1.778	0.182
No	23	2(8.7%)	21(91.3%)		
Use of Facebook					
Yes	302	60(19.9%)	242(80.1%)	0.749	0.387
No	26	4(13.3%)	26(86.7%)		

Table 46

Relation between Media Exposure and Communication Channel and Alcohol Use

Media type	n	Alcohol user	Alcohol non user	χ^2 (CI)	p
Newspaper					
Yes	287	64(22.3%)	223(77.7%)	.006	0.937
No	55	12(21.8%)	43(78.2%)		
Radio					
Yes	264	50(18.9%)	214(81.1%)	7.218	0.007
No	78	26(33.3%)	52(66.1%)		
Television					
Yes	303	67(22.1%)	236(77.9%)	0.019	0.892
No	39	9(23.1%)	30(76.9%)		
Mobile phone possession					
Yes	323	71(22%)	252(78%)	0.331	0.565
No	18	5(27.8%)	13(72.2%)		
Use of social media					
Yes	309	71(23%)	238(77%)	0.019	0.892
No	23	5(21.7%)	18(78.3%)		
Use of Facebook					
Yes	302	71(23.5)	231(76.5%)	0.724	0.395
No	30	5(16.7%)	25(83.3%)		

Table 47

Relation between Media Exposure and Drug Use

Media type	n	Drug user	Non user	χ^2 (CI)	p
Newspaper					
Yes	287	8(2.8%)	297(97.2%)	5.015	0.025
No	55	5(9.1%)	50(90.9%)		
Radio					
Yes	264	7(2.7%)	257(97.3%)	4.184	0.051
No	78	6(7.7%)	72(92.3%)		
Television					
Yes	303	10(3.3%)	293(96.7%)	1.823	0.175
No	39	3(7.7%)	36(92.3%)		
Mobile phone possession					
Yes	323	12(3.7%)	311(96.3%)	0.157	0.691
No	18	1(5.6%)	17(94.4%)		
Use of social media					
Yes	309	12(3.9%)	297(96.1%)	0.012	0.912
No	23	1(4.3%)	22(95.7%)		
Use of Facebook					
Yes	302	12(4%)	290(96)	0.030	0.863
No	30	29(96.7%)	29(96.7)		

Table 48

Relationship between Media and Risky Sex Behavior

Media type	n	Yes	No	χ^2 (CI)	p
Newspaper					
Yes	287	58(20.2%)	229(79.8%)	1.372	0.242
No	55	15(27.3%)	40(72.7%)		
Radio					
Yes	264	57(21.6%)	207(78.5%)	0.042	0.838
No	78	16(20.5%)	62(79.5%)		
Television					
Yes	303	62(20.4%)	241(79.5%)	1.234	0.299
No	39	11(28.2%)	28(71.8%)		
Use of social media					
Yes	309	68(22%)	241(78%)	1.023	0.312
No	23	3(13%)	20(87%)		
Use of Facebook					
Yes	302	64(21.2%)	238(78.8%)	0.074	0.785
No	30	7(23.3%)	23(76.7%)		

Table 49A

Variables in the Equation

Predictor	B	S.E.	Wald	Sig.	Exp (B)	95% C.I.for EXP(B) Lower	Upper
Cigarette smoking	1.187	0.307	14.924	0.000	3.277	1.795	5.984
Risky sexual behavior	0.826	0.305	7.333	0.007	2.285	1.256	4.155
Constant	-1.754	.177	97.976	0.000	0.173		

Table 49 B

Relation between Use of Internet Use and Risky Sexual Behavior

Media type	n	Yes	No	χ^2 (CI)	P
Use of internet					
Yes	197	48(24.4%)	149(75.6%)	2.525	0.112
No	145	25(17.2%)	120(82.8%)		
Use of internet for entertainment					
Yes	122	37(30.3%)	85(69.7%)	8.612	0.003
No	211	35(16.6%)	176(83.4%)		
Best friend watch adult movie					
Yes	177	56(31.6%)	121(68.4%)	23.153	<0.001
No	165	17(10.3%)	148(89.7%)		
Student watch adult movie					
Yes	148	47(31.8%)	101(68.2%)	16.846	<0.001
No	194	26(13.4%)	168(86.6%)		
Student arousal after watching adult movie					
Yes	118	51(43.2%)	67(56.8%)	51.351	<0.001
No	224	22(9.8%)	202(90.2%)		

Annex II: Sample Population

Table 50

Sampling of Students in Each Public School of Kathmandu Metropolitan City

SN	School	Population	Sample size
1	School 1	287	42
2	School 2	119	17
3	School 3	157	23
4	School 4	32	5
5	School 5	58	8
6	School 6	83	12
7	School 7	110	16
8	School 8	19	3
9	School 9	160	23
10	School 10	100	14
11	School 11	60	9
12	School 12	121	18
13	School 13	201	29
14	School 14	460	67
15	School 15	29	4
16	School 16	14	2
17	School 17	199	29
18	School 18	143	21
	Total	2352	342

Table 51

Student Migration by District

SN	District	Number of students	Percentage
1	Achham	5	1.5
2	Arghakhachi	3	.9
3	Baglung	1	.3
4	Baitadi	1	.3
5	Bajhang	2	.6
6	Bajura	2	.6
7	Banke	1	.3
8	Bara	1	.3
9	Bardiya	2	.6
10	Bhojpur	1	.3
11	Chitwan	2	.6
12	Dailekh	1	.3
13	Darchula	1	.3
14	Dhading	26	7.6
15	Dhanusha	1	.3
16	Dolakha	19	5.6

17	Doti	1	.3
18	Gorkha	13	3.8
19	Gulmi	5	1.5
20	Humla	2	.6
21	Ilam	1	.3
22	Jumla	2	.6
23	Kailali	2	.6
24	Kalikot	1	.3
25	Kapilbastu	2	.6
26	Kathmandu	43	12.6
27	Kavre	31	9.1
28	Khotang	3	.9
29	Lalitpur	5	1.5
30	Lamjung	2	.6
31	Mahottari	1	.3
32	Makawanpur	7	2.0
33	Morang	2	.6
34	Myagdi	1	.3
35	Nawalparashi	1	.3
36	Nawalparasi	2	.6
37	Nuwakot	20	5.8
38	Okhaldhunga	17	5.0
39	Palpa	1	.3
40	Panchthar	1	.3
41	Parsa	3	.9
42	Ramechhap	27	7.9
43	Rasuwa	2	.6
44	Rautahat	1	.3
45	Rukum	1	.3
46	Rupandehi	1	.3
47	Salyan	2	.6
48	Sangya	1	.3
49	Sankhuwasabha	1	.3
50	Saptari	3	.9
51	Sarlahi	7	2.0
52	Sindhuli	10	2.9
53	Sindhupalchowk	23	6.7
54	Solukhumbu	12	3.5
55	Sunsari	3	.9
56	Syangja	2	.6
57	Tanahu	1	.3
58	Taplejung	2	.6
59	Udayapur	3	.9
60	Udaypur	2	.6
	Total	342	100.0

Annex III: Policies and Strategies

Ministry of Health	
Year	Name of policy/Strategy
1998	National RH strategy ▪ ARSH as one major pillar of the study
2000	National adolescents health and development strategy ▪ Empower adolescents with information and skills to protect themselves ▪ Target health services and conseling for adolescents and youth ▪ Creating safe and supportive enviornment at various level for adolescents and youth
2000	Essential Health Care Service package ▪ Adolescents reproductive health service are a subsets of RH services
2005	National Health Communication Strategy for FP and MCH(2005-10) ▪ Adolescents are target group
2006	National AIDS strategy(2006-2011) ▪ Youth as a target group
2010	National Health Sector Program II (2010-15) ▪ Target to introduce adolescents friendly service into 1000 public health facilities
2011	National Adolescents Sexual and Reproductive Communication strategy (2011-15) ▪ Target to improve adolescents sexual reproductive health through strategic communication at various levels
2018	National Adolescents Health and Developemnt Strategy 2075 ▪ Target to improve health and productivity of adolescent through information, education and youth friendly services
Ministry of Education	
2002	Secondary Education support program School Level education in three levels ▪ Grade 6-8 Lower secondary ▪ Grade 9-10 Secondary ▪ Grade11-12 Higher Secondary level

2007	National Curriculum Framework (MoE&S/GoN, 2007) ▪ General stream in grade 9-12 includes language, science, Mathematics, social studies and local subjects whereas vocational/technical stream includes agriculture, forestry science, medical science and engneering
2016	School Sector Reform Plan (SSRP) 2009-16 ▪ Review and consolidation of the technical and vocational curricula in the secondary level (grade 9-12) ▪ Curriculum review at secondary level
2018	School Sector Development Plan (SSDP) 2016-2023 ▪ Curriculum Review ▪ Teacher's Training

Annex IV: Health Risk Behavior Survey Questionnaire

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A Study on Health Behavior of Higher Secondary Students (HSS) in Kathmandu Metropolitan City

February/March 2017

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		cGo-v' nfpg' xf] ;_==========	
!=!*	!! slffsf] af] 8{ kl/lff s:tf] glthf Nofpg' eof] <	pts[i6 >] 0fL÷distinction - _	cg' lt0f{ - _
		k| yd >] 0fL÷first division - _	kl/lff glbPsf] - _
		l4lto >] 0fL÷second division - _	sDkfd] G6n- _
		t[lto >] 0fL÷third division - _	cGo - _
!=!(	ljBfnonf0{ slt dfl;s z' Ns -fee) a' emfpg' x' G5<	hDdf ?==========k| lt dlxgf	
!=@)	dfl;s z' Ns -fee) sf] s;sf]	Af' af-cfdf - _	

	k} ;fn] ltg' { x' G5 <	cfkm\ g} sdf0n] - _
		5fqj[lt - _
		cGo- v' nfpg' xf] ;_----------
!=@!	tkf0{ sf] !@ sIff ;lsPkl5 s] ug] { of] hgf agfpg' ePsf] 5 <	g] kfndf g} cem k9g] - _
		ljb] zdf pRr lzIff lng] - _
		hfuL/ vfg] ÷Jofkf/ ug] { - _
		k9g] / hflu/÷Jofkf/ b' j} Ps} ;fy ug] { - _
		s' g} of] hgf 5} g - _
		cGo- v' nfpg' xf] ;\ _----------

v08 @ ॥ kfl/jfl/s ljj/0f

@=!	tkf0{ sf] a' jfn] slt cWoog ug' { ePsf] 5 <	j' jf gePsf] - _
		clzlIft - _
		;flf/ dfq - _
		lGfDg dfWolds - _
		dfWolds - _
		P;=Pn=;L - _
		k| df0fkq tx - _
		:gfts tx jf ;f] eGbf dfly - _
@=@	tkf0{ sf] cfdfn] slt cWoog ug' { ePsf] 5 <	cfdf gePsf] - _
		clzlIft - _
		;flf/ dfq - _
		lGfDg dfWolds - _
		dfWolds - _
		P;=Pn=;L - _
		k| df0fkq tx - _
		:gfts tx jf ;f] eGbf dfly - _
@=#	tkf0{ sf] a' af s] sfd ug' { x' G5 <	a' af gePsf] - _
		;/sf/L hflu/ - _
		lglh sfo{ nodf hflu/ - _
		j} b] lzs /f] hufl/ - _
		Jofkf/ - _
		s[lif - _
		cGo - v' nfpg' xf] ;_==========
@=$	tkf0{ sf] cfdf s] sfd ug' { x' G5 <	cfdf gePsf] - _
		;/sf/L hflu/ - _
		lglh sfo{ nodf hflu/ - _
		j} b] lzs /f] hufl/ - _
		Jofkf/ - _
		s[lif - _
		cGo- v' nfpg' xf] ;_==========
@=%	tkf0{ sf] kl/jf/sf] cfDbfgLsf] d' Vo ;| f] t s] xf] nf <	j[Mlif - _
		Jofkf/ - _
		gf] s/L - _
		cGo - v' nfpg' xf] ;\ _==========
@=^	tkf0{ sf] k/Ljf/sf] df;ls cfDbfgL slt 5 <	!),))) ?k} of eGbf sd - _
		!),))) b] lv @),))) ?k} of - _
		@),)) ! b] lv #),))) ?k} of - _
		#),)) ! b] lv $),))) ?k} of - _

		$),,)) ! b] lv %),,))) ?k} of - _
		%),,)) ! eGbf a9L - _
@-&	tkf0{ sf] cfdf-a' afsf] a} jflxs l:ylt s:tf] 5 <	b' j} hgf ;+ u} a;] sf] - _
		cfdf-a' af cnu a;] sf] - _
		kf/kfr' s] ePsf] - _
		cfdf-a' af dWo] Pshgfsf] d[To' e0;s] sf] - _
		b' j} hgfsf] d[To' e0;s] sf- _
@-*	tkf0{ / cfdf-j' jf ljr s:tf] ;DaGw - Relation_ 5 <	Psbd /fd| f] ÷Very good - _
		/fd| f] ÷Good - _
		;fdfGo÷just okay - _
		g/fd| f] ÷Bad- _
		Psbd} g/fd| f÷Very bad- _
@-(	tkf0{ / cfdf-j' jf ljr s' /fsfgL - Communication_ x' G5 <	Psbd w] /} ÷Too much - _
		w] /} ÷Much - _
		;fdfGo÷just okay - _
		Yff] /} ÷Less- _
		Psbd yf] /} ÷Very less- _
@-!)	cfdf-j' jf÷cleefjsn] slQsf] /] vb] v -Monitoring_ ug' { x' G5<	Psbd w] /} ÷Too much - _
		w] /} ÷Much - _
		;fdfGo÷just okay - _
		Yff] /} ÷Less - _
		Psbd yf] /} ÷Very less - _
@-!!	tkf0{ sf] a' afsf] s' g} g;f÷nt- Habit_ 5 <	5} g - _
		r' /f] 6 - _
		v} gL - _
		/S;L - _
		nfu' cf} ifwL - _
@-!@	tkf0{ sf] cffdfsf] s' g} g;f÷nt - Habit_ 5 <	5} g - _
		r' /f] 6 - _
		v} gL - _
		/S;L - _
		nfu' cf} ifwL - _
@-!#	tkf0{ sf] bfh-' ef0{ sf] s' g} g;f÷nt -Habit_ 5 <	5} g - _
		r' /f] 6 - _
		v} gL - _
		/S;L - _
		nfu' cf} ifwL - _
@-!$	tkf0{ sf] lblb-alxgLsf] s' g} g;f÷nt -Habit_ 5 <	5} g - _
		r' /f] 6 - _
		v} gL - _
		/S;L - _

		nfu' cf} ifwL - _
@=!%	tkf0{ sf] kl/jf/df r' /f] 6 vfg' nf0{ s:tf] dflgG5 <	;fdfGo÷Normal - _ g/fd| f] ÷Bad - _ Psbd g/fd| f] ÷Very bad - _
@=!^	tkf0{ sf] kl/jf/df dWokfg ug' { -/S;L vfg' _nf0{ s:tf] dflgG5 <	;fdfGo÷Normal - _ g/fd| f] ÷Bad - _ Psbd g/fd| f] ÷Very bad - _
@=!&	tkf0{ sf] kl/jf/df ljjfx cufl8sf] of} g ;DjGwnf0{ s:tf] dflgG5 <	;fdfGo÷Normal - _ g/fd| f] ÷Bad - _ Psbd g/fd| f] ÷Very bad - _
@=!*	tkf0{ sf] kl/jf/df emu8f x' G5 <	;w} - Always Wf] /} h;f] -Very) slxn] sfxL+ -Sometimes w] /} sd -Rarely slxNo} 5} g -Never
@=!(	s' g} lbg a' afn] cfdfnf0{ s' 6' g' ePsf] 5 <	;w} - Always Wf] /} h;f] -Very) slxn] sfxL+ -Sometimes w] /} sd -Rarely slxNo} 5} g -Never
@=@)	s' g} lbg cfdfn] a' afnf0{ s' 6' g' ePsf] <	;w} - Always Wf] /} h;f] -Very) slxn] sfxL+ -Sometimes w] /} sd -Rarely slxNo} 5} g -Never

v08 #\ ljBfno ;DjGwL ljj/0f

#= !	lzIfs-lzIIfsfx?n] ljBfnodf slQsf] /] vb] v-Monitoring_ ug' { x' G5 <	Psbd w] /} ÷Too much - _
		w] /} ÷Much - _
		;fdfGo÷just okay - _
		Yff] /} ÷Less- _
		Psbd yf] /} ÷Very less- _
#=@	lzIfs-lzIIfsfx?n] tkf0{ nf0{ ;do lbg' x' G5 <	Psbd w] /} ÷Too much - _
		w] /} ÷Much - _
		;fdfGo÷just okay - _
		Yff] /} ÷Less - _
		Psbd yf] /} ÷Very less - _
#=$	lzIfs-lzIIfsfx?n] tkf0{ z} lIfs k| ultsf jf/] df cfdf-a' af jf cljefjsnf0{ hfgsf/L u/fpg' x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _

#-%	lzIfs lzIIfsfaf6 ljBfnosf] lgod kfng ug{ slQsf] bjfj x' G5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
#-^	tkf0{ nf0{ cfkm\ gf] ljBfno slQsf] dg k5{ <	Psbd w] /} ÷Too much - _ w] /} ÷Much - _ 7Ls} ÷just okay - _ Yff] /} ÷Less- _ Psbd yf] /} ÷Very less - _
#-&	Tfkf0{ sf] ljBfno lgod slQsf] s8f -strict_ 5 <	Psbd w] /} ÷Too much - _ w] /} ÷Much - _ 7Ls} ÷just okay - _ Yff] /} ÷Less - _ Psbd yf] /} ÷Very less - _
#-*	ljBfno gcfPsf] ÷sIff 5f] 8] sf] -class-bunk_ hfgsf/L cfdfa' af jf cljefjsnf0{ ljBfnon] u/fp5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
#-(	r' /f] 6, /S;L, nfu' cf} ifwL vfPsf] yfxf kfof] eg] ljBfnon] hfgsf/L cfdfa' af jf cljefjsnf0{ u/fp5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
#-!)	r' /f] 6, /S;L, nfu' cf} ifwL vfPsf] yfxf kfof] eg] ljBfnon] ;hfo÷b08 lbG5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
#-!!	sIffdf tkf0{ s' g a] Gr÷nx/-Row_ df a:g' x' G5 <	klxnf] a] Gr÷First bench - _ lar sf] a] Gr÷Middle bench - _ clGtd a] Gr÷Last bench - _ /f] 6] ;gdf÷Rotation - _
#-!@	cltl/Qm lqmofsnfk-Extra curricular activity_sf nflu slt ;do lbg' x' G5 <	cGbfhL ==========306f lbgsf]
#-!#	ljBfnosf ;flyx?n] tkf0{ nf0{ s:tf]	Psbd /fd| f] ÷Very good - _

	Jojxf/ u5{ g <	/fd| f] ÷Good - _
		;fdfGo÷just okay - _
		g/fd| f] ÷Bad - _
		Psbd} g/fd| f] ÷Very bad - _
#-!$	ljBfnodf tkf0{ sf] ldNg] ;fyLx?sf] ;d' x-u| ' k_ agf0 /xg' ePsf] 5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-!%	;fyLx? ldnL /] i6' /f÷ka÷Sna hfg' x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-!^	tkf0{ sf] ldNg] ;flyx?sf] s' g} g;f÷nt-Habit_ 5 <	5} g - _
		r' /f] 6 - _
		v} gL - _
		/S;L - _
		nfu' cf} ifwL - _
#-!&	tkf0{ sf] ;flyn] r' /f] 6÷v} gL÷/S;L vfg k} ;f sxf jf6 Nofp5g ?	sfd u/] / - _
		;fly;+ ujf6 - _
		vfhfsf] k} ;fn] - _
		cGo - v' nfpg' xf] ;\ _==========
#-!*	;flyx?n] tkf0{ nf0{ r' /f] 6÷/S;L÷nfu' kbfy{ vf g bjfj÷k| f] T;flxt u5{ g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-!(	;flyx?n] unk| m] 08÷Aofok| m] 08;+ u 3' Dg hfg k| f] T;fxg u5{ g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-@)	;flyx?n] of} g ;Dks{ /fVg k| f] T;fxg u5{ g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _

		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-@!	;fyLx? slxNo} of} gsdL{ sxf uPsf] hfgsf/L 5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-@@	tkfO{ sf ;d" x leqsf ;fyLx? ljr k|] d ;DjGw -Relationship _5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
#-@#	tkfO{ sf ;d" xsf leqsf ;fyLx? aLr of} g lqmofsnfk÷;DjGw-sexual activity_x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _

v08 $=ll ;d' bflos ljj/0f

$=!	tkf0{ sf] 5/l5d] sdf ldNg] ;fyLx? 5g <	5 - _ 5} g - _
$=@	Kl/jf/n] 5/l5d] s;+ u cfjZos ;xof] u lng' ÷lbg' x' G5<	lnG5f} - _ lnb} gf} - _
$=#	5/l5d] sx?n] tkf0{ sf] /] vb] v-Monitoring_ u5{ g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=$	tkf0{ n] r' /f] 6, v} gL, /S;L vfPsf] yfxf kfP eg] 5/l5d] sx?n] cfdfa' af÷cljefjsnf0{ vj/÷hfgsf/L ul/lbG5g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=%	5/l5d] ssf ;flyx?n] tkf0{ nf0{ r' /f] 6÷/S;L÷nfu' kbfy{ vfg bjfj÷k| f] T;flxt u5{ g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=^	tkf0{ kqkqLsf slQsf] k9g' ' x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=&	tkf0{ /] l8of] slQsf] ;' Gg' x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=*	tkf0{ l6eL slQsf] x] g' { x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _

		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=(	tkf0{ df] af0{ n km] g slQsf] k| of] u ug' { x' G5 <	Dff] af0{ n km] g 5} g jf rnfplbg - _
		;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=!)	tkf0{ 0G6/g] 6 slQsf] rnfpg' x' G5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=!!	Ps xKtfdf cGbfhL slt 306f 0G6/g] 6 rnfpg' x' G5 <	==========306f
$=!@	tkf0{ s] pb] Zon] 0g6/g] 6 rnfpg' x' G5 < **-Ps eGbf a9L ;xL pQ/ x' g ;S5_**	cgnf0g u] d÷Online game v] Ng - _
		;fdflhs ;+ hfn h:t} km] ;a' s - _
		kf7\ o;fdfu| Lsf nflu - _
		s' /fsfgL -Chat_ ug{ - _
		0d] n -Email_ ug{ - _
		dgf] /`g ;fdfu| L x] g{ - _
$=!#	s' g ;fdflhs ;+ hfn a9L k| of] u ug' { x' G5 < **-Ps eGbf a9L ;xL pQ/ x' g ;S5_**	s' g} klg k| of] u gug] { - _
		km] ;a' s÷facebook - _
		6' 0{ 6/÷Twitter - _
		cGo -
		v' nfpg' xf] ;_==========
$=!$	lkmNd s] df x] g' { x' G5 < **-Ps eGbf a9L ;xL pQ/ x' g ;S5_**	lkmNd xndf - _
		o" 6" jdf - _
		6] lnlehgdf - _
		;L8Ljf6 - _
		;DjlGwt ;f06d} uP/ - _

		cGo- v' nfpg' xf] ;\ _==========
$=!%	tkf0{ sf] ldNg] ;flyx?n] o' 6\ o" j-Youtube_ jf joZs ;f06-Adult site_df uP/ lkmNd÷lSnk; klg x] 5{ g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=!^	tkf0{ n] slxNo} o" 6\ o" j-Youtube_ jf joZs ;f06-Adult site_ df uP/ lkmNd÷lSnk; x] g' { ePsf] 5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
$=!&	o" 6" j-Youtube_ jf joZs ;f06-Adult site_ df uP/ lkmNd÷lSnk; x] /] kl5 of} g pQ] hgf a9] sf] dx;' ; ePsf] 5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _

v08 %M Jojxf/ ;DjGwL ljj/0f

%= !	tkf0{ sf] ldNg] ;flyx?n] r' /f] 6 vf5g <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
%=@	tkf0{ n] ;' tL{ ÷v} gL vfg' ePsf] 5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
%=#	tkf0{ n] r' /f] 6 vfg' ePsf] 5 <	;w} ÷Always - _
		w] /} h;f] ÷Very often - _
		slxn] sfxL+ ÷Sometimes - _
		w] /} sd÷Rarely - _
		slxNo} 5} g÷Never - _
%=# sf] pQ/ æslxNo} 5} g æ eg] Ps} rf] 6L k| Zg gDj/ %=!@ df hfg' xf] ;\ .		
%=$	uPsf] Ps dlxgfdf tkf0{ n] cGbfhL slt lbg r' /f] 6 vfg' eof] <	==========lbg
%=%	vfPsf] lbgdf tkf0{ n] cGbfhL slt j6f r' /f] 6 vfg' eof] xf] nf <	;+ Vof ==========
%=^	slt jif{ sf] pd] /df klxnf] rf] 6L r' /f] 6 vfg' eof] <	==========jif{ df
%=&	Ps dlxgfdf slt ?k} of r' /f] 6sf] nflu vr{ x' G5 xf] nf <	cGbfhL ?==========
%=*	tkf0{ n] R' f/f] 6 vfg] u/] sf] s:nf0{ yfxf 5 <	s;} nf0{ yfxf 5} g - _
	-Ps eGbf a9L ;xL pQ/ x' g ;S5 _	kl/jf/sf ;b:ox? - _
		;flyx? - _
		lzIfs-lzIIfsfx? - _
		5/l5d] sLx? - _
		cGo -v' nfpg' xf] ;\ _==========
%=(	tkf0{ n] klxnf] k6s r' /f] 6 s] sf/0fn]	s:tf] x' bf] /} 5 x] g{ - _
		c?sf] l;sf] u/] /- _

	vfg' eof] < **-Ps dfq ;xL pQ/ 5fGg' xf] ;\ _**	c?n] jfWo agfP/- _ lx/f] ÷lx/f] 0g÷cfw' lgs b] lvg - _ b' v e' Ng- _ v' zL dgfpg- _
%=!)	r' /f] 6 k| fo sxf vfg' x' G5 < **-Ps eGbf a9L ;xL pQ/ x' g ;S5 _**	3/df- _ af6f] df- _ ;flysf] 3/df- _ tf] lsPsf] h+ S;gdf- _ /] i6' /fG6÷k;ndf- _ cGo=====-v' nfpg' xf] ;\ _
%=!!	uPsf] !@ dlxgfdf slt k6s r' /f] 6 5f] 8\ g] k| oTg ug' { eof] <	u/] sf] 5} g- _ u/[sf] 5' - _ k| oTg u/] sf] eP=====hDdf k6s
%=!@	tkfO{ sf] ldNg] ;fyLx?n] **dWokfg- ljo/÷/S;L vfg]** _ ub{ 5g <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%=!#	tkfO{ n] **dWokfg ug' { jf ljo/÷/S;L vfg'** ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%=!# sf] pQ/ æslxNo} 5} g æeg] ,Ps} rf] 6L k| Zg gDj/ %=@% df hfg' xf] ;\ .		
%=!$	tkfO{ s' g lsl;dsf] dWokfg ug' { -ljo/÷/S;L vfg' _ ePsf] 5 <	aLo/ - _ jf0g - _ /S;L-ef] 8\ sf÷hLg÷/d÷x| ' :sL÷a| f08L_- _ nf] sn hf 8 - _ nf] sn /S;L - _ cGo -v' nfpg' xf] ;\ _==========
%=!%	tkfO{ n] k' /f Ps af] tn lao/ slxNo} vfg' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%=!^	tkfO{ n] k' /f Ps Ps k] u-;fgf] sk_ /S;L vfg' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _

		slxNo} 5} g÷Never - _
%-!&	uPsf] Ps dlxgfdf tkf0n] cGbfhL slt lbg dWokfg ug' { -ljo/÷/S;L vfg' _ eof] <	= ==========lbg
%-!*	Kflxnf] k6s dWokfg ubf{ -ljo/÷/S;L vfbf_tkf0{ sf] pd] / slt jif{ sf] lyof] <	==========jif{
%-!(	uPsf] dlxgf dWokfg -ljo/÷/S;L_nf0{ slt k} ;f vlr{ g' eof] <	cGbfhL ?==========
%-@)	tkf0{ klxnf] k6s dWokfg -ljo/÷/S;L vfg' _ s] sf/0fn] ug' { eof] < -Ps dfq ;xL pQ/ 5fGg' xf] ;\ _	s:tf] x' bf] /} 5 x] g{ - _ c?sf] l;sf] u/] /- _ c?n] jfWo agfP/ - _ lx/f] ÷lx/f] 0g÷cfw' lgs b] lvg- _ b' v e' Ng- _ v' zL dgfpg- _ cGo==========-v' nfpg' xf] ;\ _
%-@!	tkf0{ dWokfg-ljo/÷/S;L vfg] _ k| fo h;f] sxf ug' { x' G5 < -Ps eGbf a9L ;xL pQ/ x' g ;S5 _	3/df - _ ;flysf] 3/df - _ tf] lsPsf] :yfg jf h+ S;gd- _ ef] hdf- _ xf] 6] n÷/] i6' /fG6÷k;ndf - _ cGo-v' nfpg' xf] ;\ _==========
%-@@	ut !@ dlxgfdf tkf0{ n] s;/L DfWokfg ug{ -ljo/÷/S;L vfg_kfpg' eof] < -Ps eGbf a9L ;xL pQ/ x' g ;S5 _	cfkm} n] lsg] / - _ ;flyn] lsg] / - _ ;flyx?;+ u ldn] / /] i6' /fdf - _ cfdfa' jf;+ u 3/df - _ ef] h et] /df - _ cGo -v' nfpg' xf] ;\ _==========
%-@#	tkf0{ n] ut !@ dlxgfdf dWokfg u/L-ljo/÷/S;L lk0{ _ df] 6/;f0sn÷uf8L rnfpg' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-@$	tkf0{ n] ut !@ dlxgfdf DfWokfg u/L -ljo/÷/S:fL lk0{ _ of} g ;DjGw /fVg' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _

%=@%	tkf0{ sf] ldNg] ;fyLn] nfu' kbfy{ -drug_ jf ufhf÷efË÷wt' /f] ÷g;f nflUg] kbfy{ vfg] ÷lng] u/] sf 5g <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%=@^	tkf0{ n] ufhf÷efË÷wt' /f] ÷g;f nflUg] kbfy{ slxNo} vfg' ÷lng' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%=@^ sf] pQ/ æslxNo} 5} g æ eg] Ps} rf] 6L k| Zg gDj/ %=#$ df hfg' xf] ;\ .		
%=@&	olb lng' ePsf] eP, tkf0{ s:tf] lsl;dsf] nfu' kbfy{ lng' eof] < **-Ps eGbf a9L ;xL pQ/ x' g ;S5 _**	ufhf÷efË - _ sf] lsg÷x] /f0g÷a| fpg ;' u/÷clkmd- _ ;' O{ ÷Injection - _ g;fnflUg] cf} iflw÷vf] sLsf] cf} iflw- _ b' vf0sd ug] { cf} iflw÷Pain killer- _ cGo-v' nfpg' xf] ;\ _==========
%=@(	tkf0{ n] ut Ps dlxgf leq slQ k6s nfu' kbfy{ ;] jg ug' { eof] <	==========k6s
%=#)	ut Ps dlxgf nfu' kbfy{ vfg slt ?k} of vr{ g' eof] <	cGbfhL ?==========
%=#!	tkf0{ n] slt jif{ sf] pd] /df klxnf] rf] 6L nfu' kbfy{ vfg' eof] <	+ + + + + + + + + + + + ==========jif{
%=#@	tkf0{ klxnf] k6s nfu' kbfy{ s] sf/0fn] vfg' eof] < **-Ps dfq ;xL pQ/ 5fGg' xf] ;\ _**	s:tf] x' bf] /} 5 x] g{ - _ c?sf] vfPsf] l;sf] u/] / cfkm} n] - _ c?n] jfWo agfP/- _ lx/f] ÷lx/f] 0g÷cfw' lgs b] lvg - _ b' v e' Ng- _ /df0nf] sf] nflu- _ cGo-v' nfpg' xf] ;\ _==========
%=##	tkf0{ nfu' kbfy{ k| fo sxf vfg' x' G5 < **-Ps eGbf a9L ;xL pQ/ x' g ;S5 _**	3/df - _ Rff} /÷af6f] ÷PsfGt 7f pdf - _ ;flysf] 3/df - _ tf] lsPsf] h+ S;gdf - _ cGo-v' nfpg' xf] ;\ _==========

%-#$	ldNg] ;fyLx?n] of} g ;+ ks{ u/] sf] hfgsf/L 5 <	5 - _ 5} g- _
%-#%	tkfO{ k|] d ;DaGw x' g' x' G5 <	5' - _ 5} g - _
%-#^	tkfO{ nfO{ slxNo} s] 6f÷s] 6L ;fyLn] r' Djg u/] sf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-#&	tkfOn] slxNo} x:td} y' g÷of} g cË /u8] /÷rnfP/ of} g cfgGb lng] sfo{ -Masturbation_ ug' { ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-#*	tkfO{ n] slxNo} of} g÷zfl//Ls ;DjGw -kl/jf/ lgof] hgsf] ;fwg ljgf_ g} /fVg' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-#* sf] pQ/ æslxNo} 5} g æ eg,] Ps} rf] 6L k| Zg gDj/ %-$(df hfg' xf] ;\ .		
%-#(	tkfO{ n] klxnf] k6s sf] ;F u of} g;+ ks{ /fVg' ePsf] lyof] < -Ps dfq ;xL pQ/ 5fGg' xf] ;\ _	unkm|] 08÷s] 6L;fyL÷>LdtL- _ Aofok| m] 08÷s] 6f ;fyL÷>Ldfg- _ kl/jf/s} ;b:o- _ /f] huf/bftf - _ ckl/lrt - _ of} gsdL{ - _ cGo -v' nfpg' xf] ;\ _ ==========
%-$)	tkfO{ n] klxnf] k6s of} g ;Dks{ /fVbf tkfO{ slt jif{ sf] x' g' x' GYof] <	jif{ ==========
%-$!	tkfO{ klxnf] k6s of} g ;Dks{ s] sf/Ofn] /fVg' eof] < -Ps dfq ;xL pQ/ 5fGg' xf] ;\ _	s:tf] x' bf] /} 5 x] g{ - _ ;flysf] l;sf] u/] / cfkm\ g} OR5fn] - _ s/sfkn jf bjfjn] - _ cGov' nfpg' xf] ' \ _==========
%-$@	tkfO{ n] klxnf] k6s	cf^g] fsf] 7f÷^Nof6÷3/ - _

	of} g ;Dks{ s' g 7fpF df ug' { ePsf] lyof] < -Ps dfq ;xL pQ/ 5fGg' xf] ;\ _	kf6{ g/sf] sf] 7f- _ ldNg] ;flysf] sf] 7f÷km\ Nof6÷3/ - _ xf] 6n÷nh÷l/;f] 6{ - _ h+ un - _ cGo -v' nfpg' xf] ;\ _==========
%-$#	tkf0{ n] klxnf] k6s of} g ;Dks{ /fVbf s:tf] dx;' ; ug' { eof] < -Ps dfq ;xL pQ/ 5fGg' xf] ;\ _	cfgGb÷/df0{ nf] ÷;Gt' li6 ePsf] - _ b' ljwf ePsf] - _ 8/ nfu] sf - _ /f] Psf] - _ s] xL klg dx;' ; gu/] sf] - _ cGo -v' nfpg' xf] ;\ _==========
%-$ $	of} g ;Dks{ df jf kl5 tkf0{ jf tkf0{ sf] kf6{ g/n] kl/jf/ lgof] hgsf] s' g} ;fwg k| of] u ug' { ePsf] lyof] <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-$%	tkf0{ sf] uPsf] ! jif{ df slthgf of} g ;fyLx? eP <	;+ Vof ========
%-$^	tkf0{ n] uPsf] ! jif{ leq tkf0{ jf tkf0{ sf] ;flyn] of} g ;DjGw kl5 cfsl:ds ue{ lg/] fwsf] ;fwg- Emergency contraceptives_ h:t} cf0{ kLn, 0sf] g k| of] u ug' { eof] <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-$&	tkf0{ n] slxNo} k} ;f÷pkxf/sf] nflu jf s;} nf0{ k} ;f÷pkxf/ lbP/ of} g ;Dks{ ug' { ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-$ *	tkf0{ jf tkf0{ sf] kf6{ g/n] slxNo} ue{ ktg-Abortion_ jf clglZR5t ue{ t' xfpg' ePsf] 5 <	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _ slxNo} 5} g÷Never - _
%-$ (	tkf0{ sf] ;fyL jf p;sf] kf6{ g/n] slxNo} ue{ ktg -Abortion_ u/] sf] yfxf kfpg'	;w} ÷Always - _ w] /} h;f] ÷Very often - _ slxn] sfxL+ ÷Sometimes - _ w] /} sd÷Rarely - _

	jf ;' Gg' ePsf] 5 <	slxNo} 5} g÷Never - _

v08 ^ ! :jf:Yo Jojxf/sf /0flglt

^=!	ljBfnodf :jf:Yo ;DjGwL lzIff kfpg' ePsf] lyof] <	kfP - _ kfPsf] 5} g - _
^=@	ljBfnodf lzIfs lzIIfsfn] of} g tyf k| hgg :jf:Yo ;DjGwL ljifo s;/L k9fpg' eof] < -Ps eGbf a9L ;xL pQ/ x' g ;S5_	cfkm} k9 eGg' eof] - _ u[xsfo{ ?kdf lbg' eof] - _ ;fyL;+ u ldn] / k9 eGg' eof] - _ cfkm} n] /fd| /L k9fpg' eof] - _ kf7 k9fpg' g} ePg- _
^=#	ljBfnodf :jf:Yo lzIff s] af/] df k9g' ePsf] lyof]] < -Ps eGbf a9L ;xL pQ/ x' g ;S5_	/f] ux? - _ ;fd' bflos :jf:Yo- _ lszf] /lszf] /Lsf hf] lvd Aojxf/- _ jftfj/0f :jf:Yo - _ of} g b' /\ Jojxf/÷lx;f - _ of} g /f] u / Pr=cf0{ =eL P8\ ; - _ kl/jf/ lgof] hg- _
^=$	!! slffdf :jf:Yo ;DjGwL lzIff kfpg' eof] <	kfP - _ kfPsf] 5} g - _
^=%	tkf0{ sf] ljBfnon] ljBfyL{ sf] hf] lvd Jojxf/ -w' d| kfg÷dWokfg ÷nfu' kbfy{ _ sd ug{ s] u/] sf] 5 < -Ps eGbf a9L ;xL pQ/ x' g ;S5_	s] xL klg u/] sf] 5} g - _ hfgsf/ JolStx?af6 hfgsf/L lbPsf] - _ ljBfnodf ;' rgf s] Gb| sf] :yfkgf - _ :jf:Yo lbj;x? dgfPsf] - _ ;r] tgf sfo{ qmdx? u/] sf] - _ s8f cg' zf;g÷;hfo lbg] u/] sf] - _ cljefjs-lzIfs cGt/lqmof- _
^=^	tkf0{ sf] ljrf/df ljBfyL{ sf] hf] lvd Jojxf/ -w' d| kfg÷ dWokfg ÷nfu' kbfy{ _ sd ug{ ljBfnon] s:tf] sfo{ qmd ug' { k5{ < -Ps eGbf a9L ;xL pQ/ x' g ;S5_	cltl/St lqmofsnfk a9fpg] - _ ljBfnodf ;' rgf s] Gb| sf] Joj:yf- _ Hfgsf/ JolSt;+ u cGt/lqmof u/fpg] - _ ;r] tgf sfo{ qmdx? ug{ - _ s8f cg' ;f;g÷;hfo lbg] - _ cljefjs-lzIfs cGt/lqmof- _
		cltl/St lqmofsnfk a9fpg] - _

^=&	ljBfyL{ x?sf] of} g ;DjGwL hf] lvdk" 0f{ Jojxf/nf0{ sd u/fpg ljBfnon] s:tf] sfo{ qmd ug' { k5{ < **-Ps eGbf a9L ;xL pQ/ x' g ;S5 _**	lszf] /lszf] /L d} qL :jf:Yo s] Gb| - _
		lszf] /lszf] /L d} qL :jf:Yo k| bfos- _
		;r] tgf sfo{ qmdx? ug] { - _
		s8f cg' ;f;g÷;hfo lbg] - _
		ue{ lg/f] wssf] Joj:yf- _
		lzIfs lzIIfsfnf0{ tflnd- _
		cljefjs / lzIfsljr cGt/lqmof- _
^=*	lszf] /lszf] /Lx? hf] lvdk" 0f{ Jojxf/ hf] lvd Jojxf/ **-w' d| kfg÷ dWokfg ÷nfu' kbfy{** _ sd ug{ **;/sf/**n] s] ug' { k5{ < **-Ps eGbf a9L ;xL pQ/ x' g ;S5 _**	k| rf/ k| ;f/÷r] tgfd' ns sfo{ qmd- _
		lgtLlgodsf] prLt sfof{ Gjog- _
		r] tgf hufpg] ;+ 3;+ :yfnf0{ ;xof] u ug] { - _
		pd] / gk' u] sfnf0{ dfbskbfy{ a] Rg gkf0g] lgod- _
		;fj{ hlgs :yfgdf w' d| kfg ug{ gkf0g] lgod- _
		r' /f] 6÷/S;Lsf lj1fkgdf /f] s- _
^=(	lszf] /lszf] /Lx?sf] **of} g;DjGwL hf] lvdk" 0f**{ Jojxf/nf0{ sd ug{ **;/sf/**n] s] ug' { k5{ < **-Ps eGbf a9L ;xL pQ/ x' g ;S5 _**	k| rf/ k| ;f/÷r] tgfd' ns sfo{ qmd- _
		of} g tyf k| hgg :Jff:Yo gLltlgod- _
		:jf:Yo ;+ 3-;+ :yfnf0{ lszf] /lszf] /L d} qL agfpg] - _
		K| fhgg\ :jf:Yo ;] jf k| bfosnf0{ tflnd- _
		/] 8nf06 Pl/ofsf] Joj:yf- _
		ue{ lg/f] ws tyf cfslids ;fwgsf] Joj:yf- _
		of} g tyf k| hgg :Jff:Yonf0{ ljBfno / Kn; 6' sf] kf7\ ok' :tsdf lj:t[t ?kdf ;dfj] z- _

k\| ZgfjnL eg] { sfd ;lsof] .

cd" No ;do lbg' ePsf] df wGojfb .