

**HIV VULNERABILITY AND SEXUAL RISK  
BEHAVIOUR OF THE DRAYANG GIRLS IN  
BHUTAN**

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BHUTAN**

52<sup>nd</sup> Master of Public Health/International Course in Health Development  
(MPH/ICHD)

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KIT (ROYAL TROPICAL INSTITUTE)  
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# **HIV VULNERABILITY AND SEXUAL RISK BEHAVIOUR OF THE DRAYANG GIRLS IN BHUTAN**

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Public Health.

By

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Bhutan

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Signature:

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## LIST OF ABBREVIATIONS

AHB	Annual Health Bulletin
AIDS	Acquired Immunodeficiency Syndrome
ALD	Alcohol Liver Disease
ANC	Antenatal Care
BICMA	BhutanInfoComm and Media Authority
BMIS	Bhutan Multiple Indicator Survey
BSS	Behavioural Surveillance Survey
CDC	Centre for Disease Control
CMR	Crude Mortality Rate
CSO	Civil Society Organization
DHS	Demographic Health Survey
ELISA	Enzyme-linked immunosorbent assay
FA	Formative assessment
GDP	Gross Domestic Product
GPS	General population survey
HISC	Health Information and Service Centre
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counselling
HTC	HIV Testing and Counselling
IBBS	Bio-behavioural surveillance
LR-R	Lorway Study
MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
MoLHR	Ministry of Labour and Human Resource
MPH	Master in public Health
MTCT	Mother to Child Transmission
NACP	National AIDS Control Program
NCD	Non-Communicable Diseases
NHS	National Health Survey
PHC	Primary Health Care
RGoB	Royal Government of Bhutan
RPR	Rapid-Rapid Plasma regain
SBNS	Sexual Behavioural and Network Study
STI	Sexually Transmitted Infections
THPA	Treponema pallidum particle agglutination assay
UNAIDS	United Nations AIDS
VCT	Voluntary Counselling Testing
WHO	World Health Organization

## GLOSSAARY

1. **Drayang:** The Drayangs are small dance bars in Bhutan where the young girls and women performs Bhutanese songs and dances on the stage to entertain the bar patrons and making them pay for their performance.
2. **Drayang girls:** The young girls and women working in the Drayang as singers and dancers to entertain the bar patrons are called as Drayang girls.
3. **Bar patrons:** People who visit bars, karaoke and Drayangs and who are potential clients for transactional sex workers.
4. **Entertainment venue:** Entertainment venue in this study means karaoke, discos and Drayangs.
5. **Transactional sex:** Transactional sex in this study is referred to as sexual intercourse between men and women, where exchange of money or materials goods takes place.
6. **Non-transactional sex:** The non-transactional is being referred to as marital, non-marital and extramarital sex without the exchange of money or materials in return.
7. **Vulnerability:** The terms vulnerability refers to unequal opportunities, social exclusion, unemployment, or precarious employment and other factors such as social, cultural, political, and economic that make a person more susceptible to HIV infection. These underlying factors reduces the individual's ability to fight against the HIV infection thus, it is beyond their control. Some of these factors are lack of the knowledge and skills needed to prevent oneself and other from STIs/HIV. The other issues includes the accessibility, quality, and coverage of services. In addition, the societal factor such as human rights violations or a social and cultural norm does play a critical role. These social and cultural norms include; practices related to individual and community beliefs, and laws that are stigmatizing and disempowering certain populations, limiting their ability to access to HIV prevention, treatment, care, and support services. All these factors alone or in combination may contributes in making individual vulnerable to HIV acquisition. (UNIADS,2011)

8. **Risk:** The term risk refers to the risk of exposure to HIV or the likelihood that a person may become infected with HIV. The risk is governed by certain biological and behavioural factors such as unsafe sex, multiple sexual partnership, and sex at a young age. These factors create, increase, or perpetuate risk. Behaviours, not membership of a group, place individuals in situations in which they may be exposed to HIV. (UNIADS,2011)
9. **Underlying determinants:** The underlying determinants refers to the sociodemographic, economic and sociocultural factors that make an individual vulnerable to STIs/HIV infections. The underlying factors influence the proximate determinants consisting of sexual risk behaviour and biological factors thus leading to HIV infection. Therefore, to have the desired health outcome the underlying factors must drive through proximate determinants in order to affect the behavioural and biological outcome. (The Proximate-Determinants Framework, J. Ties Boerma) budget bar in Bhutan.
10. **Proximate determinants:** This is simply the outcome of underlying determinants like sociodemographic, sociocultural and socioeconomic factors that are influencing the biological and behaviour risk factors in acquisition and transmission of STIs/HIV infection. (J. Ties Boerma)
11. **Concentrated epidemic:** In a concentrated epidemic HIV has spread rapidly in one or more populations but is not well established in the general population. Typically, the prevalence is over 5% in subpopulations while remaining under 1% in the general population, although these thresholds must be interpreted with caution. In a concentrated HIV epidemic, there is still the opportunity to focus HIV prevention, treatment, care, and support efforts on the most affected subpopulations, while recognizing that no subpopulation is fully self-contained. (UNIADS,2011)
12. **Generalized epidemic:** A generalized HIV epidemic is an epidemic that is self-sustaining through heterosexual transmission. In a generalized epidemic, HIV prevalence usually exceeds 1% among pregnant women attending antenatal clinics. (UNIADS,2011)

13. **Behaviour change:** It is the process in which an individual adopts and maintains a healthy behaviour which is not in favour of the risk of HIV infection. For example, engaging in safe sex by using condom or avoiding multiple sexual partners (UNIADS,2011)
14. **Heterosexual:** The sex with opposite sex partners. For example male and female. (UNIADS,2011)
15. **Intergenerational relationships:** The sexual relationship between with the age difference of more than 10 years or more age gap between the sexual partners is called as intergenerational sex. (UNIADS,2011)
16. **Age-disparate relationships:** The age gap of 5 years between the sexual partners is called as Age-disparate relationships. (UNIADS,2011)
17. **Safer sex:** The term 'safer sex' refers to adopting a sexual behavioural that will reduce or minimise the risk of HIV transmission. For example, postponing sexual debut, non-penetrative sex, correct and consistent use of male or female condoms, and reducing the number of sexual partners. (UNIADS,2011)
18. **Sex work:** The sex work can be referred to as "commercial sex work", "transactional sex" or "the sale of sexual services"" between men and women and men and men. It is also acceptable to say that sex workers are 'paid for sex'. (UNIADS,2011)

## **ABSTRACT**

**Background:** In Bhutan, there is a general perception that Drayang girls are more vulnerable to STIs and HIV acquisition owing to their engagement in transactional sex.

**Objective of the study:** To analyse HIV vulnerability and sexual risk behaviours of Drayang girls in Bhutan to make recommendations for developing appropriate interventions to prevent STIs/HIV transmission among Drayang girls.

**Methodology:** Study involves analysing data from the quantitative survey and complemented by literature review. The analysis was carried out using the modified Chen's Child Survival Model (1985) of Kembo J to study the vulnerability of HIV infection among young people.

**Findings:** Of the 245 Drayang girls recruited for this study 28.2% have engaged in transactional sex and 60% in non-transactional sex. Condom use was 36% among transactional and 20% among non-transactional. The prevalence for HIV was 0.82%, hepatitis B 6.9% and syphilis 2.8%. The factors like marital status, education, living arrangement, current working city and alcohol consumption are significantly associated ( $p < 0.05$ ) with sexual risk behaviour in acquisition of STIs/HIV.

**Conclusion:** All the Drayang girls are not engaged in transactional sex but the transactional sex do exist. The non-transactional sex is more rampant than transactional sex. Sociodemographic, socioeconomic and sociocultural factors are influencing the sexual risk behaviour.

**Recommendations:** Continue and expand current HIV Testing and Counselling (HTC) services among the Drayang girls in rest of the cities. Review the condom distribution plan and recruit peer educators to expand the services. Integrate HIV prevention in job training of the Drayang girls. Evaluate the HIV IEC materials in relation to low comprehensive knowledge on HIV prevention.

**Key words:** Drayang girls, transactional sex, HIV vulnerability, sexual risk behaviour, Entertainment venues.

**Word Count: 12638**

## **INTRODUCTION**

I took an opportunity to pursue this master's degree program at KIT while serving as the Public Health Program Officer, Ministry of Health, Royal Government of Bhutan. As a result, I have chosen my thesis topic in the area of HIV and AIDS.

The qualitative study by R. Lorway among the Drayang girls in Bhutan and Sexual Behaviour and Network Study (SBNS), 2011 among the bars girls working in the entertainment venues such as karaoke, discos and Drayang (Dance bar) have reported the existence of informal transactional sex.<sup>1,2</sup> In addition, based on little qualitative information, the National AIDS Control Program (NACP) also considers them as high-risk women and implement the targeted interventions. However, there is no quantitative information to understand the actual magnitude of transactional sex among the Drayang girls and their vulnerability to HIV/STIs infections. Therefore, this thesis will try to bridge the information gap by assessing the HIV vulnerability and sexual risk behaviour of the Drayang girls in acquisition of STIs and HIV in three major cities of Bhutan.

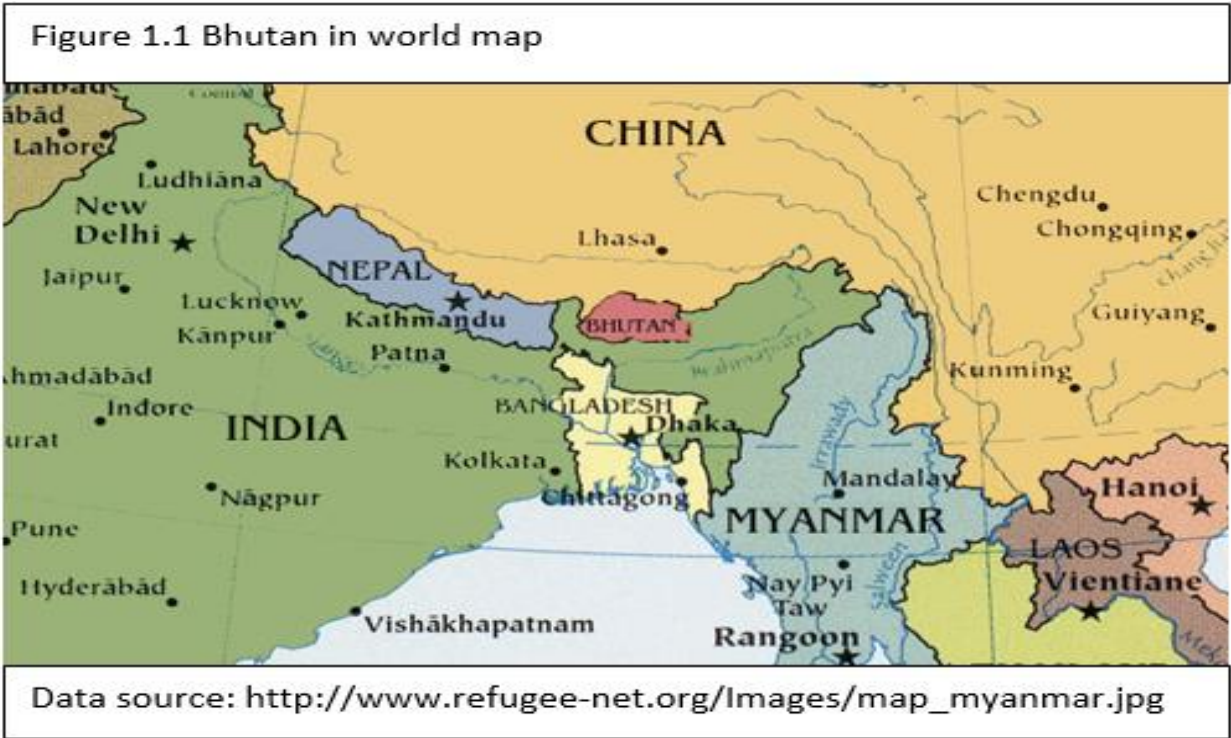
This study is relevant to the present context especially when the HIV cases are increasing every years. The current detected cases stands at 460 since 1993, which is far below the UNIADS estimation of 1,100 cases.<sup>3</sup> (UNAIDS repor-2013). The situation is further worsen by the increased number of STIs cases reported in Annual Health Bulletin, 2016 (AHB) from 12 to 92 (per 10,000 population) from 2011 to 2015 among the general population.<sup>4</sup> The pattern of HIV infection shows that female aged 15-29 years are mostly infected (26.1%) as compared to the men aged 30 and above (19.13%). This may be an indication of older men being sexually active with younger females thus putting young age female more at risk of HIV infection.

The global evidence also shows that transactional sex is one of the sexual risk factor that increases the vulnerability to HIV infections. The studies by Zembe and Dunkle also showed that transactional sex involves greater sexual partnerships, which are often intergenerational, concurrent and unprotected sex.<sup>5,6</sup> The evidence shows that intergenerational sex between the older men and younger women increases the vulnerability of young female to HIV infection. The gender power imbalance and greater economic needs of the women and low condom use were some of the key reasons, which makes young females more vulnerable to HIV infection.<sup>7</sup>

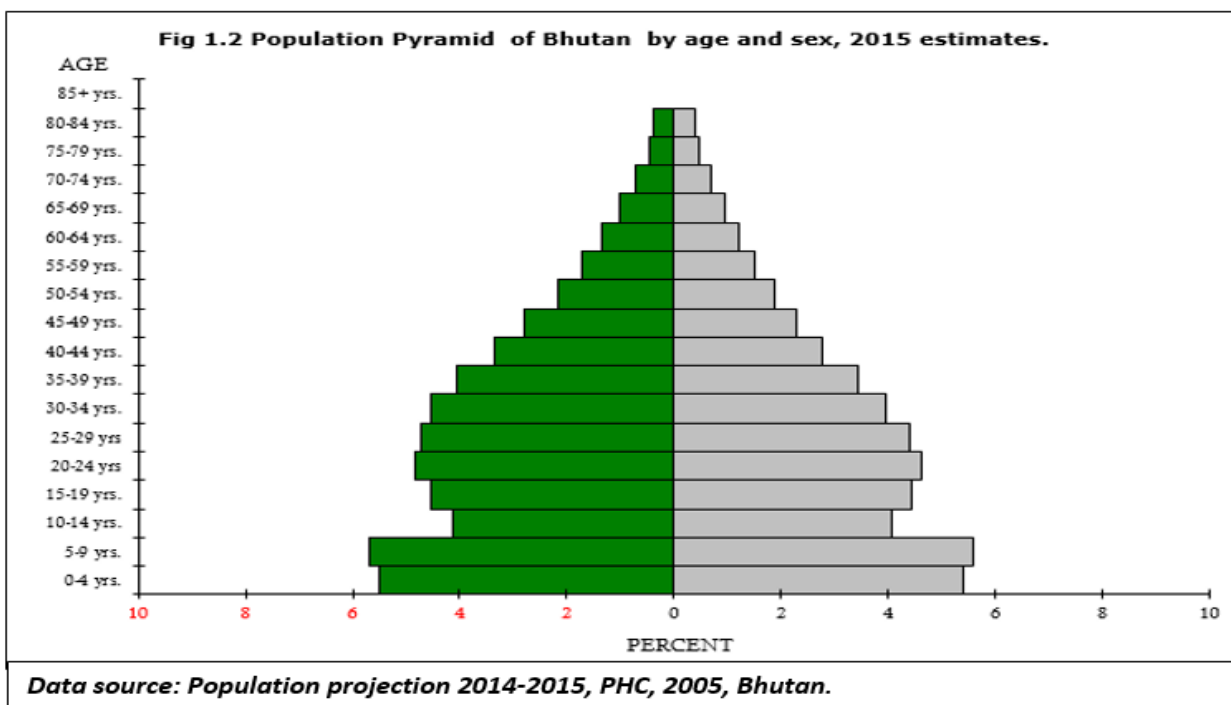
**1. BACKGROUND INFORMATION OF BHUTAN**

**1.1. Geography and Demography**

Bhutan is one of the last standing Buddhist kingdom with the total size of 38,394 sq. km <sup>8</sup> bordered on the north and east by Tibet-China and on the south and east by India. The monasteries, fortresses, and dramatic topography ranging from subtropical plains to steep mountains and valleys makes Bhutan unique to the outside world. The map of Bhutan bordered by China and India is shown below in Figure 1.1.



According to the Population and Housing Census (PHC), 2005 Bhutan’s population for 2015 was estimated at 757,041 out of which 51.95% were males and 48.04% females. The 64.54% of the total population falls within the age range of 15-64 while 30.4% of them fall below 15 years of age and remaining 5% lies above 60 years of age. The population density, person per square kilometre, was 19.7.<sup>9</sup> The Bhutan population pyramid for the year 2015 is as indicated in Figure 1.2.



## 1.2. Sociocultural setting

Bhutan's unique cultural and traditional values are the essential expressions of the nation's identity. The Bhutanese society is centred around the practice of Buddhism, which is the main religion and it is strongly interwoven with the day-to-day beliefs and practices. The most prominent architectural features are the fortresses known as Dzongs, Chortens (stupas) and Lhakhang (temples). There are also festivals being celebrated at different times of the year throughout the country such as Tshechus.<sup>10</sup>

## 1.3. Economy

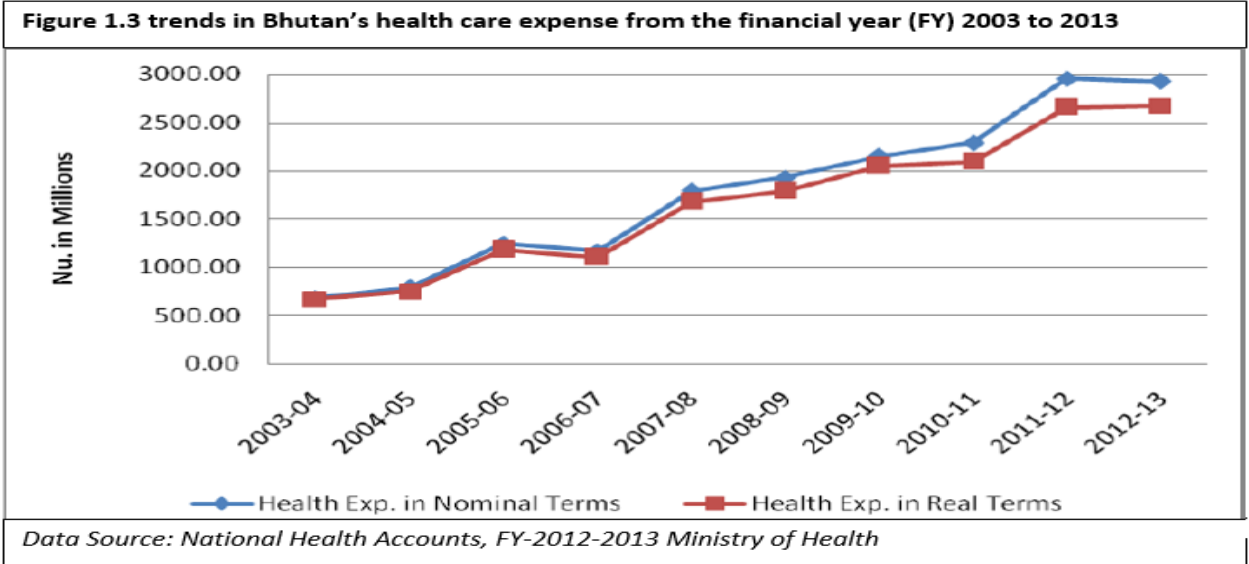
Bhutan's economy is one of the smallest in the world, it is still developing, and that relies on the hydropower, agriculture, tourism, and forestry. India is the Bhutan's main market for the sale of hydropower and has a potential to consume entire production. The likelihood of spurring sustainable economic growth is very high after successfully completing all the ongoing hydropower projects and tapping the untapped ones.<sup>(11)</sup> The Gross Domestic Product (GDP) per capita was USD 2,611.74 with the GDP growth rate of 5.46% in the year 2014.<sup>(12)</sup> The population poverty rate in the year 2012 was 12.0% and the unemployment rate stands at 2.6% in 2014.<sup>13</sup>



**1.4. Health system and financing**

Bhutan has adopted the principles of primary health care to maintain the balance between preventive, promotive and rehabilitative services. The health care services in Bhutan are delivered through three tiers of health facilities such as primary, secondary and tertiary. Ministry of Health (MoH) as the custodian of Bhutan’s health care system is mandated to provide free basic public health both in modern and traditional medicine to the entire population as enshrined in the constitution of the kingdom of Bhutan. The role of private health sector is not prominent in Bhutan except for few selected diagnostic care centres and sale of pharmaceutical drugs and supplies. The current doctor to population ratio comes to about 3.3 doctors per 10,000 population<sup>4</sup> which is still lower than WHO’s average SAARC region standing at 4.6.<sup>14</sup> The health human resource, 2015 is indicated in Annex 1.

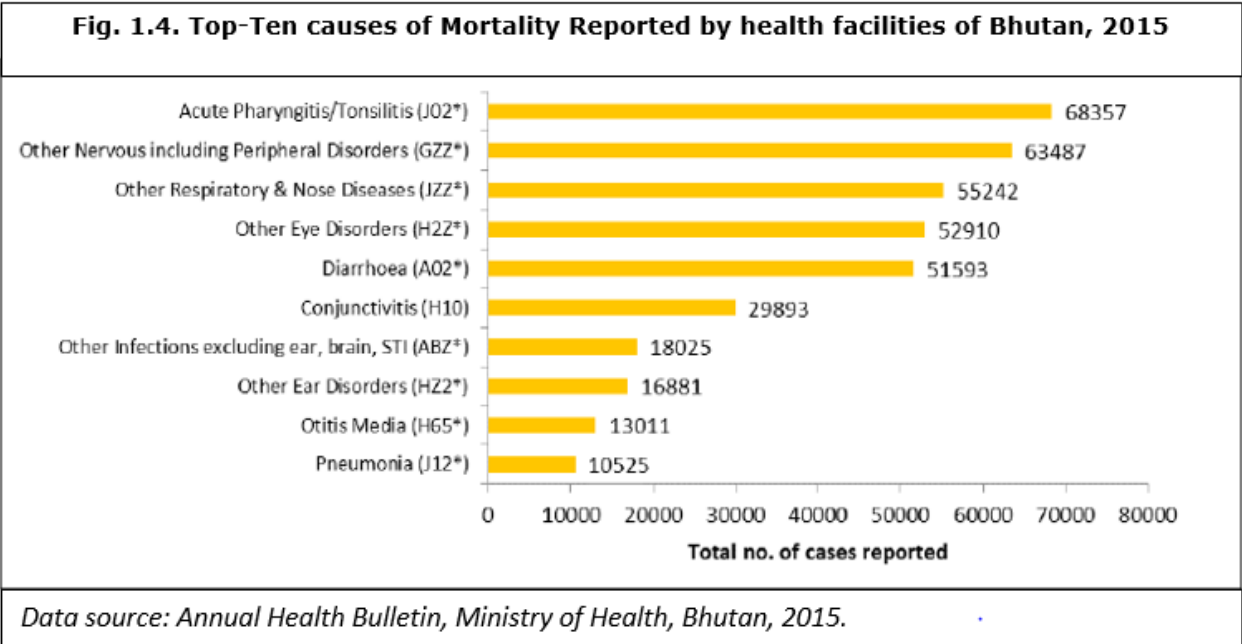
Despite its well-articulated free health care policy, the chances of future funding challenges are high thus resulting in the unsustainability of free health care system. This is evident from the change in epidemiological and demographic transition coupled with the rising health care cost over the period.<sup>15</sup> The Gross Domestic Product (GDP) for health has decreased from 6% in 2000 to 3.8% in 2013. In contrast there is constant increase in the annual health care expenses as shown in Figure 1.3.<sup>15,16</sup> At present majority of the health care cost in Bhutan is borne by the government, which is financed through the taxes and revenues (63%), donor support (14%) and around 23% through the out of pocket payments.<sup>16</sup>



**1.5. Health situation**

Like any other developing countries, Bhutan is also struggling with the double burden of the diseases. The life lost due to non-communicable diseases (NCD) accounts for 68% of the total burden of the disease while 38% is due to communicable diseases.<sup>17</sup> For instance, as shown in Figure 1.4 the alcohol liver disease (ALD), diabetes and hypertension are the top killer diseases in Bhutan.<sup>4,18</sup> The top-Ten communicable and NCD are indicated in Annex 2.

However, in general, Bhutan is able to sustain its free universal health care coverage; there is an increase in life expectancy at birth from 66 to 68.9 years in the year 1994 and 2010. The crude mortality rate (CMR) per 10,000 population has also decreased from 39.9 in 1994 to 17.9 in 2015. In terms of under-five mortality, it has reached to 37.3 from 96.9 per 1,000 lives in the year during the same period. The maternal mortality ratio (MMR) deaths per 100,000 live births accounted to 86 in the year 2015.<sup>4</sup>

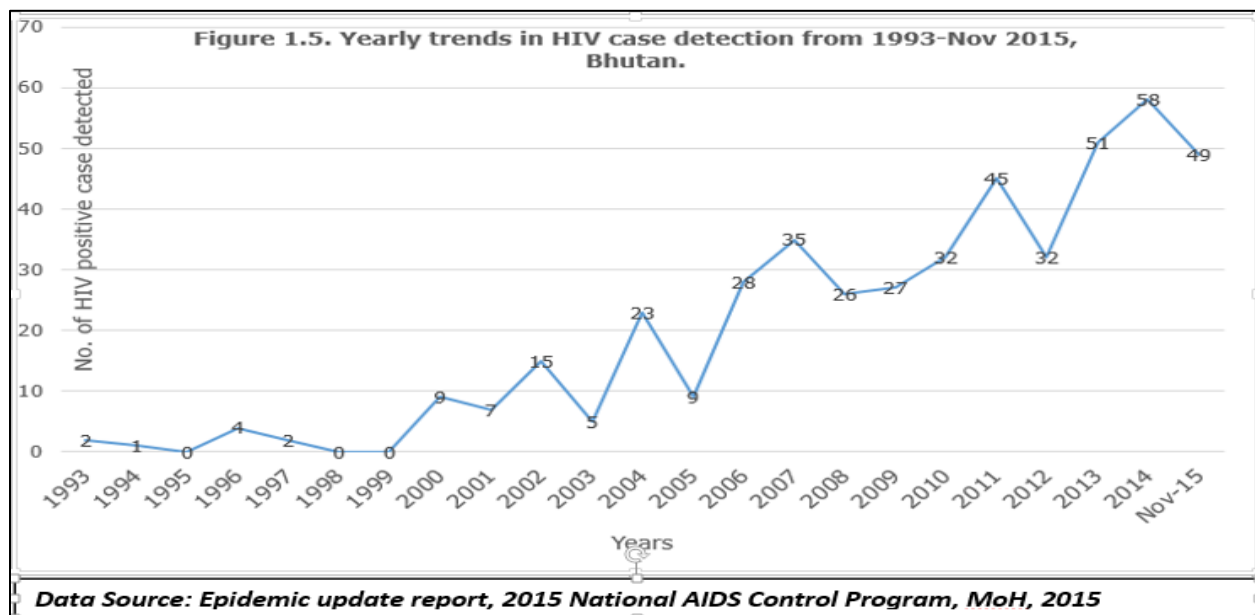


**1.6. HIV/AIDS in Bhutan**

As per the UNAIDS country progress report, 2014, Bhutan is one of the few countries in South Asia that continue to experience a low adult (15-49 years) HIV prevalence, which was below 0.2.<sup>19</sup> The cumulative number of HIV cases reported as of November 2015 stands at 460, out of which 234 were male and 226 female, the total cases also includes the 31 children (11 male and 21 female).<sup>20</sup> The trend in yearly HIV case detection was indicated in Figure 1.5.

However, in 2013 UNAIDS estimated 1,100 HIV cases<sup>3</sup> in Bhutan thus creating a case detection gap of 58.2% indicating that about 640 of the HIV positive people still do not know their status.

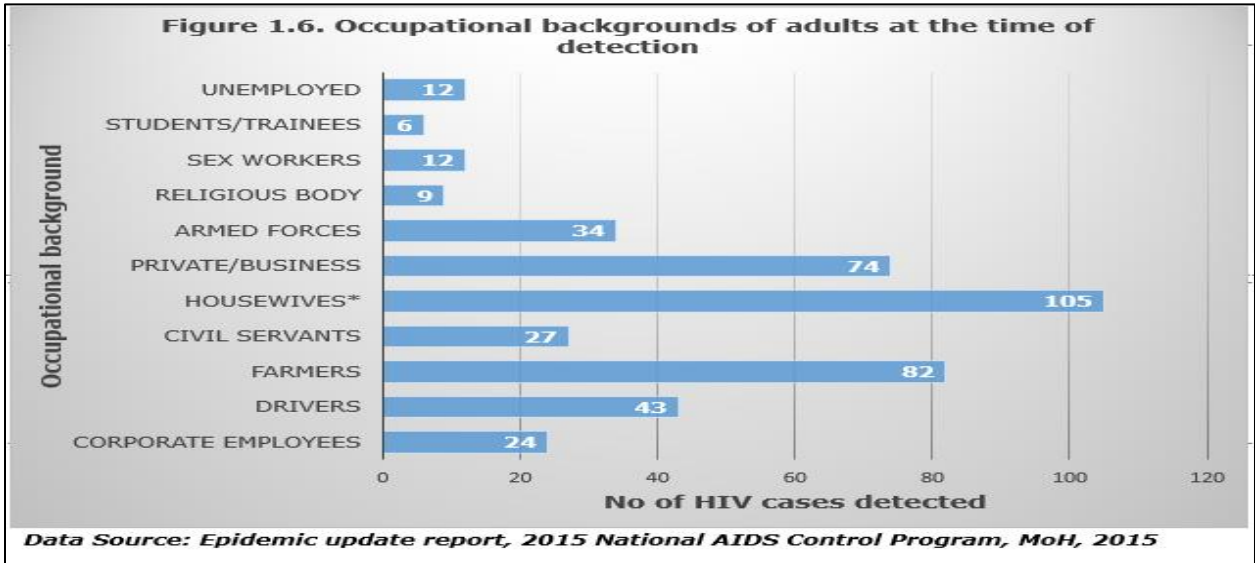
The HIV epidemic in Bhutan is not concentrated to specific key population rather it has infected almost all groups of population indicating generalized epidemic.



The most infected groups were the housewives, farmers, business personnel and drivers as shown in the Figure 1.6. The reported cases showed that most of them have acquired HIV through heterosexual (91.74%) followed by Mother to Child Transmission (MTCT) (6.96%) and rest 1.3% consists of injecting drugs and blood transfusion.<sup>20</sup> Here the bias in reporting other form of transmission such as through anal sex is expected because there was no provision to record anal sex in the reporting form till 2014.

In terms of diagnosis, the contact tracing remains the dominant mode of case findings that is around 31.3% followed by medical screening (19.5%) and Voluntary Counselling Testing (VCT) 18.9% while 30.3% of it comprises of surveys, ANC and blood donation screenings including the construction sites.<sup>20</sup> The pattern of HIV infection shows that female aged 15-29 years are mostly infected (26.1%) as compared to the men aged 30 and above (19.13%). This can be an evidence of older men being sexually active with younger females

thus putting young age females more at risk of HIV infection. In general, 58.47% of the total detected cases falls within the age range 25-39 while the



range 15-24 is about 18.9%.<sup>20</sup>

Thus, the HIV infection in Bhutan is mostly among the young age groups. Although the prevalence seems to be low as mentioned above, but the risk of transmission seems high owing to the young age infection and growing risk behaviour of the Bhutanese population as highlighted in the problem statement in the next chapter.

## **2. PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND METHODOLOGY.**

### **2.1. Problem statement**

HIV has affected the cross-section of population in Bhutan. However, there are still some population that are identified as high risk among others in driving the epidemic such as youths, informal female sex workers, injecting drug use, drivers and migrant workers, etc. The emergence of informal female sex workers and growing transactional sex in the entertainment venues like discos, karaoke and drayangs is recorded in General Population Survey (GPS) 2006, Behavioural Surveillance Survey (BSS) 2008 in Bhutan.<sup>21,22</sup> The qualitative study on sexual network formation among Drayang girls by R. Lorway also showed the similar findings.<sup>(1)</sup> The Demographic and Health Survey (DHS) 2013 shows that young age sexuality in Bhutan is a challenge in relation to early pregnancy, STIs/HIV prevention.<sup>23</sup> This is also evident from the national HIV report that 45.2% of the reported cases falls within the age range of 15-29 years.<sup>24</sup> The national HIV report-2015 also showed a high number (26%) of HIV infection among the young females aged 15-29 as compared to men (19.5%).<sup>24</sup>

The SBNS (2011), has shown that high multiple sexual relationships and the low condom use among the patrons of the bars.<sup>2</sup> Similarly, the GPS (2006) and BSS (2008) have shown that one-fifth of all the married people has engaged in extramarital sex within a year. This was higher among the urban area (23%) as compared to the rural areas (14%).<sup>21,22</sup> The situation is further aggravated with the increasing urban socio-sexual networks, where people seeking sexual partners in the entertainment venues like Drayangs are on the rise.<sup>1</sup> The several studies reported the involvement of the Drayang girls into transactional sex work.<sup>2,25</sup> These girls are mostly found to be either school dropouts or uneducated and are perceived to have a low level of knowledge on HIV and AIDS prevention. The misconception of low risk of getting HIV from Bhutanese as compared to the non-Bhutanese sexual partners is also high among them.<sup>25</sup> There is no specific, quantitative study carried out to gauge the risk behaviour and knowledge of these girls on HIV prevention and transmission. In the case of knowledge, the National Health Survey (NHS) (2012) revealed that comprehensive HIV knowledge among the population aged 15-24 was just 23.2%.<sup>26</sup>

The consequences of high multiple sexual practice and low condom use among the general population was evident from the increasing trends in STIs and HIV cases. Since 2006, no less than 25 cases were detected every year and in the last four years from 2010 to 2015, the average yearly detection was not less than 44.5 cases. The situation of HIV epidemic is further worsened by increase in incidence of STI cases per 10,000 population from 41 to 92 in 2012 and 2015 respectively.<sup>4</sup> The international evidence also show that multiple concurrent partnership are associated with the acquisition and transmission of HIV.<sup>(27)</sup> The increased HIV and STI cases attribute to low condom use and high multiple sexual partnerships as indicated in GPS (2006), BSS-2008 and SBNS (2011). The other reason for increased in HIV cases over the period may be due to the expansion of the Voluntary Counselling and Testing (VCT) in all the health centres across the country.

Studies in Bhutan also found that consumption of alcohol as the means to expand their socio-sexual network with potential sexual partners by the young girls and the patrons of the entertainment venues.<sup>2</sup> The adult per capita alcohol consumption is 8.47 litres in 2010, which is considered much higher than the global standard rate of 6.2 litres in 2002.<sup>(28)</sup> The qualitative study by R. Lorway on sexual network formation also shows that financial power and alcohol are the main ingredients in persuading young Drayang girls of low socioeconomic status for sex.<sup>1</sup> These clearly demonstrate that alcohol does play a role in the sexuality of both men and women, which may increase their vulnerability to HIV infection.

The other challenge is the existence of sociocultural stigma against these girls due to their engagement in sex work. However, there is no quantitative evidence to show that all the Drayang girls are into the transactional sex work. Therefore, the generalized negative perception and stigma attached to their work are likely to increases their vulnerability as many may shy away from HIV prevention services. This is evident from the current HIV case detection gap of 58.2% despite the universal coverage of HIV Testing and Counselling (HTC) services.<sup>29</sup> The global evidence shows the existence of stigma and discrimination among those who engage in sex work and those living with HIV. The low self-esteem, depression, and low quality of life, suicidal, failure in seeking timely care and treatment are some of the most common consequences of those living with HIV.<sup>30-32</sup>

The existence of sexual risk behaviour among the general population and the transactional sex among the Drayang girls coupled with increasing trends of STIs/HIV in Bhutan makes the Drayang girls more vulnerable to HIV infections. The global evidence also tells us that those women who are into the transactional sexual relationship are more likely to have the early sexual debut, longer duration of sexual activity, multiple concurrent sexual partners, remaining with a promiscuous partner.<sup>33-37</sup> The study by Nirgude A<sup>38</sup> also shows that bars girls who have concurrent partners are not using condom consistently as compared with that of non-regular partners.

## **2.2. Justification**

In view of above, the emerging risky sexual behaviour and negative perceptions against the young girls working in the Drayang deserve further exploration to understand the issues in detail. As highlighted despite the existing problems there is very little quantitative information to understand the socio-demographic risk factors, HIV vulnerability, risk behaviour, HIV knowledge and prevalence among Drayang girls although they are considered as the high-risk population in Bhutan. It will also help us to understand the prevalence of transactional sex among the Drayang girls. In this regard, the survey was designed to bridge these information gaps needed for evidence-based targeted interventions.

## **2.3. Objectives**

### **2.3.1. General objective**

The main objective of this study is to analyse the HIV vulnerability and sexual risk behaviours of Drayang girls in three urban districts of Bhutan (Thimphu, Paro and Phuentsholing) to make recommendations for developing appropriate interventions to prevent STIs and HIV transmission among Drayang girls.

### **2.3.2. Specific Objectives**

1. To identify the socio-demographic, socio-economic and socio-cultural factors influencing the sexual risk behaviour of the Drayang girls in acquisition and transmission of STIs/HIV.
2. To assess the basic knowledge on HIV prevention, transmission, and its influence on condom use among the Drayang girls in the acquisition of STIs/HIV.

3. To analyse the biological and behaviours factors that are key for STIs/HIV infection among the Drayang girls.
4. To determine the prevalence of STIs and HIV of the Drayang girls.
5. To make recommendations for developing appropriate interventions to prevent STIs/HIV transmission among the Drayang girls.

## **2.4. Methodology**

This study involves analysing data from the **quantitative survey** conducted prior to this study in Bhutan involving the author of this study, which is a primary data for the current study.

The data analysis is complemented by desk research involving **literature review** and cross-referencing of data and information from studies conducted on same subject in Bhutan and across the globe. (Detail Survey design is presented in annex-3)

### **2.4.1. Literature search strategy**

The relevant literatures on the subject were searched from the Google scholar, PubMed, Medline, E-library of VU University and the KIT library. The websites of Ministry of Health, National Statistical Bureau of Royal Government of Bhutan and the WHO, UNAIDS, World Bank and CDC were referred to get the relevant data.

The several keywords were used to search the literature like "Risk factors and vulnerability", "transactional sex", "HIV", "STIs" "HIV and young age", "cultural factors and HIV", "multiple sexual partnership" and "Concurrent sex", "Alcohol and HIV" and "sexual behaviour", "socioeconomic and HIV", "Proximate determinates", "Drayang girls", "Female sex workers and HIV", "Female sex workers and Syphilis" The keywords were mostly used in phrases combined with the name of the disease and in some cases by a single word.

### **2.4.2. Quantitative study: Design and settings**

This is a cross-sectional descriptive study conducted from May-July 2015 to understand the HIV vulnerability and risk behaviours of Drayang girls. The major urban districts (Thimphu, Paro and Phuentsholing) were included for the study based on the high number of HIV cases and high number of Drayangs in the country. The study was conducted as a part of the program monitoring and supervision activity where my colleague and I were the main



principle investigators (PI). As one of the lead PIs, I was involved from initial stage of protocol development for the study to the implementation, analysis, and report writing. While my colleague was engaged in implementation.

**a) Study population, sampling recruitment**

The four main criteria were set for the sampling of the target population for the survey. A respondent must be: (a) equal to or above 15 years of age; (b) present in the selected Drayang; and (c) must be fulltime singer or dancer in the selected Drayang; and (d) agree to participate in the study. A convenience non-random sampling was used to recruit the respondent.

**b) Data collection tool**

A structured questionnaire consisting of 39 variables was used to collect the information on socio-demographic, knowledge and sexual history of the girls. The author selected the relevant behavioural variables from the past behavioural studies, while the knowledge indicators were taken from the national health survey questionnaire. However, most of the behavioural questions were rephrased based on the target population and to meet the context. We have used the standard protocol and existing registration format to record the STIs (Hepatitis B and Syphilis) and HIV results.

**c) Data processing and analysis**

The research team composed of two PIs and four assistant researchers including the two laboratory personnel. The data collected was double entered, cleaned and checked for validity. HIV test was carried out using rapid diagnostic test kits. Second rapid test conducted if found positive. Final confirmatory test done using enzyme-linked immunosorbent assay (ELISA). Syphilis tested using rapid plasma regain (RPR) and those found reactive were confirmed by THPA test. The hepatitis B was tested using Hepacard- Hepatitis B test kit and result (+ve or -ve) obtained was treated as final.

EpiData software used for data cleaning and analysis. The data were analysed in frequencies, percentages and means. Association between the independent variables and dependent variable were analysed using chi-square test while fisher exact test was done using online easy fisher exact test calculator from social science statistics.<sup>39</sup>

### **2.4.3. Ethical considerations**

All necessary approvals from the Research Ethics Board, Ministry of Health, Royal Government of Bhutan was obtained. Informed consent was sought from the girls and data collected were secured under lock and key. Confidentiality of HIV test result was ensured. Respective counsellors handed over the STIs/HIV test results to respondents during the post-test counselling from the stand-alone VCT centres.

### **2.4.4. Quality assurance**

The research assistants were trained on the research protocol, data collection tools, and data management before the commencement of the study. The data tools are pretested and changes incorporated. The survey findings were triangulated with findings from the literature. The certified laboratory technicians carried out the blood sample collection and lab analysis as per the national standard protocol. STIs/HIV test was carried out as per the laboratory standard protocol.

### **2.5. Critical review of the study design.**

The survey data was collected as part of the routine monitoring and evaluation activity under the National AIDS Control (NACP) program, Bhutan, and it is purely a work-based experience. The critical review for my past study was conducted based on the knowledge and skills gained from this course. This section will reflect upon how the limitations of the study design.

*General and specific objectives:* The general objective of my study was not precise, as it does not link to the problem statement. The research questions are not well linked to general objectives with appropriate technical terms. For example, my general objective states that the purpose of the study was to gather in-depth data to understand the characteristics and behaviour of entertainment bar girls while in continuation; it further says that the study will provide information on the prevalence of STIs/HIV and risk behaviours. So the term behaviour and risk behaviour seems two different things and contradicts each other thus losing the essence of what the study is looking for and how the result will be used. The general objectives should just tell us what the research does and how the result be used.

The review also found that some of the specific objectives were too broad. For example, the first objective of the protocol states that "to study the

demographic profile and sexual behaviour of the bar girls". Therefore, firstly, the term "study" seems too big and is not measurable rather we should have used an active verb such as, to assess or to evaluate. Secondly, the use of demographic profile alone failed to give a clear direction to the researcher because it limits to include important factors. For example, sociodemographic, sociocultural and socioeconomic factors that are vital for influencing the sexual risk behaviour but somehow the survey questionnaires captured some of these variables.

In general, specific objectives should be "SMART" enough to contribute towards the general objectives, and that should ultimately provide the new information to answer the main research questions.

*Methodological limitation:* The mixed methods would have well suited for such a sensitive topic rather than going only for just a quantitative method. It was clear that under such circumstances where the topic is sensitive and hard to research the population, I should have used either purposeful sampling or respondent-driven sampling (RDS) methods. However, the convenient sampling method was used to collect the data. Since it is a convenient sampling approach, the **sample size** calculation by considering the response distribution of 50% with error margin at 5% and confidence level of 95% is not required but described in the protocol.

The lack of random sampling further limits the study. Moreover, the population target in this study is the young girls and women working in the Drayang; therefore, they may not represent the larger population of same age and sex. Furthermore, the three cities were selected purposefully based on the reason of higher number of Drayangs in these areas. Therefore, the findings might be skewed to be generalized among the same population across the country. However, overall response rate was 80% (245) out 306 girls who are the registered employees of the Drayangs at the time of survey in these selected cities. As a result, the samples are more or less representative of the Drayang girls working in this three-city.

One of the drawbacks of the study is that it does not use any conceptual framework to design my study. Therefore, it has not captured some of the important factors that are very important to understand the HIV vulnerability and sexual risk behaviour of the Drayang girls. For example, monthly income, sexual concurrency, intergenerational sex, work related stigma, and

discrimination are some of the variables that were left out of study design. Therefore, factors related to these variables are not analysed.

Survey questionnaires development: The option of a semi-structured interview with both open and close-ended questions was not considered instead the study relied fully on structured and close-ended questions. Therefore, the likelihood of information bias is high. Some of the questions pertaining to 'transactional sex' were phrased as 'commercial sex'; likewise, for 'sex under alcohol intoxication' it was written as 'sex after alcohol'. This may have resulted in information and consequences bias in getting the right information.

Some questions that required ticking multiple answers did not yield much result since respondents did not care to tick multiple relevant answers. As result, most of them are regrouped and recoded. In doing so, some of the information may have lost and might have affected some of the results.

One of the limitations of the questionnaire is letting respondents report on their sexual history in the last 30 days with the assumption that short period give accurate results. However, evidence shows that longer reporting period are more accurate.<sup>40</sup> For example, an intermediate reference interval of two to three months is required to obtain a reliable sexual history. Therefore, the shorter reporting interval may have affected our result thus calling for some bias especially the results under sexual risk behaviour.

## **2.6. Conceptual framework for thesis**

Two conceptual frameworks were used to explore the various factors influencing the HIV vulnerability of the Drayang girls. Although the different framework provides different perspectives on how the individual behaviours are being influenced by various factors. However, the underlying concepts of the frameworks remained the same despite the difference in their objectives and context. The multi-systemic ecological model promulgated by Bronfenbrenner highlights the three major factors such as self-esteem (biological, psychological and behavioural), the family system (within the family) and extra-familial system (outside the family), which influence the sexual behaviours of the adolescents.<sup>41</sup> The framework is illustrated in Annex 3.

The other model was Chen's Child Survival Model (1985) adapted by Kembo J in 2012 to study the vulnerability of HIV infection among the young people.<sup>42</sup> This model is simple and straightforward in explaining the direct and indirect causes of the HIV infection among the young people. It shows underlying determinants such as socio-demographic and economic variables influencing the proximate factors such as behavioural and biological for acquisition and transmission of HIV. Although, there are some key underlying and proximate factors missing but the author provides an option of adding and modifying the framework based on the availability of the data, context, and research objectives.

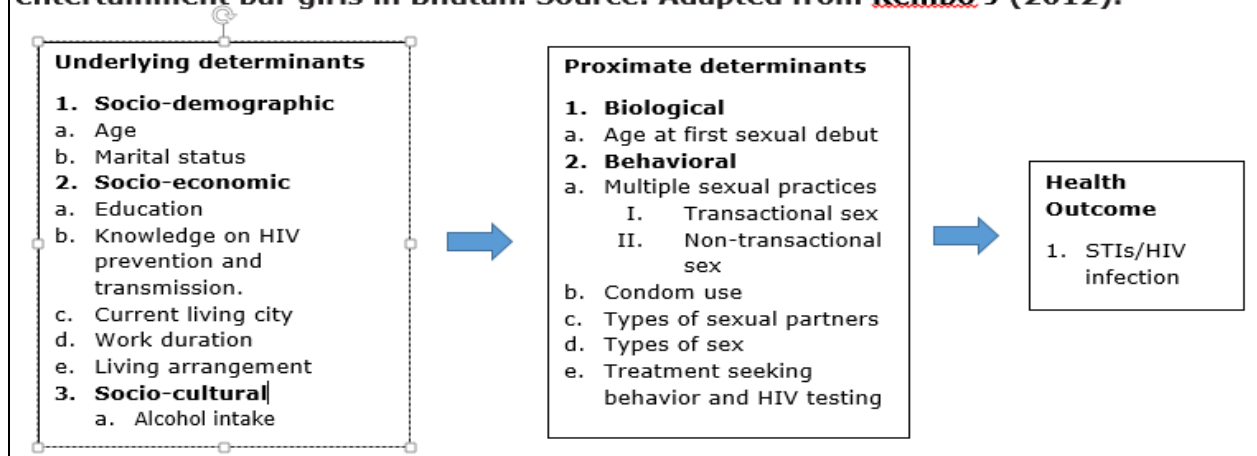
The first framework despite the availability of the various factors, it does not give clear concepts that correlate to my thesis objectives except the factors at an individual level (self-esteem). My thesis's overall objective is to study the HIV vulnerability and risk behaviour of Drayang girls. However, the ecological framework focuses more on adolescents in general context by taking into account the factors within and outside the family system, which are not part of my thesis objectives. These factors are also very broad and cover a wide range of concepts, which are beyond the scope of my study. Therefore, the second conceptual framework was re-adapted to align with the objectives of my thesis.

During the process of re-adaptation, some new variables were added and framework is further expanded without diminishing the original concept. The original concepts used in this model is to understand how the underlying determinants operate through its proximate determinants for certain health outcomes. However, upon adding the new variables such as knowledge on HIV prevention and transmission, alcohol intake and stigma and discrimination as a part of underlying determinants. While under the proximal determinants, we have added transactional and non-transactional sex, types of sex and sexual partners. The new variables were added based on the evidence found from the extensive literature review carried out for the problem analysis.<sup>17, 24, 32, 38</sup>

As shown in Figure 1.7 the modified framework will be used to guide my entire thesis findings and discussion, especially understanding the various factors contributing to the sexual risk and its ultimate outcome. It will also help me carry out an in-depth analysis of how each factor interacts with one another

to understand how it increases or decreases sexual risky behaviour for acquisition and transmission of HIV.

**Fig.1.7 Conceptual framework for factors affecting the risk of HIV infection among entertainment bar girls in Bhutan. Source: Adapted from Kembo J (2012).**



### 3. FINDINGS FROM SURVEY AND LITERATURE REVIEW

The findings from the survey and literature review were presented based on the conceptual frameworks used in this study. In total out of 306 Drayang girls 245 took part in the study.

#### 3.1. Underlying determinants

The underlying determinants such as socio demographic, socio-economic and cultural factors were identified to understand how each of these factors influences the transactional sex.

##### 3.1.1. Socio-demographic factors

**Age:** As shown in Table 1.1 (a) the mean age of respondents is 22 years. The majority of them 71.4% of the respondent fall within the age bracket of 15-24 years and most of them live in Phuentsholing. As shown in Table 1.1 (b), among those who are engaged in transactional sex, 71.5% of them are in younger age group of 15-24 as compared to those in the ages of 25-34. Although, there was a difference between these two age categories in terms of their engagement in transactional sex but this relationship was not significant ( $\chi^2 = 0.050$  df(1)  $p = 0.8223$ ).

**Table 1.1 (a) Sociodemographic characteristic (Age) of Drayang girls in three cities of Bhutan, 2015**

Age	City							
	Thimphu		Paro		Phuntsholing		Total	
	N	%	N	%	N	%	N	%
15-24 years	80	69.0	35	68.6	60	76.9	175	71.4
25-34 years	36	31.0	16	31.4	18	23.1	70	28.6
<b>Total</b>	<b>116</b>	<b>100</b>	<b>51</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>245</b>	<b>100</b>
<i>Mean age</i>							22	

**Table 1.1 (b) Association between transactional sex and age of Drayang girls in three cities of Bhutan, 2015**

Sociodemographic (Age)	Transactional Sex					
	Yes		No		Total	
	N	%	N	%	N	%
15-24 years	50	72.5	125	71.0	175	71.4
25-34 years	19	27.5	51	29.0	70	28.6
Total	69	100	176	100	245	100

P=0.823

*Literature findings:* The studies conducted by Okibo, Choudhry and Hesketh also show the mean age of 16-19 as the most common age among the young women who engaged in transactional sex.<sup>33-35</sup> The several authors have also suggested that age of their study respondents were not associated with the transactional sex.<sup>33,43</sup> These findings are consistent with the survey where age differences among the Drayang girls were not associated with the transactional sex. This clearly shows that sexual behaviour of our study population is not fully governed by the age but by other associated factors as well. Therefore, all the Drayang girls despite the differences in their ages all are liable to face the risk related to transactional sex but younger age seems to be more vulnerable.

**Marital status:** As shown in Table 1.2 (a) the majority of the females working in the Drayangs are currently married (43.7%) while 29.8% are divorced and 26.5% unmarried. The marital status distribution was almost uniform in all the three cities. Concerning marital status, the divorced and unmarried women were more likely to engage in the transactional sex (44.9%) as compared to married individuals (17.4%). Therefore, these differences in marital statuses are significantly associated with the act of transactional sex (Chi2= 27.074 df(2) p= 0.0001). Refer table 1.2 (b)

**Table 1.2 (a) Sociodemographic characteristic (Marital Status) of Drayang girls in three cities of Bhutan, 2015**

Marital status	City							
	Thimphu		Paro		Phuntsholing		Total	
	N	%	N	%	N	%	N	%
Married	48	41.4	27	52.9	32	41.0	107	43.7
Unmarried	29	25.0	10	19.6	26	33.3	65	26.5
Divorced	39	33.6	14	27.5	20	25.0	73	29.8
<b>Total</b>	<b>116</b>	<b>100</b>	<b>51</b>	<b>100</b>	<b>78</b>	<b>99.3</b>	<b>245</b>	<b>100</b>

**Table 1.2 (b) Association between transactional sex and marital status of the Drayang girls in three cities of Bhutan, 2015.**

Sociodemographic (Marital status)	Transactional Sex					
	Yes		No		Total	
	N	%	N	%	N	%
Married	12	17.4	95	54	107	43.7
Unmarried	26	37.7	39	22.2	65	26.5
Divorced	31	44.9	42	23.9	73	29.8
<b>Total</b>	<b>69</b>	<b>100</b>	<b>176</b>	<b>100</b>	<b>245</b>	<b>100</b>

Chi2= 27.074 df(2) p= 0.0000



*Literature findings:* The qualitative study by R. Lorway's among Drayang also mentioned that the presence of unmarried and divorced females as the most common employees of the Drayang.<sup>1</sup> In addition, the Formative Assessment (FA), 2015 in Bhutan found that 35% of Drayang girls were single mothers.<sup>25</sup> The NHS, (2012) showed higher proportion (5.3%) of divorce among the female aged 15 and above as compared to the men (1.6%) of the similar age group in the general population. However, the DHS (2013) found that divorce rate among the women aged 15-24 was 3% and 0.2% among the male of the same age category. The growing divorce cases in Bhutan was also reported in several national media. For example, the Bhutan Broadcasting Service reported the total divorce cases registered in the Supreme Court, where it showed an increasing trend from 2,300 cases in 2012 to 3,070 in 2013.<sup>44</sup>

The prevalence of divorced women in general population and among the Drayang girls are not consistent. However, the increasing trend of divorce cases may expose them to social and economic vulnerabilities as indicated in the survey findings. The studies across the globe also shows that the divorced and unmarried women are more likely to become vulnerable owing to low economic, education and gender differences.<sup>30,34,35</sup> Similarly, a study among rural women in Malawi has also shown the growing extramarital sex because of the material goods and some to take revenge for husband's infidelity.<sup>45</sup>

### **3.1.2. Socio economic factors**

**Education:** Table 1.3 (a) from the survey shows that 26.5% of Drayang girls had primary education (6 years of schooling), 42.4% had middle secondary school (7-10 years of schooling) and 31.0% had no education at all.

As shown in Table 1.3 (b), 36.2% of Drayang girls with middle secondary education have engaged in transactional sex followed by girls with primary education and then no education. However, these differences in education levels were not significant thus; Drayang girls of varied education level are subject to engage in transactional sex depending on the other associated factors. However, there are 44.9% of Drayang girls with middle secondary education who have not engaged in transactional sex as compared to primary and no education. This shows that Drayang girls with higher education were less likely to engage in transactional sex.

**Table 1.3 (a) Socioeconomic characteristic (Education) of Drayang girls in three cities of Bhutan, 2015**

Education level	City							
	Thimphu		Paro		Phuntsholing		Total	
	N	%	N	%	N	%	N	%
No Education	42	36.2	9	17.7	25	32.1	76	31.0
Primary	29	25.0	18	35.3	18	23.1	65	26.5
Middle Sec School	45	38.8	24	47.1	35	44.9	104	42.4
<b>Total</b>	<b>116</b>	<b>100</b>	<b>51</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>245</b>	<b>100</b>

**Table 1.3 (b) Association between transactional sex and education of the Drayang girls in three cities of Bhutan, 2015.**

Socioeconomic (Education)	Transactional Sex					
	Yes		No		Total	
	N	%	N	%	N	%
No education	20	29	56	31.8	76	31
Primary	24	34.8	41	23.3	65	26.5
Middle secondary	25	36.2	79	44.9	104	42.4
<b>Total</b>	<b>69</b>	<b>100</b>	<b>176</b>	<b>100</b>	<b>245</b>	<b>100</b>

*Chi2= 3.468 df(2) p= 0.1766*

*Literature findings:* As shown in the survey findings, the recent FA (2015) in Bhutan also showed that majority of the Drayang girls were low educated and some illiterate.<sup>24</sup> The low education among the young women working in bars and karaoke was mentioned in the SBNS(2011)<sup>34</sup> and in a study by Guiella.<sup>35</sup> The cross-sectional studies among the transactional sex workers have also shown that there is no association between education and transactional sex.<sup>30, 39</sup> The statistical significance from the literature and survey is consistent showing no association. However, the further analysis shows that those Drayang girls who have not engaged in transactional sex and with higher education are less likely to engage in transactional sex. This indicates an existence of some association between education and transactional sex.

**Knowledge on HIV prevention and transmission:** The knowledge on HIV prevention and transmission was analysed among all the Drayang girls including those who have not engaged in transactional sex. As shown in Table 1.4 (a) about 36.7% still perceived that person would get HIV from mosquito bites and 22% said they don't know. The transmission of HIV through sharing of food was perceived as a cause by 31.4% of the respondents. Some respondents (14.5%) believed that healthy person would not have HIV infection while many said they don't know. The knowledge on being faithful to

one partner and using a condom consistently was high with 84.5% and 93.5% respectively.

However, the comprehensive knowledge on HIV prevention and transmission was just 29% (N=245). It measures on how respondents are able to answer correctly the two main ways of HIV prevention. For example, consistent condom use, being faithful to one partner, knowing that healthy looking person will transmit HIV were some of the indicators. The other aspects of HIV knowledge indicators includes disagreeing on two common misconception about HIV transmission. For example, getting HIV from mosquito bites and sharing food with infected person. This clearly shows that comprehensive knowledge on HIV is low among the Drayang girl aged 15-34.

**Tbale 1.4 (a) Basic knowledge on prevention and transmissison of HIV and attitude towards PLHIV among the Drayang girls, Bhutan, 2015**

Indicators (N=245)	Yes		No		Don't know	
	N	%	N	%	N	%
People reduce their chance of getting HIV/AIDS by having just one faithful uninfected sex partner.	207	84.5	12	4.9	26	10.6
People reduce their chance of getting the HIV/AIDS by using condom every time they have sex.	229	93.5	4	1.7	12	4.9
People can get the HIV/AIDS by sharing food with a person who has AIDS	27	11.0	168	68.6	50	20.4
People get the HIV/AIDS from mosquito bites.	90	36.7	101	41.2	54	22.0
It is possible for a healthy looking person to have HIV/AIDS.	153	62.5	35	14.3	57	23.3

*Literature findings (Knowledge on HIV prevention and transmission):* The similar findings were observed from the literature review. For instance, the qualitative part of the FA (2015) among the Drayang girls in Bhutan showed an existence of low knowledge on STIs/HIV prevention. This study also highlighted that majority of Drayang girls are not even aware of the main mode of HIV transmission.<sup>25</sup> However, the findings do not give any proportions thus the low knowledge was analysed in general among the girls.

The NHS (2012) shows 49.3% and 69.9% (n=17,409) of them knew that HIV cannot be transmitted from mosquito bites and sharing food.<sup>46</sup> These results are obtained after regrouping the two-age category (15-24 & 25-34) from NHS, 2012 to compare with our survey findings. Therefore, it is evident from both the results from survey and NHS (2012) show mosquito bites and sharing

food as the most common misconception in respect to HIV transmission. Further the NHS (2012) shows that the comprehensive HIV knowledge among the general population aged 15-34 was just 22.7%.<sup>46</sup> This shows that the overall comprehensive knowledge on HIV was higher among Drayang girls by 6.3%. However, in general the comprehensive knowledge was low in both the populations thus the likelihood of prevailing misconceptions may increase their sexual risk behaviours.

**Association between knowledge on HIV and education:** Table 1.4 (b) shows that comprehensive knowledge on HIV increases with the increases in the level of education. When asked about whether people get the HIV/AIDS from mosquito bites, 54.5% of the respondents with middle secondary education level responded correctly followed by the primary and no education group. A similar trend was observed in the case of knowledge indicator on whether healthy person will not have HIV, where 42% of those with middle secondary and primary education answered correctly and non-education with just 14.3%. Further, the middle secondary and primary education were mostly able to answer the questions on sharing food with an infected person will transmit HIV. These difference were found significant at (Chi2= 17.299 df(4) p= 0.0017) and (Chi2= 12.788 df(4) p= 0.0124) respectively. Meaning comprehensive knowledge increases with the increase in education level.

<b>Table 1.4 (b) Relationship between education level and knowledge on HIV transmission</b>								
<b>Indicators</b>	<b>Agree (Yes)</b>		<b>Disagree (No)</b>		<b>Don't know</b>		<b>Total</b>	
<b>Education level</b>								
<b>People get the HIV/AIDS from mosquito bites.</b>								
No education	25	27.8	18	17.8	33	42.6	76	31
Primary	25	27.8	28	27.7	12	22.2	65	27
Middle secondary	30	33.3	55	54.5	19	35.2	104	42
<b>Total</b>	90	100	101	100	54	100	245	100
<b>Chi2= 17.299 df(4) p= 0.0017</b>								
<b>Education level</b>								
<b>People can get the HIV/AIDS by sharing food with a person who has AIDS</b>								
No education	11	40.7	46	27.4	19	38	76	31
Primary	5	18.5	51	30.4	9	18	65	27
Middle secondary	11	40.7	71	42.3	22	44	104	42
<b>Total</b>	27	100	168	100	50	100	245	100
<b>Chi2= 5.325 df(4) p= 0.2555</b>								
<b>Education level</b>								
<b>It is possible for a healthy looking person to have HIV/AIDS.</b>								
No education	36	23.5	5	14.3	25	43.9	76	31
Primary	39	25.5	15	42.9	11	19.3	65	27
Middle secondary	68	44.4	15	42.9	21	36.8	104	42
<b>Total</b>	153	100	35	100	57	100	245	100
<b>Chi2= 12.788 df(4) p= 0.0124</b>								

*Literature findings:* As shown in survey findings, the studies by Rahman (2009), Tuntufye (2014) and Fako (2010) also showed that knowledge on HIV increases with the increase in education level of an individual.<sup>47-49</sup>

### **Current living city:**

The current living city was not shown separately in tables because it is already categorized into three cities as shown in the results above for other sociodemographic factors. About 47.3% (116) of the respondents live in Thimphu, 31.8% (78) in Phuentsholing and then 20.81% (51) in Paro respectively. As shown in Table 1.5 (a) the current living city were significantly associated with the transactional sex among the Drayang girls (Chi2= 8.532 df(2) p= 0.0140). This shows that bigger the city greater the transactional sex, where Thimphu and Phuentsholing are the major commercial hub of Bhutan.

**Table 1.5 (a) Association between transactional sex and current Living city of Drayang girls in three cities of Bhutan, 2015.**

Socioeconomic (Current living city)	Transactional Sex					
	Yes		No		Total	
	N	%	N	%	N	%
Thimphu	29	42	87	49.4	116	47.3
Paro	9	13	42	23.9	51	20.8
Phuntsholing	31	44.9	47	26.7	78	31.8
<b>Total</b>	<b>69</b>	<b>100</b>	<b>176</b>	<b>100</b>	<b>245</b>	<b>100</b>

*Chi2= 8.532 df(2) p= 0.0140*

*Literature findings:* The SBNS (2011) highlights that many young girls working in the entertainment venues such as bars, discos, karaoke, and Drayangs are mostly migrated from rural to an urban area for livelihood. As result, many young girls land up in the Drayangs because many don't get gainful employment. The unemployment rate in Bhutan was 4.7% as per the 2013 gender and employment report. However, the urban employment rate was much higher than the rural area and it is concentrated among the youth between the ages of 20-24. This situation is further aggravated when the higher unemployment rate of 6.2% are among the females as compared to the male (3.8%).<sup>50</sup> Therefore, the high urban unemployment because of rural-urban migration has a potential to increase the vulnerability of the Drayang from exposing to sexual risk behaviour. The BSS (2008) and SBNS (2011) and the qualitative study by R. Lorway in Bhutan depict the growing transactional sex among young and middle-aged people in these major urban areas especially Thimphu and Phuentsholing.<sup>2,21,23</sup>

**Work duration:** As shown in Table 1.6 (a) the majority of the Drayang girls (65.7%) have worked less than 8 months while 34.3% have worked more than 8 months with the minimum work duration of one month and a maximum of 25 months. The mean work duration is 8.4 months. There is no association between the differences in work duration and transactional sex (Table 1.6 b). This shows that despite the number of working months or years the likelihood of Drayang girls engaging in transactional sex depends on other factors.

**Table 1.6 (a) Socioeconomic characteristic (Work Duration) of Drayang girls in three cities of Bhutan, 2015**

Work duration	City							
	Thimphu		Paro		Phuntsholing		Total	
	N	%	N	%	N	%	N	%
<=8 months	72	62.1	39	70.0	50	64.1	161	65.7
>8 months	44	37.9	12	30.0	28	35.9	84	34.3
<b>Total</b>	<b>116</b>	<b>100</b>	<b>51</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>245</b>	<b>100</b>

**Table 1.6 (b) Association between transactional sex and work duration of Drayang girls in three cities of Bhutan, 2015.**

Socioeconomic (Work duration)	Transactional Sex					
	Yes		No		Total	
	N	%	N	%	N	%
<=8 Months	47	68.1	84	62.2	131	64.2
>8 Months	22	31.9	51	37.8	73	35.8
<b>Total</b>	<b>69</b>	<b>100</b>	<b>135</b>	<b>100</b>	<b>204</b>	<b>100</b>

*p* = 0.4061

**Living arrangement:** Table 1.7 (a) shows the living arrangement of Drayang girls. It is found that 29.4% of them are living with (others) husbands and parents while 27.3% of them were managing their own accommodations and the remaining 18% with friends, 16% with relatives and 8.7% stays in hostel managed by Drayang owners. Most of them are concentrated in two major cities such as Thimphu (47.3%) and Phuntsholing (31%). As shown in Table 1.7 (b), the socio-economic characteristics such as living arrangements were compared with the transactional sex, the Drayang girls who are managing their own accommodation are more engaged in transactional sex (32.4%) as compared to those staying in hostels and others. Similarly, those girls who share their accommodation with the friends are more in transactional sex as compared to those staying in hostels, relatives, and parents. These differences are found to be significant (Chi<sup>2</sup>= 19.427 df (4) *p*= 0.0006). This means that

those who have to pay their house rents and other living expenses are more likely to be engaged in transactional sex as compared to those who staying with parents, relatives, hostels and friends.

**Table 1.7 (a) Socioeconomic characteristic (Living arrangement) of Drayang girls in three cities of Bhutan, 2015**

Living arrangement	City							
	Thimphu		Paro		Phuntsholing		Total	
	N	%	N	%	N	%	N	%
Self	24	20.9	12	24.0	30	38.5	66	27.3
Relatives	25	21.7	5	10.0	10	12.8	40	16.5
Friends	21	18.3	10	20.0	13	16.7	44	18.2
Hostel	8	6.1	4	6.0	12	15.4	21	8.7
Others	38	33.0	20	40.0	13	16.7	71	29.4
<b>Total</b>	<b>116</b>	<b>100</b>	<b>51</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>245</b>	<b>100</b>

**Table 1.7 (b) Association between transactional sex and living arrangement of Drayang girls in three cities of Bhutan, 2015.**

Socioeconomic (Living arrangement)	Transactional Sex					
	Yes		No		Total	
	N	%	N	%	N	%
Self	22	32.4	44	25.3	66	27.3
Relatives	15	22.1	26	14.9	41	16.9
Friends	18	26.5	26	14.9	44	18.2
Hostel	7	10.3	14	8	21	8.7
others	6	8.8	64	36.8	70	28.9
<b>Total</b>	<b>68</b>	<b>100</b>	<b>174</b>	<b>100</b>	<b>242</b>	<b>100</b>

*Chi2= 19.427 df(4) p= 0.0006*

Literature findings: The qualitative study by R. Lorway showed financial hardship as one of the main reasons for engaging in transactional sex by the Drayang girls.<sup>17</sup> Although, there is no study informing the economic vulnerability of the Drayang girls but according to the sources from print media these girls are paid an average salary of Nu. 6000 per month (less than USD 100) without including the bonus that they earn from the song request from the customers. This finding from the survey was consistent with the result of R. Lorway's qualitative study, where it presents that difficulty in paying the house rent in these urban cities of Bhutan as one of the reasons for engaging in transactional sex by Drayang girls.<sup>1</sup> The study by Dunkle<sup>51</sup> and Aral<sup>52</sup> tells us that economic stresses coupled with low wages, unemployment, and poverty as one of the driving forces for young women to use sex as a

means for survival. On the other hand, the case might be different for some women who uses transactional sex as the means to lead a luxurious life. For example, the qualitative study by Stoebnau et al showed a linkage of transactional sex among women in South Africa to consumerism and means to extract resources.<sup>42</sup>

### 3.1.3. Sociocultural factors

**Alcohol consumption:** The alcohol consumption was considered as one of the factors that influence the sexual risk behaviour in acquisition and transmission of STIs and HIV infection. As shown in Table 1.8 (a) 51.8% (n=245) Drayang girls are active drinkers and among them, 77.2% drinks more than three times a week and the remaining 22.8% drinks less than that. The findings also show an almost similar drinking pattern across three districts. It was also found that 60.6% (n=77) of the active drinkers had engaged in sexual activity and the condom use was just 15.6%. In this analysis, I have included only those who drink alcohol 51.8% (n=127). Although there is no association between the alcohol and condom use but a signification association between alcohol use and casual sex is established ( $\chi^2=6.888$  df(1)  $p=0.0087$ ). This means alcohol use does not necessarily influence the condom use but it does influence casual sex. Higher the intake of alcohol more likely to engage in casual sex (refer Table 1.8 (b)).

**Table 1.8 (a) Alcohol consumption among the Drayang girls in three cities of Bhutan, 2015**

Alcohol consumption	City							
	Thimphu		Paro		Phuentsholing		Total	
	N	%	N	%	N	%	N	%
<b>Frequency of alcohol drinking per week in last month.</b>								
>=3 times/week	11	16.4	5	25.0	13	32.5	29	22.8
<3 times/week	56	83.6	15	75.0	27	67.5	98	77.2
<b>Total</b>	67	100.0	20	100.0	40	100.0	127	100.0
<b>Sex under alcohol intoxication</b>								
Yes	31	46.3	9	45.0	17	42.5	57	44.9
No	36	53.7	11	55.0	23	57.5	70	55.1
<b>Total</b>	67	100.0	20	100.0	40	100.0	127	100.0
<b>Condom use during sexual intercourse after alcohol</b>								
Yes	7	22.6	2	22.2	3	17.7	12	21.1
No	24	77.4	7	77.8	14	82.4	45	78.9
<b>Total</b>	31	100.0	9	100.0	17	100.0	57	100.0



**Table 1.8 (b) Association between alcohol and transactional sex**

Alcohol intake	Transactional sex				Total	%
	Yes	%	No	%		
Yes	45	65.2	82	46.6	127	51.8
Not at all	24	34.8	94	53.4	118	48.2
<b>Total</b>	69	100	176	100	245	

**Chi2= 6.888 df(1) p= 0.0087**

*Literature findings:* Similar to the survey findings, the qualitative study by R. Lorway also showed the use of alcohol by the men and women in the Drayang, karaoke and discos to engage themselves in a sexual network.<sup>1</sup> The result from a nationally representative survey in Africa also showed that alcohol-dependent women were two times likely to report risky sexual behaviour.<sup>53</sup> The evidence drawn from several kinds of literature also showed a relationship between alcohol intoxication and unsafe sex, sexual violence, and poor decision-making<sup>54-57</sup> The study in Vietnam among the young people highlighted a positive correlation between alcohol use and their engagement in the sexual risk behaviour.<sup>58</sup> The national behavioural survey by WHO in India also informed increasing trend of alcohol use among the female sex workers, their clients, and other high-risk groups.<sup>59</sup> These findings clearly indicates that alcohol does influence the sexual risk behaviour of an individual.

### **3.2. Proximal determinants**

The survey identified sexual risk behaviour such as age at first sexual debut, transactional sex, non-transactional sex, condom use, alcohol intake, type of sexual partners and types of sex.

#### **3.2.1. Age at first sexual debut**

As shown in Table 1.9 (a) below, the mean age for the first sexual debut was 17 years and about 73.1% of the girls had undergone their first sexual experience when they are between the ages of 16-20 years old. However, 14.3% have experienced their first sexual intercourse at a very young age that is between 10-15 years.

**Table 1.9 (a) Age category of first sexual debut of the Drayang girls in three cities of Bhutan, 2015**

Biological Characteristics	City							
	Thimphu		Paro		Phuentsholing		Total	
	N	%	N	%	N	%	N	%
<b>Age at first sexual experiences (n=245)</b>								
10-15 years	18	15.5	7	13.7	10	12.8	35	14.3
15-20 years	87	75.0	31	60.8	61	78.2	179	73.1
20-25 years	11	9.5	13	25.5	7	9.0	31	12.7
<b>Total</b>	116	100.0	51	100.0	78	100.0	245	100.0

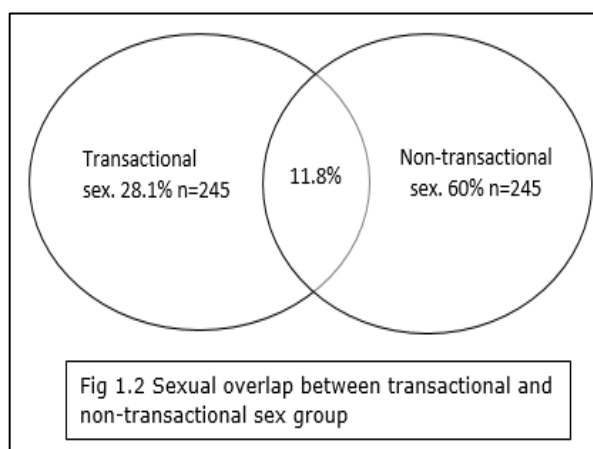
*Literature findings:* However, the WHO report on SRH-2 by Kaye Wellings showed that mean the age of 16.5 years among the young women aged 15-24 in Nepal.<sup>60</sup> There is no information regarding the mean age of young women's age of first sexual debut in Bhutan. By taking into account some cultural similarities and geographical locations between the two countries, it was assumed from the survey findings that the median age for first sexual debut among the young women in Bhutan as 17 years. In addition, the DHS (2013) in its entire data set showed about 10,462 (32%) were women who had their first pregnancy at the age of 18 years and below.<sup>23</sup> These findings are more or less consistent with the survey results, where 14.1% of the Drayang girls have experienced their first sexual debut before 15 years.

This shows that young age sexuality among the women in Bhutan, which is one of the risk factors for HIV infections. This is evident from the NACP epidemic update report (2015) where the majority of the reported HIV cases among the females lies between ages of 15-35.<sup>29</sup> The DHS (2013), also showed that young age sexuality in Bhutan as a growing challenge in relation to early pregnancy, HIV, and STIs.<sup>23</sup> The young females are considered vulnerable for HIV because of an immature vaginal mucosa which ruptures during the sexual intercourse thus exposing its larger surface area to the infection.<sup>61</sup> This can be one of the reasons where female aged 15-24 years are disproportionately infected, which was shown in UNAIDS global report, 2010 and 2014.<sup>62</sup>

### 3.2.2. Multiple sexual partnerships

As shown in Table 10 out of 245 sexually active females, 28.2 % reported to have engaged in transactional sex during the last thirty days. Among 69 of them who engaged in transactional sex, 56.5% had more than three partners while remaining 43.48% has less than or equal to three but greater than one. It was found that larger proportion (66.7%) of girls working in Paro are having sexual partner more than three as compared to Phuentsholing (58.1%) and Thimphu (51.7%). However, there is not much difference between the three cities in terms of number of sexual partners.

Also shown in Table 10, 60% (n=96) of Drayang girls have engaged in non-transactional sex. Among them, 55.1% had more than three sexual partners during the last thirty days. When compared to the three cities the pattern of distribution was similar to that of transactional sex where more females (58.9%) in Paro have three non-transactional sexual partners (marital, non-marital and extramarital sex) without exchanging any gifts or money. As shown in Figure 1.2 11% of them have engaged both in transactional and non-transactional sex. This clearly shows the existence of sexual overlap between the transactional and non-transactional sex.



**Table 10 Behavioral characteristics (transactional sex & non-transactional sex) of the Drayang girls in three cities of Bhutan, 2015.**

Behavioral Characteristics	City							
	Thimphu		Paro		Phuentsholing		Total	
	N	%	N	%	N	%	N	%
<b>No. of transactional sex in last 30 days (n=69)</b>								
<=3 times	14	48.3	3	33.3	13	41.9	30	43.5
>3 times	15	51.7	6	66.7	18	58.1	39	56.5
<b>Total</b>	29	100.0	9	100.0	31	100.0	69	100.0
<b>No. of non- transactional sex in last 30 days (n=147)</b>								
<=3 times	32	42.1	16	41.0	18	56.3	66	44.9
>3 times	44	57.9	23	59.0	14	43.8	81	55.1
<b>Total</b>	76	100.0	39	100.0	32	100.0	147	100.0

*Literature findings:* The qualitative study by R. Lorway showed the evidence of exchanging sex with the cash and material gifts like mobile phones and household items among the Drayang girls.<sup>1</sup> The SBNS (2011) highlights that young women preferred to have multiple sexual partners to ensure a continual flow of money and material items while for men it was simply a sexual pleasure and variety.<sup>2</sup> Besides the occurrence of transactional sex in Bhutan, the multiple sexual relationships such as, extramarital and non-extramarital sex among the Bhutanese population is also mentioned in GPS (2006), BSS (2008) and SBNS (2011).<sup>1,2,21</sup> The DHS (2013) highlights the emergence of social media and entertainment venues like Drayangs, discos and karaoke are considered as one of the risk avenues where it encourages both the young and old age urban population for unsafe sex and other antisocial behaviour. The report further states that these developments brought in by socio economic development are the key factors for growing extramarital affairs and multiple sexual practices in Bhutan.<sup>23</sup>

The global evidence also tells us that those women who are into the transactional sexual relationship are more likely to have the early sexual debut, multiple concurrent sexual partners, remaining with a promiscuous partner and history of STIs.<sup>33-38</sup> The respondent driven sampling survey, 2013 in Thailand also showed that high HIV prevalence among the non-venue based informal sex workers as compared with the venue based formal sex workers<sup>54</sup>. The study by Zembe<sup>5</sup>, Dunkle<sup>6</sup> and Muula AS<sup>63</sup> also showed that transactional sex involves a greater act of intergenerational sex, concurrent sexual partners, and unprotected sex. The study by Morris and Maher D draws clear link of transactional sex and HIV infection.<sup>64,65</sup> This indicates that young women are more vulnerable from STIs/HIV infection if ever engaged in an unsafe sexual relationship. These sexual network complexities coupled with low condom use are more likely to increase the risk of HIV acquisition among the Drayang girls who are sexually active.

### **3.2.3. Condom usage**

As shown in Table 11, the condom use during the transactional sex among the Drayang girls is low despite the high-risk behaviour. Out of 69 Drayang girls who engaged in transactional sex works, 42% had not used condom and 21.74% have used it inconsistently. The case was similar among those who are active in non-transactional sex where 53.7% have not used the condom and 25.85% have used inconsistently. Therefore, the overall condom use

between both the groups were low. Further, the analysis showed that condom use among those who engaged in transactional sex was higher than non-transactional sex. In, addition the condom use was higher among Drayang girls of Thimphu (48.3%). The condom use among during the multiple sex partners among the general population was 20.6% as per the BMIS (2010) that is consistent with the non-transactional sex.<sup>66</sup>

**Table 11 Behavioral characteristics (condom use) of the Drayang girls in three cities of Bhutan, 2015**

Behavioral Characteristics	City							
	Thimphu		Paro		Phuentsholing		Total	
	N	%	N	%	N	%	N	%
<b>Condom use during transactional sex in last 30 days</b>								
All of the time	14	48.3	1	11.1	10	32.3	25	36.2
Some of the time	5	17.2	2	22.2	8	25.8	15	21.7
Not Used	10	34.5	6	66.7	13	41.9	29	42.0
<b>Total</b>	29	100.0	9	100.0	31	100.0	69	100.0
<b>Condom use during non-transactional sex in last 30 days</b>								
All of the time	19	25.0	4	10.3	7	21.9	30	20.4
Some of the time	17	22.4	14	35.9	7	21.9	38	25.9
Not used	40	52.6	21	53.8	18	56.3	79	53.7
<b>Total</b>	76	100.0	39	100.0	32	100.0	147	100.0

However, there is no association between the comprehensive knowledge and condom use among those engaged in transactional and non-transactional sex as shown in Table 12 (a) and 12 (b) respectively.

**Table 12 (a). Association between comprehensive knowledge and condom use among transactional sex (N=69)**

Comprehensive Knowledge	Condom use		Total
	Yes	No	
Yes	1	4	5
No	24	40	64
<b>Total</b>	25	44	69 (Grand Total)

The Fisher exact test statistic value is 0.646466. The result is *not* significant at  $p < .05$ .

**Table 12 (b). Association between comprehensive knowledge and condom use among non-transactional sex (N=147)**

Comprehensive Knowledge	Condom use		Total
	Yes	No	
Yes	4	12	16
No	26	105	131
<b>Total</b>	30	117	147 (Grand Total)

The Fisher exact test statistic value is 0.742093. The result is *not* significant at  $p < .05$ .

*Literature findings:* When explored to see the association between the knowledge and condom use, it was found that in many cases the accuracy of knowledge was not associated with the level of condom use. For instance, the study by Lammers J and Macintyre K found that a positive correlation between knowledge and condom use.<sup>67,68</sup> However, the evidence from the studies conducted by Essien EJ and William BG showed a negative correlation between the knowledge and condom use. (69,70) The study by Lammers (2013) evidence from National HIV Surveys in Africa showed that most likely reason for such a mixed result could be due to use of different measures for HIV knowledge and their consideration of different outcome, which are either gender or context specific. The study further states that accessibility of the condom by the user was also cited as one of the common reason for low condom use despite the high knowledge.<sup>67</sup>

The findings from the FA (2015) among the high-risk women in Bhutan highlighted that access to condom in the hotspots was limited. It was even mentioned that those hotels, which are assumed to be operating the sex workers, are not even willing to keep the condom box distributed by the NACP to keep away from a police raid.<sup>25</sup> This can be one of the likely reason for condom use below 50% as indicated in our survey. The qualitative studies across the globe tell us that in the transactional sex women often claim that they accept the sex as per the desire of their male partners due to economic consideration.<sup>6,51</sup> However, in some studies, the condom use was higher among the female sex workers but low among those who engaged in casual and extramarital sex. Lammers (2013) in Africa showed the similar findings in the study, where it mentioned that condom use does not necessary depends on the knowledge on HIV but more importantly depends upon accessibility.<sup>67</sup>

#### **3.2.4. Type of sex partners**

As shown in table 12 below out of 245 sexually active Drayang girls 23.3% had sex with strangers, 59.2% with boyfriends and 38.8% with husbands. All of them had sex mostly with their boyfriends followed by strangers. Interestingly out of 107 married women, 37% had sex with boyfriends and 7.5% with strangers. Overall, divorced women are more sexually active as compared to the unmarried and married. This indicates the occurrence of multiple sexual partnerships. There is a sexual overlap among all the three marital statuses as the overall percentage is more than 100 in each case.

Marital status	N	Sexual partners						Total	
		Stranger		Boyfriend		Husband		n	%
		n	%	n	%	n	%		
Married	107	8	7,5	37	34,6	95	88,8	140	130,8
Unmarried	65	19	29,2	52	80,0	0	0,0	71	109,2
Divorced	73	30	41,1	56	76,7	0	0,0	86	117,8
<b>Total</b>	<b>245</b>	<b>57</b>	<b>23,3</b>	<b>145</b>	<b>59,2</b>	<b>95</b>	<b>38,8</b>	297	<b>121.2**</b>

Note: \*\*Total percentage is more than 100 because the data is being clubbed after analyzing each variable out of the total respondent (N=245) and only yes respondents were included. The differences in % against each variables are assumed as sexual overlap among married, unmarried and divorced because some have respondent all three or two variables.

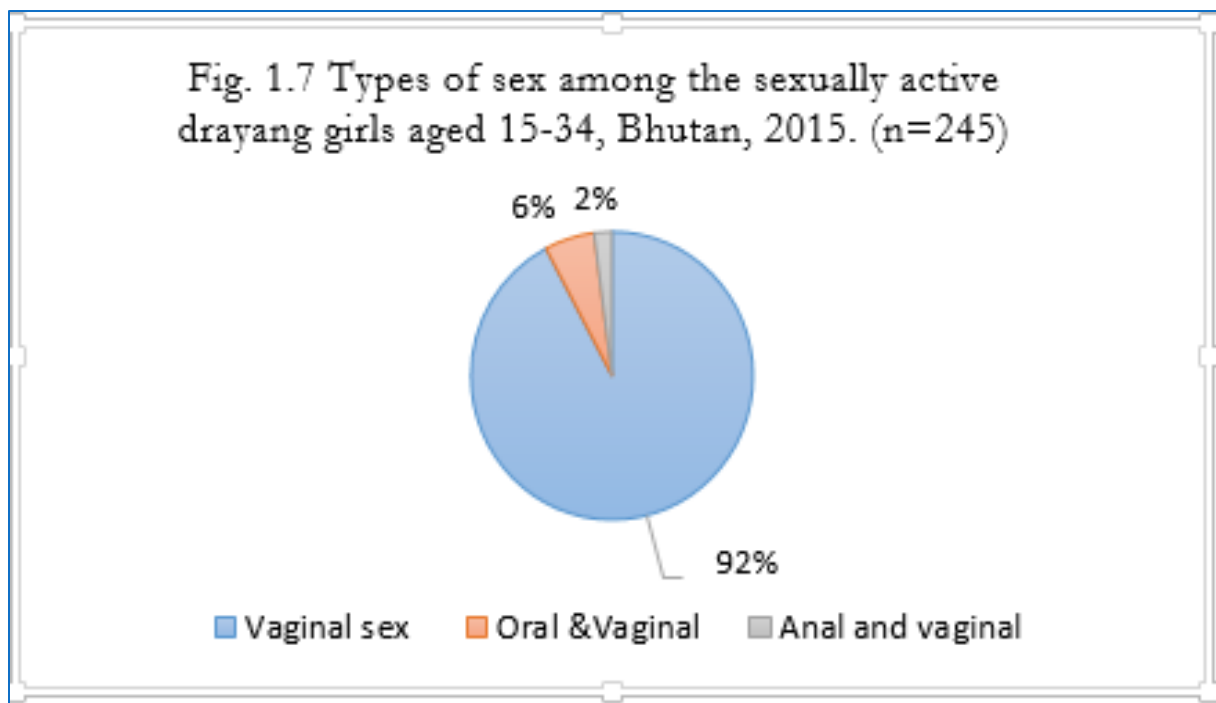
Table 13 below describes the prevalence of transactional sex. Out of 69 Drayang girls who engaged in transactional sex 17.4% are married, 37.7% unmarried and 44.9% divorced. Among them, the majority of their transactional sex partners are boyfriends as compared to strangers. In the case of divorced and unmarried, it was assumed that there is a sexual overlap because some of the unmarried have responded both the stranger and boyfriend and the case was similar for divorced unlike married. As a result, the total percentage is more than 100. However, the exact number of sexual overlap could not be determined due to no specific variable to measure in our survey not could not be separated.

Marital status	N	%	Sexual partners				Total	
			Stranger		Boyfriend		n	%
			n	%	n	%		
Married	12	17.4	3	25.0	9	75.0	12	100.0
Unmarried	26	37.7	12	46.2	26	100.0	38	146.2
Divorced	31	44.9	20	64.5	25	80.6	45	145.2
<b>Total</b>	<b>69</b>	<b>100</b>	<b>35</b>	<b>50.7</b>	<b>60</b>	<b>87.0</b>	95	137.7

Note: \*\*Total percentage is more than 100 because the data is being clubbed after analyzing each variable out of the total respondent (N=69) and only yes respondents were included. The differences in % against each variables are assumed as sexual overlap among married, unmarried and divorced because some have respondent all three or two variables.

### 3.2.5. Type of sex practiced by Drayang girls

Figure 1.7 shows the prevalence of anal sex among the Drayang girls in three cities, Thimphu, Phuentsholing and Paro. The majority of them responded having vaginal sex (92%) and 5.7% reported oral & vaginal while only 2% have anal sex respectively.



### 3.3. Health Outcome

#### 3.3.1. Prevalence of HIV/STIs

Table 1.6 presents the test results of HIV, hepatitis B and Syphilis among 245 females. The point prevalence of 0.8% was determined for HIV, 3.3% for syphilis and 7.8% for hepatitis B respectively. However, when asked about any STIs in last twelve months 18.7% (n=245) of them reported having experienced at least one form of STIs. Out of 45 who experienced STIs, 80% of them reported having experienced bad abnormal discharge from their vagina and 24.44% (n=45) told that they had developed sore or ulcer near their vagina in last twelve months.



**Table 14. Prevalence of HIV and STIs among Drayang girls in three cities, Bhutan, 2015**

Indicators	City							
	Thimphu (N=115)		Paro (N=51)		Phuentsholing (N=78)		Total (N=245)	
	N	%	N	%	N	%	N	%
<b>A. Result from the onsite testing</b>								
<b>HIV</b>								
Positive	1	0.9	0	0	1	1.28	2	0.82
Negative	114	99.1	54	100	77	98.72	243	99.18
<b>Hepatitis B</b>								
Positive	11	7.0	4	8	4	6.41	19	7.76
Negative	107	93.0	47	92	69	88.46	238	91.9
<b>Syphilis</b>								
Positive	2	0.9	0	0	6	7.69	8.00	3.27
Negative	113	98.3	51	100	72	92.31	238.00	97.14
<b>B. Result from the survey questionnaires</b>								
<b>Any STIs in last 12 months</b>								
Yes	31	26.7	7	13.7	7	8.97	45	18.4
No	85	73.3	44	86.3	71	91.03	200	81.2
<b>Bad abnormal discharge in last 12 months</b>								
Yes	34	29.3	13	25.5	5	6.4	52	21.2
No	82	70.7	38	74.5	73	93.6	193	78.8
<b>Sore or ulcer infection near vagina/anus</b>								
Yes	7	6	6	11.8	1	1.3	14	5.7
No	109	94	45	88.2	77	98.7	231	94.3

*Literature findings:* The specific literature on HIV and STIs positivity among the transactional sex workers in Bhutan was not found. Therefore, the example from the studies with similar population characteristics were cited. For example, the findings from IBBS (2011) in Nepal showed higher HIV prevalence among the informal sex workers such as non-venue based (transactional sex and street-based sex workers), which accounts for 4.2% against 1.2% among the FSW operating from established venues.<sup>71</sup> Similarly, in Vietnam, the bio-behavioural survey by Le TT showed high HIV prevalence among the street based sex workers than the venue-based (10.6% vs 6.7%). The average HIV prevalence among street based and venue based in Vietnam accounts to 8.6%.<sup>72</sup> The national health survey, 2012 also showed that current HIV prevalence among the population aged 15-19 stands at <0.1%.<sup>46</sup> The evidence from India also showed out of 27,007 female who are engaged in sex work, one-half of them had experienced one or more symptoms of STI in the last one year.<sup>73</sup> The IBBS (2012) from Nepal also showed that 0.3% of female sex workers infected with syphilis.<sup>71</sup> The evidence from a behavioural and biomarker survey among the 4324 female sex workers in Indonesia showed a high (14.5%) prevalence of active syphilis.<sup>74</sup>

### **Treatment seeking behaviour**

The treatment-seeking rate among those who experienced above-mentioned STIs is 82.22%. Similarly, the HIV testing rate was also about 71.84% of the total 245 sexually active girls ever tested for HIV and 70.6% of them have received the test results. The KAP survey, 2013 among the vulnerable population showed an overall HIV testing rate of 57.2% in last 12 months.(KAPB) This shows that the testing rate among Drayang girls were higher than other vulnerable groups such as truckers, taxi drivers and migrant worker.

## **4. DISCUSSION**

The findings indicate that underlying determinants such as sociodemographic, socioeconomic and sociocultural factors are contributing to the vulnerability of the Drayang girls thus ultimately influencing the proximate determinants. Therefore, the proximate determinants such as behaviour and biological factors increase the likelihood of STIs/HIV infection.

The conceptual framework for this study was adapted and modified based on the thesis objectives. The framework helped to analyse both the literature and survey findings in a systematic way. The framework presented the factors that are needed for the study and accordingly able to draw a relationship between each of them. This indeed helped me to understand which factors influences what and how it results in giving the desired health outcome. The only challenge was with regard to my survey questionnaires where I am not able to stratify adequately.

### **4.1. Proximal determinants**

Our analysis focused on identifying biological and behaviour risk factors of the Drayang girls in acquisition and transmission of STIs/HIV. Age at first sexual debut, multiple sexual partnerships, and low condom use among the Drayang girls were some of the prominent risk factors for STIs/HIV infection shown in the survey.

#### **4.1.1. Multiple sexual partnerships**

The finding shows that out of 245 sexually active Drayang girls, 28.2% have engaged in transactional sex, 60% in non-transactional sex, and 11% in both. The low prevalence of transactional sex shows that less number of them are actually doing the transactional sex and majority of them are in non-transactional sex (marital, non-marital and extra-marital). The hypothesis put forth by this study assuming all the draying girls as transactional sex workers is rejected. However, the prevalence of 28.2% is an indication of the existence of transactional sex among Drayang girls. This is evident from the qualitative study by R. Lorway<sup>1</sup> and SBNS (2011)<sup>2</sup>, and FA (2015)<sup>25</sup> among high-risk women in Bhutan, where some of the respondents shared their engagement in transactional sex. These past studies have also shown that young women preferred to have multiple sexual partners to ensure a continual flow of money and material items while for men it was simply a sexual pleasure and variety.<sup>2</sup>

Although there is less number of transactional sex but the occurrence of multiple sexual partnerships among both the transactional and non-transactional is high. For instance, among the transactional sex, 56.5% of them had more than three partners in last 30 days while it was 50.1% among the non-transactional sex. The finding also shows that divorced women preferred sex with strangers whereas the unmarried women had sex with boyfriends. However, the married women had sex with both with the strangers and boyfriends besides their husbands. This clearly shows the complex sexual network coexists among the Drayang girls and their partners.

In addition, the similar sexual overlap is also seen both in transactional and non-transactional sex, where the majority of them are divorced (44.9%), followed by unmarried (37.7%) and 17.4% married women. Despite the existence of multiple sexual partnerships, which are often overlapping, but the condom use in both the transactional and non-transactional sex, is below 36%. The evidence shows that in a transactional sex women often accept sex as per the desire of the male partners owing to the greater need of money thus the condom use becomes less priority.<sup>5</sup>

By looking at the nature of the sexual network complexities, the likelihood of experiencing the intergenerational and sexual concurrent partnership is high. Although our survey could not show the exact numbers of such high-risk sexual practices but our findings, indicate that the sexual overlap between strangers, boyfriends, and husbands among the married, unmarried and divorced women. The global evidence also tells us that those women who are in multiple sexual relationships are more likely to have the early sexual debut, longer duration of sexual activity, remaining with a promiscuous partner, concurrent partnership and high risk of HIV infection.<sup>33-37, 38,54</sup> The study by Muula AS<sup>63</sup> showed that intergenerational sex are more likely to occur in transactional sex where older men will have sex with younger female. It was highlighted that intergenerational sex are strongly linked to increased risk of HIV infection owing to the gender power imbalance and economic vulnerabilities resulting in poor condom negotiation.

However, the analysis, could not establish any significant association between the HIV positivity and STIs with the transactional sex. This can be due to very low STIs/HIV prevalence thus giving low statistical power.

#### **4.1.2. Biological factors**

***Age at first sexual debut:*** The biological factors as one of the proximate determinants play a critical role in acquisition of STIs/HIV among the young

Drayang girls. This is evident from the survey findings, where the majority of them have first sexual debut at very young age. For example, the mean age for first sexual debut in our study population stands at 17 years. The age classification even shows much younger age, where 14.3% of them have experienced their first sex between the ages of 10-15 and rest between the ages of 16-24 years. The global evidence shows that young age sexuality among female increases the risk of transmission due to rupturing of an immature genital membrane and the exposure of larger surface areas of the genital tract as compared to men.<sup>61</sup> These findings are consistent with the results of a study on sexual and reproductive health among the Bhutanese population, where it highlights the growing young age sexuality as a challenge in the prevention of early pregnancy, STIs, and HIV.<sup>23</sup> This is evident from the national HIV data where the majority of the reported HIV cases (90%) are between the ages of the 15-49.<sup>29</sup> However, there is limited study done to understand young age sexuality in Bhutan.

## **4.2. Underlying determinants**

Our analysis focused on how the underlying determinants like sociodemographic, socioeconomic and sociocultural factors are playing significant role in influencing the behavioural and biological risk factors of the Drayang girls in acquisition and transmission of STIs/HIV.

### **4.2.1. Sociodemographic**

**Marital status:** Concerning their marital status, the qualitative study by R. Lorway showed that the Drayang girls are composed of married, unmarried and divorced individuals. The result from the R. Lorway's study is consistent with the survey findings, where majority (43.7%) of them are married, 29.8% are divorced and 26.5% unmarried. These differences in marital status were significantly associated with their engagement in transactional sex. For instance, among the 28.2% of the Drayang girls who engaged in transactional sex 44.9% of them are divorced, 37.7% are unmarried and 17.4% are married. The literature finding also showed that divorced and unmarried women are more likely to face social challenges related to poverty, income, gender inequality, access to health services.<sup>6,35,36,51</sup> Therefore, divorced and unmarried young women are socially and economically more vulnerable to acquisition and transmission of STIs and HIV.

#### **4.2.2. Socioeconomic factors**

In the case of socioeconomic factors, the living arrangement and current working city were significantly influencing the behavioural and biological factors in acquisition of STIs/HIV among the Drayang girls. The study missed the individual income as determinant to the current variable. However, we have analysed the economic vulnerabilities of those engaged in transactional sex based on the two main sub-factors discussed below.

***Living arrangement:*** As shown in the survey findings, the majority (32.5%) of them who engaged in transactional sex belong to the group that manages their own living accommodations. Subsequently, those who share the accommodation with friends, relatives, living in hostels and with others such as parents and husbands followed it. This clearly shows that those who have to bear additional expenses by themselves are more likely to engage in transactional sex as compared to others who stay with parents and husbands. This finding from the survey was consistent with the result of R. Lorway's qualitative study, where the Drayang girls have mentioned that difficulty in paying soaring house rent in these urban cities.<sup>1</sup>

***Current living cities:*** The findings from qualitative study by R. Lorway's on difficulty in paying house rent is consistent with the survey results of this study, where it showed a significant association between current living city and the transactional sex. Meaning those Drayang girls living and working in bigger cities are engaged more in transactional sex as compared to smaller town. This shows that the bigger cities with high living expenses are encouraging more transactional sex as compared to smaller towns. The other factors such as, finding gainful urban employment may have influenced transactional sex in these cities because the qualitative findings showed that most of these girls are migrated from rural areas to urban cities for livelihood. The Gender and Employment Report (GER), 2013, also states that unemployment in Bhutan is mostly concentrated among the youth aged 20-24 years and interestingly it is mostly among the females (6.2%) as compared to the male (3.8%).<sup>50</sup> This shows that the unemployment among the young women may be one of the reasons besides the low income that might have contributed to the emerging transactional sex. The study by Dunkle<sup>51</sup> and Aral (52) also tells us that economic stresses coupled with low wages, unemployment, and poverty is one of the driving forces for young women to use sex as a means for survival.

**Knowledge on HIV prevention and transmission:** It is worth noting that the comprehensive HIV knowledge among the Drayang girls is just 29%. In addition, the misconception on a getting HIV from mosquito bites and sharing food were also prevalent. This finding on knowledge was consistent with the qualitative findings of the FA (2015) in Bhutan among the high- risk women, where it was mentioned most of them are not even aware of the main mode of HIV transmission.<sup>25</sup>

However, in comparison with the general population based on the NHS, 2012 results among the population of same age group, it was found that the comprehensive HIV knowledge among Drayang girls is higher by 6%.<sup>46</sup> Nevertheless, the overall HIV comprehensive knowledge among the general population and Drayang girls are comparatively lower than expected. The most probable reason for low comprehensive knowledge on HIV could be due inadequate targeted HIV education among the Drayang girls, unlike the general population. The knowledge of the general population is expected to be either high or not less than 50%. This expectation is based on the continuous effort put in by the Health Ministry and its partners in creating awareness education on HIV prevention since the 1980s.

The other possible reason could be due to their low or no education as shown in our findings which might have resulted in a poor understanding of messages communicated. This is evident from our survey result, where a significant association between education level and knowledge is observed. The studies by Hesketh<sup>35</sup>, Rahman<sup>47</sup>, Tuntufye<sup>48</sup> and Fako<sup>49</sup> have also shown the similar correlation, where knowledge on HIV prevention increases with increase in education. This shows that knowledge is dependent on education level lack of which can be contributing factor of STIs/HIV vulnerability among the Drayang girls.

**Knowledge and condom use:** As indicated in our findings the knowledge has no influence on sexual risk behavior (condom use) among those Drayang girls who are engaged in transactional sex. However, the finding from the global literature show mixed results. This indicates that use of a condom is not fully depended on the knowledge but other factors as well. This is evident from the study by Lammers (2013) in Africa, where it mentioned that a condom use does not necessary depends on the knowledge but more

importantly depends upon the accessibility.<sup>67</sup> Similarly, the FA (2015) also showed poor management of condom box distributed by NACP among the Drayang girls. The FA (2015) further shows that some hotels and bars that are thought to be operating the sex work are not willing to accept the condom box simply to get rid of a police raid.<sup>25</sup> Therefore, besides the low comprehensive knowledge on HIV prevention the poor management of condom box and its accessibility might have caused the low condom use among the Drayang girls.

#### **4.2.3. Sociocultural factors**

One of the key sociocultural factors that influence the sexual risk behaviour of the Drayang girls is the intake of alcohol. The sexual intercourse under the influence of alcohol increases their vulnerability to STIs/HIV acquisition and transmission. This is evident from our findings where 51.8% of Drayang girls are active drinkers and 44.9% of them have engaged in casual sex under the intoxicated state. However, only 21% of them have used a condom. The situation becomes even worse when the majority of these drinkers are from the divorced and unmarried groups who are actually active in transactional sex as per our findings.

These findings are consistent with the results of a qualitative study by R. Lorway, where it states that both the male and females in the Drayang girls are using alcohol as the means to socialize with the strangers and subsequently connects with the potential sexual partners.<sup>1</sup> The nationally representative survey in Africa also shows that alcohol-dependent women are two times likely to report transactional sex.<sup>53</sup> The study in Vietnam among the young youths highlighted a strong correlation between alcohol use and intention to engage in unsafe sex.<sup>58</sup> This shows the likelihood of alcohol influencing the sexual risk behaviour of the Drayang girls. However, there is a limitation to the findings because the study could not confirm whether these girls are drinking during the work time in the same Drayang or during the off time.

### **4.3. Health Outcome**

#### **4.3.1. Prevalence of STIs and HIV**

As shown in the findings the overall HIV and STIs prevalence is low among the Drayang girls. For instance, out of 245 test the overall prevalence of HIV shown is HIV (0.8%), hepatitis (6.9%) and syphilis (2.8%). This shows an overall low prevalence of HIV and STIs among the Drayang girls despite



assuming them as more vulnerable to STIs/HIV than other young women. Therefore, the findings do not support our assumptions.

However, we cannot guarantee their non-vulnerability simply based on the current low HIV prevalence. One of the reasons for low HIV prevalence among the Drayang girls may be due to the current low adult HIV prevalence in the general population, which is 0.1% as per the UNAIDS estimates, 2013. The low HIV and high STIs prevalence in our survey resembles the current trend of HIV and STIs in Bhutan thus justifying the overall low HIV prevalence among the Drayang girls despite their engagement in multiple sexual partnerships and low condom use.

On the other hand, the shorter duration of work in Drayang may have protected the Drayang girls from infection. For instance, the findings show 64.2% of them have just completed less than 8 months working in Drayang and 35% more than 8 months with the maximum of 25 months. The mean work duration was 8.4 months. This indicates that Drayang girls do not take singing and dancing in Drayang as their life long career thus reducing the frequency of sexual partnerships.

## **5. CONCLUSION**

This study is conducted to understand the HIV vulnerability and sexual risk behaviour of the Drayang girls in Bhutan. As a result, the various underlying determinants such as sociodemographic, socioeconomic and sociocultural factors were explored to see how they influence the behavioural and biological risk factors for STIs/HIV infection. The key findings were summarized within the specific chapters as indicated below.

### **5.1. Proximal determinants**

One of the most significant issues to consider is the low prevalence of transactional sex and high non-transactional sex thus nullifying the current assumption of all the Drayang girls being actively engaged in transactional sex. Despite the high sexual risk behaviours, the condom use was low thus making them more vulnerable from STIs/HIV infections. The global evidence shows a significant association between the transactional sex and STIs/HIV positivity.

### **5.2. Underlying determinants**

The *sociodemographic factors* such as marital status were strongly associated with transactional sex. This shows that divorced and unmarried are more vulnerable to sexual risk behaviour in acquisition of HIV/STIs infection.

The *socioeconomic factors* such as living arrangement and the current working city were associated with the transactional sex. The Drayang girls who stay in bigger cities and manage their own living arrangements are more engaged in transactional sex as compared to those living with relatives, parents and husbands. This clearly shows that those who have to bear additional expenses by themselves are more likely to engage in transactional sex. Therefore, the financial needs are influencing the transactional sex among Drayang girls.

The *comprehensive knowledge on HIV prevention* was low and the misconceptions on HIV transmission through mosquito bites and sharing food was common. These findings were inconsistent with the NHS, 2012, where comprehensive knowledge among Drayang girls was higher by 6% as compared to the general population. The analysis has found that positive correlation between the level of education and knowledge. This shows that low knowledge among the Drayang girls with the prevailing misconception on HIV transmission may increase the risk of HIV acquisition and transmission.

The *sociocultural factors*: The majority of the active drinkers had engaged in sexual activity but the condom use is very low. This shows that sex under alcohol intoxication increases the risk of engaging in unsafe sex due to poor decision making in condom use and low perceived risk. There was a significant association between alcohol intake and the likelihood of engaging in casual sex. Therefore, the alcohol is one of the factors that is more likely to increase the vulnerabilities of those Drayang girls who engage in unsafe sex.

### **5.3. Health outcome**

Despite the existence of sexual risk behaviour coupled with low condom use and knowledge on HIV transmission, the current STIs and HIV are very low. Therefore, it rejects our hypothesis of assuming Drayang girls as high risk of being infected with HIV and STIs. However, it is important to note that the low prevalence of HIV among the Drayang girls could be due to the current low HIV prevalence among the general population in Bhutan, which is 0.1% as per the UNAIDS, (2013) estimate. The other reason could be due to short duration of work in Drayang by the girls which might have protected them from infection.

### **5.4. Theoretical application**

The concept of underlying determinants operating through the proximal determinants resulting into STI/HIV positivity as the health outcome was determined in this study. These findings complement the results of the R. Lorway's qualitative study both quantitatively and conceptually in logical order.

Lastly, the findings helped us to understand the HIV vulnerability and sexual risk behaviour of Drayang girls and the current prevalence of STIs and HIV among these groups of population in Bhutan. This will help us overcome the challenges observed in this study through an appropriate intervention.

## **5.5. Recommendations**

### **For service providers:**

- 1) NACP should continue delivering its current HIV Testing and Counselling (HTC) Services including the condom promotion among the Drayang girls. The program should expand the services to those Drayangs located in other districts where there is no stand-alone VCT centre now. However, the interventions should further consider targeting sub-population within the Drayang girls such as divorced and unmarried women who are more engaged in transactional sex and confronted with economic and social vulnerabilities.
- 2) NACP should review the current condom distribution activities and placement of condom boxes to the entertainment venues (drayangs, karaoke, and discos). In doing so, firstly, the target population such as draying girls and the bar customers should be involved to discuss their needs. Secondly, the owner of the entertainment venues should be engaged to ensure the accessibility and effective use in their respective locations.
- 3) NACP and Lhaksam should try implementing the two ways communication approach focus on increasing an understanding of the communicated messages rather than just disseminating the information. For instance, engaging them in the development of the communication materials and providing them a platform to participate in a meaningful workshop to discuss on sex, sexuality, and gender in relation to HIV acquisition and transmission.
- 4) In the current prevention programs among Drayang girls, NACP should strengthen the components such as peer education and support groups to enable sexually active Drayang girls to adopt safer sex. The peer educator needs to be recruited and their retention plan should be developed for sustainability. More focused should be given to the divorced women and unmarried young girls.

**For researchers:**

- 1) The effect of HIV information and education materials needs to be assessed to understand the current low comprehensive knowledge on HIV prevention and transmission among the general population (GP). A mixed method would be relevant to identify the reach of IEC materials to GP and gather feedbacks on the content, design etc. The impact of IEC materials also needs to be assessed.
- 2) Need to understand how occupational and work environment influence alcohol drinking and sexual risk behaviour among the young girls/women working in the Drayang. A mixed method will be suitable for this purpose. The prevalence of drinking and sociodemographic characteristics can be determined quantitatively. The occupational and environment factors can be explored qualitatively either through in-depth or focal group discussion.

**For Policy makers:**

- 1) To overcome the potential risk factors related to employment type, the NACP should include STIs/HIV preventive knowledge and skills as part of their job training, especially for those working in entertainment venues like Drayang. The engagement of the owners and managers of the Drayang in intervention efforts is important.
- 2) The Ministry of Labour and Human Resource (MoLHR) and relevant NGOs should work closely to provide a skills development training for the Drayang girls to overcome their economic vulnerabilities by creating an access to additional forms of income generation. The low cost, innovative methods can be used taking into consideration the values and knowledge of the Drayang girls. This can ultimately help ensure long-term employment options for the Drayang girls.
- 3) NACP, Ministry of Health should integrate most the activities recommended above into the current Global Fund grant to avoid funding gap. The funding specifically for research studies can be explore from the WHO or RGoB as it is beyond the scope of current Global Fund support to NACP.

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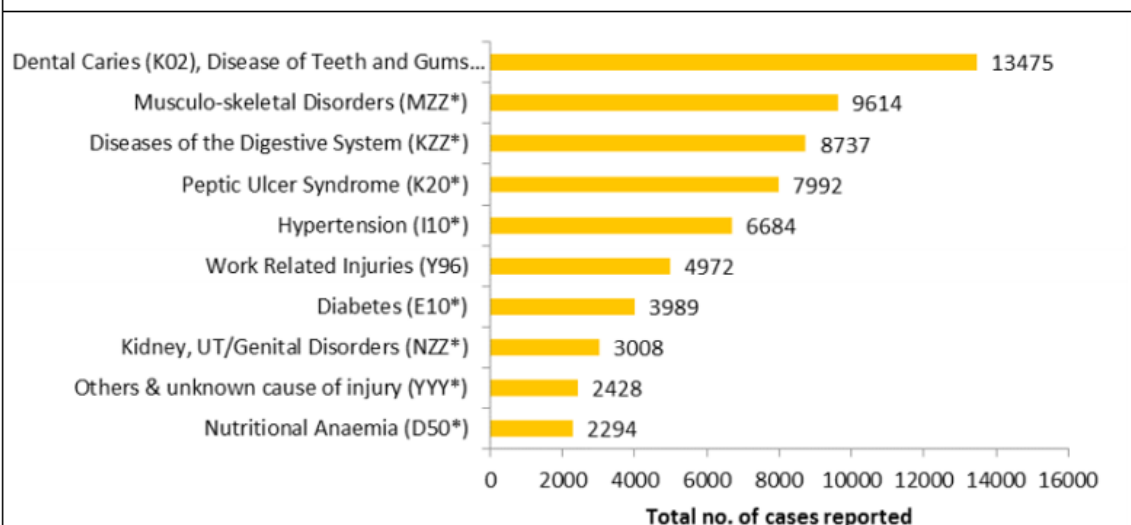
## 7. ANNEXURES

### 7.1. Annex 1: The health human resource, 2015

<b>Table 13: Health Human Resource of Bhutan, 2015.</b>			
<b>Categories</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Doctors ( MBBS/Specialists)	176	75	251
Assistant Clinical Officers	30	5	35
Nurses ( AN/GNM/BSc)	450	620	1070
Health Assistants	284	264	548
Basic Health Workers	95	0	95
<u>Drungtshos</u> (Indigenous Physician)	38	9	47
<u>sMenpas</u>	71	29	100
Pharmacists	11	4	15
Medical Lab Technologists	28	10	38
Physiotherapists	8	4	12
Technicians	544	356	900
Administrative and Support staff	696	416	1112
General Service Personnel ( GSP)	242	190	432
Elementary Service Personnel (ESP)	141	21	162
<b>Total staff strength, MoH</b>	<b>2814</b>	<b>2003</b>	<b>4817</b>
<i>Data Source: Annual Health Bulletin, 2016, Ministry of Health, Royal Govt. of Bhutan.</i>			

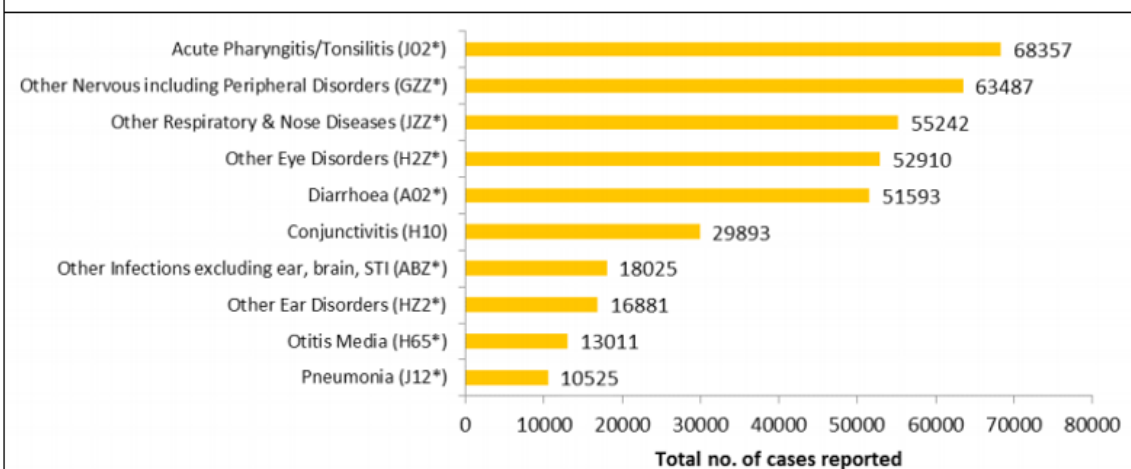
## 7.2. Annex 2: Top-Ten Communicable and Non-Communicable Diseases reported By health centres of Bhutan, 2015.

**Figure 1.9 Top-Ten-Non-communicable Disease reported by the health centers of Bhutan in 2015**



Data Source: Annual Health Bulletin, Ministry of Health, Royal Govt. of Bhutan, 2015

**Figure 10 Top-Ten-Communicable Disease reported by the health centers of Bhutan in 2015**



Data Source: Annual Health Bulletin, Ministry of Health, Royal Govt. of Bhutan, 2015

### **7.3. Annex 3: Survey Design**

#### **I. Methodology**

The method for this thesis includes analyzing data from the quantitative survey conducted in Bhutan, 2015 prior to the commencement of this thesis. The findings from the survey will be supported by the literature review.

#### **II. Literature search strategy**

The relevant literatures on the subject were searched from the Google scholar, PubMed, Medline, E-library of VU University and the KIT library. The websites of Ministry of Health, National Statistical Bureau of Royal Government of Bhutan and the WHO, UNAIDS, World Bank and CDC were referred to get the relevant data.

The several keywords were used to search the literature like "Risk factors and vulnerability", "sex workers", "transactional sex", "HIV", "STIs" "HIV and young age", "cultural factors and HIV", "multiple sexual partnership" and "Concurrent sex", "Alcohol and HIV" and "sexual behaviour", "socioeconomic and HIV", "Proximate determinates". The keywords were mostly used in phrases combined with the name of the disease and in some cases by a single word.

#### **III. Study design and settings.**

This is a cross-sectional descriptive study was conducted from May-July 2015 to understand the HIV vulnerability and risk behaviours of Drayang girls in three urban districts of Bhutan. The study conducted as part of the program monitoring and supervision activity where my colleague and I was the main principle investigator (PI). As one of the lead PI, I was involved from initial stage of protocol development to the implementation, analysis, and report writing. The major urban districts like Paro and Phuentsholing-Chukha were included for the study based on the current high number of HIV cases and high population density. The other criteria taken into consideration are easy to reach the study population during the time of the study. For example, the existence of a large number of entertainment venues and standalone VCT centres.

#### **IV. Study population, sampling recruitment.**

The four main criteria was set for the selection of the target population for the survey, a person must be: (1) equal to or above 15 years of age; (2) present in the selected Drayang; and (3) must be fulltime singer or dancer in the selected Drayang; and (4) agree to participate in the study. Three cities were selected purposely to capture more Drayang as majority of the Drayang in Bhutan are located in these three cities. The study team collaborated with the

respective local district health authority especially the VCT centres and the respective owner/manager of Drayang to ensure participation of the girls. As mentioned, there are VCT centers in all the three districts with dedicated VCT counsellors who are closely working with the Drayang girls on the aspects of HIV prevention. The VCT counsellors in close coordination with the respective Draynag owners/managers have discussed the participation of the girls in the study. Accordingly, the Drayang owner and VCT focal person have arranged the girls for the general briefing on the study objective and its purposes including their rights to accept/decline, potential benefits, the need for their consent and associated risk. The team finally recruited the participants based on volunteer and informed consent have been taken from each respondent.

The convenient non-random sampling technique was used to recruit the target population. All girls who are working as dancers in Drayang above 15 years of age are included in the study. The study have target 28 Drayang altogether, 13 in Thimphu, 9 in Phuentsholing and 6 in Paro. The total girls registered in Thimphu consists of 140, while in Phuentsholing and Paro there are 95 and 73 respectively. This information is being received from the respective Drayang. Therefore, total was expected to reach 308 girls. Since the study uses the convenient non-random sampling technique, we have not done any sample size calculation.

#### **V. HIV and STIs Testing.**

The survey was tied up with the quarterly HIV and STIs (Hepatitis B and Syphilis) testing by the VCT centers among the girls to see the prevalence of HIV, Hepatitis B and syphilis. The laboratory technologist and technicians including the HISC counselors who are certified to carry out such testing was recruited to carry out the HIV/STIs testing and further analysis of test result. During the surveillance, all test kits are stored in appropriate temperature as per manufacturer's instruction for consistency of test results. The test works on immunochromatographic principal, where a control line and a test line appear. Test interpretation was based on visual reading and confirmation will be done by the second interpreter at Public Health Laboratory. Kit lot number will be recorded for traceability and expiry date will be inspected.

- a) HIV test was carried out using rapid diagnostic test kits (Determine-HIV). If found HIV positive at first instance then a second rapid test was performed to rule out the false positivity the final confirmatory test using enzyme-linked immunosorbent assay (ELISA) have been conducted at Public Health Laboratory (PHL).
- b) Syphilis test was carried out using Carbogen- rapid plasma regain (RPR) and those found reactive were confirmed by THPA test.



c) Hepatitis B test was tested using Hepacard- Hepatitis B test kit and no other confirmatory test have been done. All the testing was carried out as per the existing VCT laboratory protocols.

#### **VI. Data collection tool.**

We have used structured questionnaires to collect the behavioural information such as socio-demographic, knowledge, attitude and sexual history of the girls. The information such HIV and STIs (Hepatitis B and Syphilis) seropositivity was determined through the rapid diagnostic test as part of routine onsite HIV testing and counselling services conducted by the standalone VCT centres in study area. We have used the standard protocol and existing registration format to record the STIs (Hepatitis B and Syphilis) and HIV results.

#### **VII. Data processing and analysis**

The research team composed of two PIs and four assistant researchers including the two laboratory personnel. Four female research assistant with the two PIs conducted the structured interviews in all the three districts. The same research assistants did the data entry right after the conduct of field survey. The data was collected was double entered using Epi Data Software (new version). To ensure the validity of the data the Principle Investigator checked 20% of the data entered.

The laboratory team collected the blood sample using the rapid diagnostic test kits as shown below in the tabular form. The entire test was based on the immunochromatographic principal, where a control line and a test line needs to appear. Test interpretation was done based on visual reading and second interpreter at Public Health Laboratory for further confirmation. Test kit lot number recorded for traceability and expiry date inspected.

HIV test carried out using rapid diagnostic test kits. Second rapid test conducted if found positive. Final confirmatory test done using enzyme-linked immunosorbent assay (ELISA). Syphilis tested using rapid plasma regain (RPR) and those found reactive were confirmed by THPA test. The hepatitis B was tested using Hepacard- Hepatitis B test kit and result (+ve or -ve) obtained was treated as final.

The EpiData software carried out the data cleaning and analysis. The socio-demographic characteristics and sexual behavioural information generated through frequencies, percentages, means and standard deviations. Association between the independent variables and dependent variable were

analysed using chi-square test (Cross tabulation) and fisher exact test where ever required.

### **VIII. Ethical considerations**

The administrative approval from the Departmental of Public Health and ethics clearance from the Research Ethnics Board, Ministry of Health, Royal Government of Bhutan was undertaken respectively. In order to guarantee the safety and confidentiality of study participants, informed consent was sought from the girls. The data collected were secured under lock and key, study benefits were explained to the girls and counsellor attached to overcome emotional and psychological challenges.

### **IX. Quality assurance**

The research assistants were trained on the research protocol, data collection tools, and data management before the commencement of the study. In order to ensure the accuracy and reliability, the data tools are pretested and changes incorporated. The most preferred language by the participants was used to overcome the large variation. The data generated from the quantitative findings were triangulated with the relevant findings from the literature search and available program data. The certified laboratory technicians carried out the blood sample collection and lab analysis as per the national standard protocol. During the survey, all test kits are stored at appropriate temperature as per manufacturer's instruction for consistency of test results.

## 7.4. Annex 4: Survey Questionnaires

### 1.0 PERSONAL INFORMATION

Q. N.	Questions and Filters	Coding Categories	Skip to
01	Before we begin our interview? Let me know if you have any questions to be asked to me? (Yes/No-clarify accordingly). Which part of Bhutan you are from?	District_____ Village/Municipality_____  District Code..... <input type="checkbox"/> <input type="checkbox"/>	
02	Where do you live now?	District_____ Name of town_____  District Code..... <input type="checkbox"/> <input type="checkbox"/>	
03	Before you moved here, where did you live?	District_____ Village/Municipality_____  District Code..... <input type="checkbox"/> <input type="checkbox"/>	
04	How long you have been working in the Drayang?	Number of months <input type="checkbox"/> <input type="checkbox"/> Always (since birth) 0 Don't Know 98 Can't Say 99	
05	How old are you?	Age in completed Years..... <input type="checkbox"/> <input type="checkbox"/> Don't Know .....98 Can't Say .....99	
06	What is your Education Level?	No Education..... .1	

Q. N.	Questions and Filters	Coding Categories	Skip to
		Primary (pre-primary to grade.....2 Middle Sec School (Grade 7-10)... ...3 Higher secondary school.....5 Others.....6	
07	With whom you live here?	Self .....1 Relatives.....2 Boyfriends.....3 Friends .....4 Hostel (Drayang).....5 Others (Specify).....	
08	May I know your marital status?	Married.....1 Unmarried.....2 Divorced.....3	

## 2.0 Knowledge and practice on HIV

Q. N.	Questions and Filters	Coding Categories	Skip to
09	People reduce their chance of getting HIV/AIDS by having just one faithful uninfected sex partner?	Agree .....1 Disagree .....2 Not sure.....3 Dot know .....99	
10	People reduce their chance of getting the HIV/AIDS by using condom every time they have sex?	Agree .....1 Disagree .....2 Not sure.....3 Dot know .....99	
11	People get the HIV/AIDS from mosquito bites?	Agree .....1 Disagree .....2 Not sure.....3	

Q. N.	Questions and Filters	Coding Categories	Skip to
		Dot know .....99	
12	It is possible for a healthy looking person to have HIV/AIDS?	Agree .....1 Disagree .....2 Not sure.....3 Dot know .....99	
13	People can get the HIV/AIDS by sharing food with a person who has AIDS	Agree .....1 Disagree .....2 Not sure.....3 Dot know .....99	
14	Do you get scare with people living with HIV/AIDS? Are you comfortable to talk to PLHIV and be friend with them?	Yes.....1 No.....2 Don't know.....99	

### 3.0 SEXUAL HISTORY

Q. N.	Questions and Filters	Coding Categories	Skip to
15	What type of people you interact mostly in Drayang?	Civil Servants.....1 Business man.....2 Armed forces.....3 Youths/Students.....4 Foreigners.....5 Drivers .....6	
16	Of the above what type of customer you prefer in Drayang?	Civil Servants.....1 Business man.....2 Armed forces.....3 Youths/Students.....4 Foreigners.....5 Drivers.....6	
17	At what age you had your first sexual experience?	Age <input type="text"/> <input type="text"/>	

Q. N.	Questions and Filters	Coding Categories	Skip to
18	What form of sex did you have?	Vaginal .....1 Oral.....2 Anal.....3 Others (specify)_____	
19	Is your sexual partner.....?	Casual acquaintance .....1 Boyfriend.....2 Living together .....3 Husband.....4 All.....5	
20	Think about your most recent sex partner whom you exchanged money for sex.  How many times did you have sex with your commercial partner during the past 30 days?	Number of times <input type="text"/> <input type="text"/> → Don't know .....98 Can't Say .....9 Never.....100 →	23     22
21	How many times did you have sex with your last non-commercial partner during the past 30 days?	Number of times <input type="text"/> <input type="text"/> → Don't know .....98 Can't Say .....99 Never.....100	24
22	With what frequency did you use condom with all of your commercial partner(s) during the past 6 months?	All of the time.....1 Most of the time .....2 Some of the time .....3 Rarely.....4 Never.....100	

Q. N.	Questions and Filters	Coding Categories	Skip to
23	With what frequency did you use condom with all of your commercial partner(s) during the past 6 months?	All of the time.....1 Most of the time.....2 Some of the time.....3 Rarely.....4 Never .....100	
24	If you consume alcohol, how many times do you drink?	5-6 days a week .....1 1-4 days a week.....2 1-3 days a week.....3 Less than a month.....4 Not at all.....5	
25	Did you ever have casual sex after alcohol?	Yes.....1 No.....2 → Don't know.....99	28
26	Did you use condom during sexual intercourse after having alcohol?	Yes.....1 No.....2 Can't remember.....3 Don't know.....99	
27	Do you use social media for communication?	Yes.....1 No.....2 → Don't know .....99	30
28	What type of social media you mostly use to contact your friends and other sexual partners?	WeChat.....1 Facebook.....2 Viber.....3 Skype.....4 Any other (Specify).....	

### 3.0 Prevalence of STIs and treatment seeking behaviours

Q. N.	Questions and Filters	Coding Categories	Skip to
29	<p><u>Now I would like to ask you some questions about your health in the last 12 months.</u></p> <p>During the last 12 months, have you had a disease which you got through sexual contact?</p>	<p>Yes 1</p> <p>No 2</p> <p>Don't Know 98</p>	
30	<p><u>Sometime women experience abnormal discharge from their vagina/ anus.</u></p> <p>During the last 12 months, have you had a bad abnormal discharge from your vagina/anus?</p>	<p>Yes 1</p> <p>No 2</p> <p>Don't Know 98</p>	
31	<p><u>Sometimes women have a sore or ulcer on or near their vagina.</u></p> <p>During the last 12 months, have you had sore or ulcer on or near Vagina/anus?</p>	<p>Yes 1</p> <p>No 2</p> <p>Don't Know 98</p>	
	<b>If any of 30 or 31 or 32 is yes ask 33, 34 otherwise go to 34</b>		
32	<p>Last time you had any of the above three problem did you seek any kind of advice or treatment?</p>	<p>Yes 1</p> <p>No 2</p>	→ 35
33	<p>Where did you visit?</p>	<p>Referral Hospital A</p> <p>District Hospital B</p> <p>Basic Health Unit (BHU) C</p> <p>HISC.... D</p> <p>Private Hospital E</p> <p>Other (Specify) F</p>	

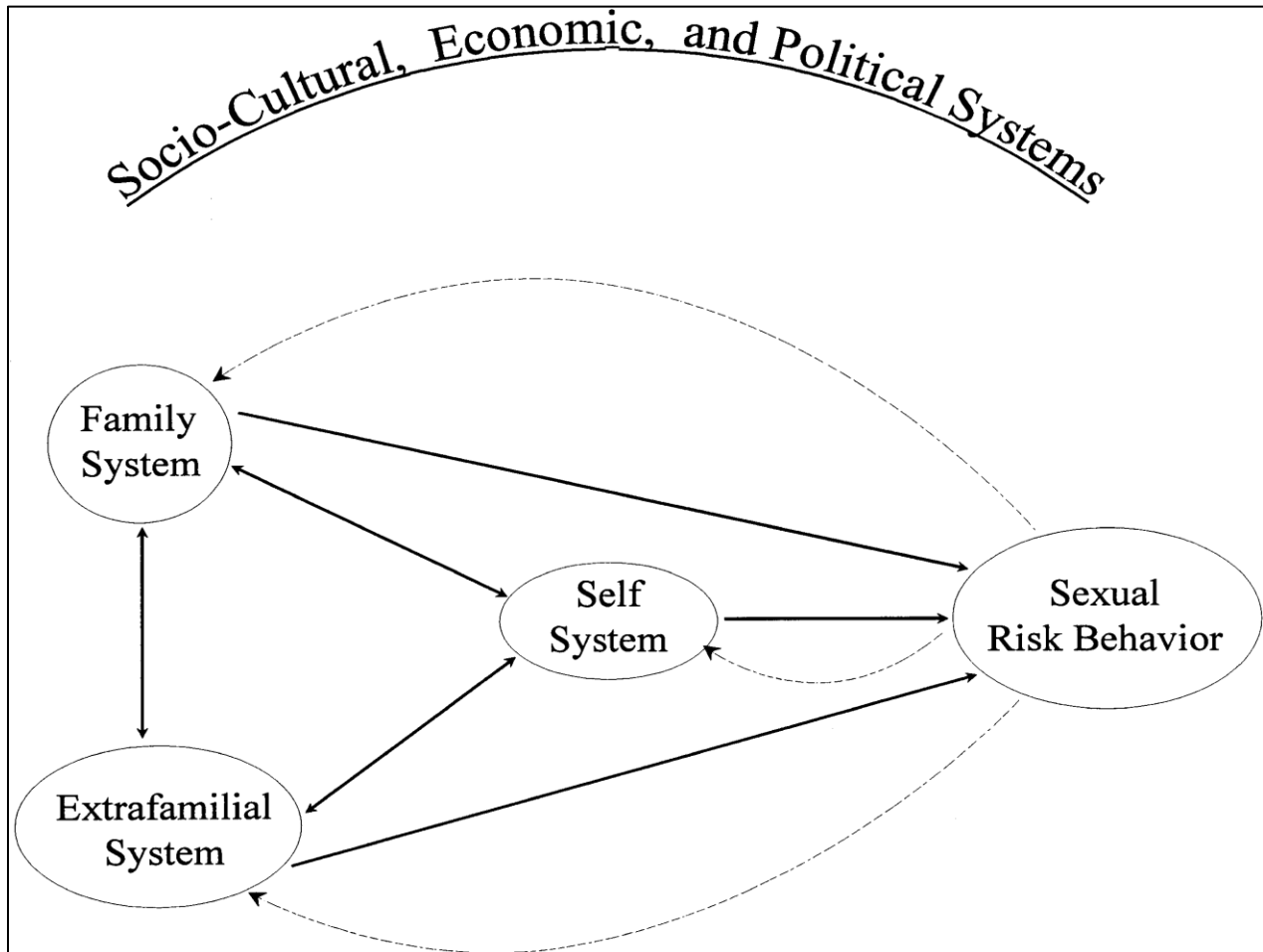


#### 4.0 HIV Test.

Q. N.	Questions and Filters	Coding Categories	Skip to
34	<u>I don't want to know the result</u>  Have you been ever tested to see if you have HIV?	Yes 1 No 2 →	39
35	Where was the test done?	Referral Hospital 1 District Hospital 2 Basic Health Unit (BHU) 3 HISC.... 4 Private Hospital 5 Other (Specify) 6	
36	When was the last time you were tested?	Less than 12 months ago 1 12 – 23 months 2 2 or more years ago 98	
37	I don't want to know the result; did you get the result of the test?	Yes 1 No 2 Don't Know 98	
38	Do you know of a place where people can go to get tested for HIV/STI?	Yes 1 No 2 →	End interview

Q. N.	Questions and Filters	Coding Categories	Skip to
39	Where is that place?	Referral Hospital    A District Hospital    B Basic Health Unit (BHU)    C HISC....    D Private Hospital    E Other (Specify)    F	

**7.5. Annex 6: Conceptual framework-multisystem perspective on adolescent sexual risk Behaviour by Bronfenbrenner's (1979-1989)**



The Bronfenbrenner's (1979-1989) model focuses on mutual relationship between the multiple system and ultimate sexual risk behaviour of the adolescent. This model highlights that in order to understand the sexual risk behaviour of the adolescent, the knowledge at individual level (self) and the other environmental factors needs to be understood. It is believed that this factors may contribute towards making the adolescent sexually active and subsequently facilitates them to take decision either to engage or abstain from sexual risk behaviours.

The three key factors are self, family and extra familial system. It is believed that higher microsystem such as socio cultural,

economic and political system operates through the microsystem such as self, family and extra familial factors to achieve the desired outcome. This frame work helps to understand how this factors are interlinked and influences one another. The understanding on how each factors play a role to either influence or protects against each other to achieving the desire behavioural outcome. In this model it is assumed that behaviour itself may influence the three micro level factors through a feedback mechanism to improve the relations among the systems.

### 7.6. Annex 7: Conceptual frame work -Factors affecting the risk of HIV infection among the young person aged 15-24 years by Kembo J (2012)-

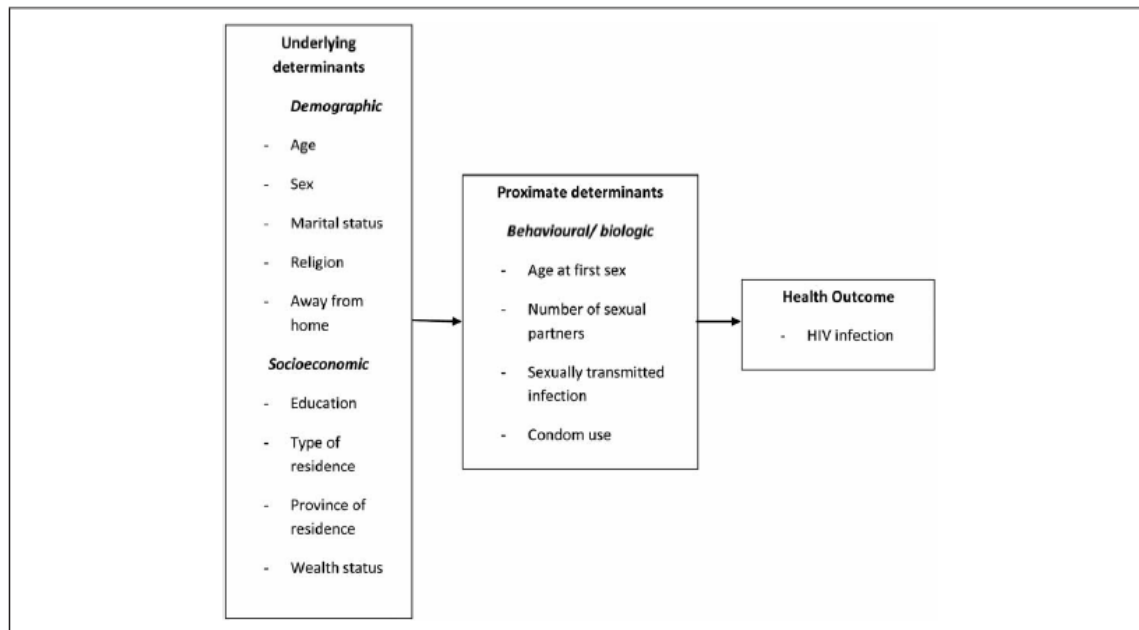


Fig. 1. Conceptual framework for factors affecting the risk of HIV infection among young persons aged 15-24 years, Zimbabwe. Source: Adapted from Mosley and Chen (1984).

The most basic principle that this model illustrates is that the underlying factors such as sociodemographic, socioeconomic, sociocultural factors must mediate through the proximal determinants to influence the sexual risk behavior for an individual. The model assume that these underlying factors may contribute to the vulnerability of an induvial from being exposed to sexual risk behavior such as multiple sex, low condom use and young age sex which are considered as the risk factor for the HIV acquisition and transmission.