A Space for Nepalese Male Migrant Workers to Co-create Internet-based HIV Prevention

Til Bahadur Chhetri

Supervisors: Dr Cath Conn, Dr Tineke Water and

Dr Stephen Neville

A thesis submitted to

Auckland University of Technology (AUT)

in fulfilment of the requirements for the degree of Doctor of Philosophy (PhD)

Faculty of Health and Environment Sciences

June 2022

Abstract

Introduction

It is estimated that more than four million male and female Nepalese working abroad are vulnerable to the Human Immunodeficiency Virus (HIV) infection. These migrant workers comprise approximately 13% of the Nepalese population and are predominantly young adults. The estimation shows that male migrant workers, who constitute about 90% of the total number of migrants from Nepal, have an HIV prevalence of about 0.4%, which is about four times the national adult HIV prevalence rate of 0.1%.

Globally, migrant workers remain a group vulnerable to HIV infection due to a range of determinants, including belonging to a young and highly sexually-active demographic; being separated from a spouse; prevailing feelings of loneliness and related overuse of alcohol; low-level knowledge of HIV and ways of preventing it; peer influence; and other contextual factors. The large population of Nepalese male migrant workers, who contribute about one-third of the country's Gross Domestic Product (GDP), is also regarded as a significant cluster responsible for spreading HIV in Nepal. This study provided a space for Nepalese male migrant workers, vulnerable to HIV, to explore their perspectives on HIV prevention, consider the determinants that make them vulnerable to HIV, and to propose strategies relating to internet-based HIV prevention relevant to their needs.

Method

The research employed a critical theoretical perspective broadly based on 21st-century shifts in health promotion, which emphasise both the role of the internet and the changing roles of users and producers of health promotion. Given the emphasis on

young migrant men's voices, the study utilises participatory action research (PAR) methodology and tools to create a participatory and collaborative space for Nepalese male migrant workers from Kaski District, Pokhara, Nepal, to explore HIV risk factors and co-create an internet-based HIV prevention initiative for the community by focusing on the following research question: *How can Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention programmes?* Deploying PAR principles, seven migrant men from the Kaski District, Nepal, were recruited as co-researchers whilst they were on leave from their overseas workplaces. The co-researchers participated in a series of action-oriented focus groups, which included their reflections on migrant work experiences; and their stories relating to HIV risk contexts and behaviours. Then, the co-researchers explored strategies involving use of the internet to extend current HIV knowledge and skills, followed by sharing concepts, multi-level practice and, finally, co-created internet-based HIV prevention materials including videos, a PowerPoint presentation, pictures and a social media page appropriate to their contexts.

Results and Analysis

The co-researchers have a perception that current HIV prevention in Nepal and many destination countries has few benefits for Nepalese migrant workers. HIV prevention in Nepal focuses on at-risk communities within the country. At the same time, migrant workers are a low priority in comparable programmes in many destination countries. Also, determinants such as their age, marital status, and Nepalese socio-cultural norms, language and related laws discourage migrant workers from seeking information about, and services on, HIV prevention. These factors have resulted in insufficient knowledge of HIV transmission and prevention methods among these Nepalese male migrant co-researchers.

HIV prevention among Nepalese male migrant workers is challenging, given that they are a long way from home. Features of the research that seemed important from the

outset were to utilise the internet since young migrants are avid users. Further, health promotion through digital technology is of increasing importance, although not yet fully recognised, and thus the study provided an opportunity for young Nepalese migrant men's voices and ideas to emerge during the research. In short, the study findings emphasise the need for Nepalese migrants to have friendly and easily-accessible online platforms and strategies which use Nepalese language and social norms which respond to migrant workers' situations.

Discussion

A voice-based study of Nepalese male migrant workers/co-researchers' perceptions provided insight into the gaps in current HIV prevention and their impacts on Nepalese male migrant workers. Additionally, the study exhibited the HIV prevention strategies co-created by Nepalese male migrant worker co-researchers. Collaboration with Nepalese male migrant workers in a creative space provided them with an opportunity to be active rather than passive consumers of HIV prevention programmes. This innovative approach, that of prosumerism, was a key contribution of this research.

Conclusion

Collaboration with a target community, such as male Nepalese migrant workers, in regard to HIV prevention, is crucial to understanding the community's perceptions and experiences, reflecting on their particular experiences, and highlighting the key changes occurring in their societal context. As with other areas of health, health promotion in the 21st century is undergoing a period of rapid disruption. This means that new ways of conducting research and developing new evidence-based solutions to health problems are crucial. In particular, digital technology is playing an ever-increasing role, including in HIV prevention, and it is vital to engage with typically hard-to-reach groups, such as Nepalese male migrant workers, to find ways to maximise the opportunities offered through a co-creation process which reflects and encourages a shift towards the empowered user.

Table of Contents

Contents

List of Figures

List of tables

Acronyms

AIDS– Acquired Immuno-deficiency Syndrome

ARV – Antiretroviral

AUTEC- Auckland University of Technology Ethical Committee

BS – Bikram Sambat (Nepali calendar year, around 57 years ahead of AD)

CBOs – Community Based Organizations

DoFE – Department of Foreign Employment

FPAN – Family Planning Association of Nepal

FSW- Female Sex Workers

GF- Global Fund

HC- Health Centre

HIV – Human Immuno-deficiency Virus

IBBS – Integrated Biological and Behavioural Surveillance

IDU- Injective Drug Users

IEC – Information Education and Communication

INGOs – International Non-governmental Organizations

MDGs – Millennium Development Goals

MoLESS – Ministry of Labour, Employment and Social Security

MSM – Men who have sex with men

NAC – National AIDS Council

NCASC- National Centre for AIDs and STD Control

NGOs – Non-governmental Organization

NHRC – Nepal Health Research Council

PFHR – People Forum for Human Rights

PLHIV – People Living with HIV

PHC- Primary Health Centre

PPTCT – Prevention of Parent to Child Transmission

SHI – Social Health Insurance

STD – Sexually Transmitted Disease

UHC – Universal Health Care

UNAIDS – Joint United Nations Programme on HIV/AIDS

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNGASS – United Nations General Assembly Special Session

TG- Transgender

VDC – Village Development Committee

WHO- World Health Organization

Attestation of Authorship

"I hereby declare that this submission is my work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Name: Til Bahadur Chhetri

Signature:

Date: 02 June 2022

Dedication

This thesis is dedicated to my parents, Captain Hom Bahadur Chhetri and Chandrakala Chhetri, and those migrant workers who never attend any formal education; however, they dream, support and navigate their children toward higher education and quality of life despite having numerous challenges in their life.

Acknowledgement

My sincere gratitude goes to all people who supported and encouraged me directly and indirectly during my PhD Journey.

My sincere gratitude goes to my supervisors and seven Nepalese male migrant worker co-researchers. This journey was not possible without them. My special gratitude goes to my supervisors, Dr Cath Conn and Dr Tineke Water, who assisted with their scholarly guidance, patience, encouragement, trust, and academic support to complete this journey. I am equally grateful to the seven co-researchers who participated in this HIV research trusting me to share their stories, experience, and skills on sensitive health matters. Their contribution is highly significant and appreciated in this study. I am equally thankful to Dr Stephen Neville for the critical reading of the research findings and Lynette Bayly for proofreading the thesis.

I am grateful to the AUT Department of Health and Environment Sciences and The School of Public Health, Graduate Research School for the great academic and other support, and Dr Beibei Chau for assisting me throughout the journey. Special thank goes to Kate Kersey, Dr Nadia Charania, David Parker, and Andrew South for their intellectual support during the first year of my doctoral journey. I am very thankful to my colleagues, Dr Dinar Lubris, Bala Krishna Nayar, Dr Carol Maibvisira and others who provided their support, guidance and encouragement during my doctoral journey.

Special gratitude goes to AUT Child and Youth Health Research and Dr Laurent Antonczak for the opportunity to gain practical knowledge and skills on digital technology use in PAR. I have a special place for the five Nepalese migrants in Auckland, New Zealand, who participated in practice focus groups. The practice enriched me with practical knowledge, and the creative feedback prepared me for the fieldwork. I am grateful to all my friends in Nepal and Auckland who continuously cared

for and encouraged me during my PhD journey. Special gratitude goes to Dr Ram Aryal and Ram Saran Sedai for their support during the fieldwork.

I am very thankful to my parents, brothers and sisters, and the whole family who continuously cared for, supported and encouraged me. I am indebted to my wife, Deepa, son Sudin and daughter Subina for their sacrifice for this achievement. My wife was my true friend and a guardian, caring and supporting me in every situation. I am equally grateful to my brother-in-law Dr Achyut Aryal who continuously supported and encouraged me since the early days of this journey.

This achievement is a bunch of collaboration, contribution, encouragement and support from many lovely people. I am fortunate to have you all around me, and my sincere gratitude goes to you all.

Ethical Approval

1. This research achieved ethical approval from The Auckland University of Technology Ethics Committee (AUTEC) on 12 July 2017. AUTEC Reference Number: 17/212

2. The research achieved ethical approval from Nepal Health Research Council (NHRC) on 20 September 2017. NHRC Reference Number: 579.

Chapter One

Introduction: Creating a space for Nepalese male migrant workers to co-create internet-based HIV prevention

1.1 Introduction

With more than four million men and women estimated to be engaged in overseas labour, Nepal had 13% of its population as migrant workers in 2019 (Bhattarai, Yousef, Greife, & Naraharisetti, 2020; IOM, 2020). This number comprises primarily young adults vulnerable to Human Immunodeficiency Virus (HIV) infection while working abroad. Migrant men constitute about 90% of total migrant workers from Nepal. Recent records have revealed that Nepalese male migrants experience 0.3% (Eastern regions) to 0.4% (Western regions) HIV prevalence (National Centre for AIDS and STDs Control [NCASC], 2020). This is far higher than the adult HIV prevalence rate of 0.1% in Nepal (NCASC, 2020; Joint United Nations Programme on HIV/AIDS [UNAIDS], 2021).

A range of determinants has made migrant workers vulnerable to HIV infection. These include having sexual needs, being in a young age group, being separated from a spouse, feelings of loneliness and related overuse of alcohol, low-level knowledge of HIV and ways of preventing it, peer influence, and other contextual factors (Khanal & Karkee, 2012; Mukherjee & Mail, 2014; Thapa et al., 2017; Weine & Kashuba, 2012). The large population of Nepalese male migrant workers, who contribute about 27% of the country's GDP (World Bank, 2019), is a significant source of the spread of HIV in Nepal (Khanal & Karkee, 2012; Thapa et al., 2017). Addressing this issue is complicated because migrants do not have ready access to public health initiatives.

Typically, they are away for long periods and spend only small amounts of time in Nepal, staying with their family.

This study aimed to explore the perceptions about and experiences of Nepalese male migrant workers about the determinants that make them vulnerable to HIV; and ways to develop HIV prevention strategies for young migrant men, which involved them in the co-creation of those strategies. Important aspects of the research were to utilise the internet, given that young migrants are avid users, and provide an opportunity for the young men's voices and ideas to emerge.

1.2 Research background and rationale

HIV and its relation to migration

HIV has been a public health epidemic globally since the first case was detected in 1981. An estimated 37.6 million people are currently living with HIV, often abbreviated as PLHIV, globally (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2021). The record further shows an estimated 1.5 million new infections and 690,000 AIDs related death in 2020 (UNAIDS, 2020). The first case of HIV in Nepal was detected in 1988 (NCASC, 2020; UNAIDS, 2018). Currently, the number of young Nepali with HIV is estimated to be 30,000, giving a prevalence of 0.1% for this age group (CIA, 2021; NCASC, 2020; UNAIDS, 2020). Unprotected sex with multiple partners is the primary cause of HIV transmission globally and accounts for more than 80% of HIV transmission in Nepal (NCASC, 2020; UNAIDS, 2018).

Migration is a common worldwide phenomenon mostly related to a new experience of culture, people, opportunity, and economic gain (United Nations, 2011); however, also regarded as a cause of HIV transmission. About 3.5% of the global population, which constitutes about 272 million people, are migrants, with two-thirds of this group estimated to be migrant workers (International Organisation for Migration [IOM], 2020).

More than 4 million Nepalese are estimated to be working as migrant workers in more than 130 countries (Bhattarai et al., 2020).

Migration and health have a dynamic and complex relationship. Migration can increase health risks, including HIV, because of exposure to workplace and accommodation-related health risks, violence, abuse, exploitation, and limited access to affordable health care (IOM, 2020). Further, migrant workers are among the high-risk demographic group, prone to contracting HIV, influenced by determinants such as socio-demographic contexts, awareness levels, lifestyles, and sexual practices (Behera & Intarak, 2018). There are also limits on health programmes targeting migrant health, including HIV prevention for labour migrants, due to migrants' mobile nature and being away from their home country. Thus, Migration, especially labour migration, is regarded as a major channel for HIV transmission globally, including in Nepal (Bam, Thapa, Newman, Bhatt, & Bhatta, 2013; Dahal, Pokharel, & Yadav, 2014; Joshi, Prescott, Simkhada, Sharma, & Bhurtyal, 2014; Khanal & Karkee, 2012; Mukherjee & Mail, 2014; Thapa et al., 2017).

Nepalese society and HIV risk

Multiple determinants of health, such as socio-cultural, religious, legal and economic factors in which a person lives and works, can impact their health (World Health Organisation [WHO], 2008). Nepalese society is very much influenced by ancient Hindu and Buddhist religious philosophies, with 90% of the population following one of these religions (Central Bureau of Statistics [CBS], 2012; CIA, 2021). Both religions prohibit sex outside of marriage. Due to the higher incidence of HIV infection transmitted through unsafe sexual contact, the Nepalese society has a discriminatory and stigmatising attitude toward the disease, manifesting as denial, rejection, restriction in participation and avoidance toward HIV infected people (B. Rai, 2008; Wasti, Randall, Simkhada, & Van Teijlingen, 2011). This issue further implies that Nepal's legislation prohibits commercial sex work and sex outside of marriage.

These socio-cultural and legal determinants increase fear in Nepalese society ,creating barriers to seeking information on safe sex practices, and presenting significant challenges for HIV prevention in Nepal. Earlier studies indicate that Nepalese people hesitate to share their perception of sex, including their STD and HIV status, even with their spouse and partner (Bam et al., 2013; B. Rai, 2008; Wasti et al., 2011). Therefore, social stigma and laws which aim to prevent sex beyond marriage, among other determinants such as lack of knowledge about HIV and HIV prevention; and lack of access to information and resources; reduce the opportunities for HIV prevention and for PLHIV in Nepal to get support, treatment, and care (Thapa et al., 2016; Wasti et al., 2011).

Migrant workers: a community at high risk of HIV

Migrant workers who spend most of their time away from home are at a higher risk of HIV in several ways (Behera & Intarak, 2018; Weine & Kashuba, 2012). Low-level work-related skills and linguistic competency, typical among Nepalese male migrant workers, increase the chances of low wages and high exploitation, harassment, and abuse. Unfavourable situations may impact their physical and mental health and increase their vulnerability to substance abuse (Shah, 2016; Weine & Kashuba, 2012). Further, loneliness, substance use, heightened sexual desires as young adults, peer influence, and the availability of paid and unpaid casual sex partners encourage migrants to look for casual sex. They also have misconceptions about HIV transmission and prevention methods to reduce consistent condom use (Dahal et al., 2014; Khanal & Karkee, 2012; Mukherjee & Mail, 2014). Migrant workers are, therefore, increasing the chances of unknowingly transmitting HIV to their spouse or local partner during a regular visit to Nepal (Thapa et al., 2016a).

Many destination countries Nepalese migrants travel for work have a cultural and legal context that prohibits identifying at-risk groups such as men who have sex with men (MSM), Male/Female Sex workers (M/FSW), or restricts sexual practices beyond

marriage (UNAIDS, 2019a). Likewise, many destination countries provide limited rights to migrant workers and regard HIV negative status as a mandatory condition to stay and work in the country (Behera & Intarak, 2018). These settings may discourage migrant workers from searching for information, services and getting HIV tests due to the fear of possible stigma, legal action or potential loss of employment in the host country.

Moreover, HIV prevention in most countries including Nepal, is targeted at high-risk groups living within the country. There is often very limited access to information and services available to migrants (Khanal & Karkee, 2012; Thapa et al., 2016; Weine & Kashuba, 2012). Poor access results in inadequate knowledge or misconception of modes of HIV transmission and how best to prevent sexually transmitted diseases (STDs). Thus, Nepalese male migrant workers are at risk of engaging in unprotected casual sex abroad and with their spouse or local partner upon their return to Nepal. This is the major cause of HIV transmission in local communities, increasing the pool of HIV prevalence among the general population in Nepal (Thapa et al., 2016a).

Global and Nepal target on HIV prevention

The HIV epidemic is a global public health threat. The HIV epidemic response underway globally and locally aims to raise awareness, encourage behaviour change and provide prevention, diagnosis, treatment, and care, especially to high-risk groups. The United Nations' Sustainable Development Goals (SDGs) include ending the HIV epidemic by 2030 (UNAIDS, 2014a). The SGD aims to achieve 95-95-95 in diagnosis, treatment, and care, with less than 200,000 annual HIV infections and zero HIV-related discrimination by 2030 (UNAIDS, 2014a). Global HIV prevention strategies are aimed to achieve the SGD goal of 90-90-90 in diagnosis, ART enrolment and viral suppression, and below 500,000 in annual infections by 2020. However, those targets have not been achieved yet. The records show that an estimated 8.1 million people are

unaware of their HIV status, while another 1.5 million got infected, and a total of 690,000 people died of AIDS-related illnesses in 2020 (UNAIDS, 2020).

As a signatory nation, Nepal has adopted the spirit of the SDGs in 'The National HIV Strategic Plan 2016-2021' and targeted the goal of 90-90-90 in diagnosis, treatment, and care, with zero HIV-related discrimination within communities by 2020 (NCASC, 2017). However, Nepal faced challenges in achieving these goals. National records show HIV testing among high-risk groups, a primary indicator, was far below targets; FSW 56%, MSM 43.8%, MSW 67.8%, IDUs 27.9% and male migrants 4.1% (NCASC, 2017a). Among all the at-risk groups, the low testing rate among male migrants may also help explain this group's apparently low HIV prevalence rate.

There is no cure for HIV, and those infected need lifelong care and treatment, which is expensive and stigmatising (UNAIDS, 2016). Finding resources for lifelong treatment for PLHIV in low-income countries, such as Nepal, is an enormous task. Prevention is crucial in controlling the spread of HIV, notwithstanding the challenges of fighting negative social perspectives toward sex, HIV, and HIV-infected people. Therefore, the delivery of necessary information and behaviour change strategies are essential to prevent HIV acquisition and transmission among migrant workers (Thapa et al., 2016).

Research Rationale and significance of digital technology use in HIV prevention

Implementing face-to-face initiatives to address HIV related issues is challenging in Nepal as Nepalese culture discourages public discussion of sexual matters. However, the advancement of digital technologies in the 21st century has dramatically supported health information delivery and exchange. These provided additional channels for people to share sensitive health issues in physically hard-to-reach communities (Muessig, Nekkanti, Bauermeister, Bull, & Hightow-Weidman, 2015; Ybarra, DuBois, Parsons, Prescott, & Mustanski, 2014). Many internet users prefer online information and programmes on sensitive and stigmatised issues such as HIV, as they provide

anonymous spaces that minimise judgment and potential stigma (Muessig et al., 2015). Further, the opportunity to immediately update online information and the facility to exchange knowledge and experiences with other users via individual or group chatrooms are vital to engaging with hard-to-reach key populations such as Nepalese male migrant workers (Catalani, Philbrick, Fraser, Mechael, & Israelski, 2013; Sullivan, Grey, & Rosser, 2013)

The use of digital technology can be a fundamental approach to HIV prevention in the Nepalese context. It provides an anonymous and autonomous space that is more effective for globally dispersed migrant workers who spend most of their time abroad. The use of digital technologies has been emphasised in health promotion and HIV prevention in Nepal; however, a study on the scope of collaboration with Nepalese male migrant workers for HIV prevention using a virtual platform has not been undertaken (T. Paudel et al., 2016). Therefore, this study sought to deploy digital platforms to extend HIV prevention initiatives targeting millions of Nepalese migrant men and others in high-risk communities.

Overall, there is a lack of research on HIV prevention among migrants, including the research which focuses on an area of growing importance in health promotion: internet-based HIV prevention initiatives; and what these might mean for specific population groups such as Nepalese migrant men (T. Paudel et al., 2016). Further, most earlier studies on HIV prevention and Nepalese male migrant workers focus on quantifying the problem. Public health research also focuses on policy and programmes but usually es a top-down approach that rarely includes digital platforms and other innovations in health promotion. Community engagement is a vital strategy for understanding contexts and needs (UNAIDS, 2019a); however, this is rarely emphasised in many countries, including Nepal. Thus, this study aimed to provide an opportunity to co-design HIV prevention programmes in collaboration with Nepalese male migrant workers. It further explored Nepalese male migrant workers' perceptions of sex,

knowledge about modes of HIV transmission and prevention methods, and contexts that make them vulnerable to HIV at home and in the destination country. In addition to this, this study explored the Nepalese male migrant workers' perspectives about using digital technologies as a basis for a collaborative platform for HIV prevention. In short, this research aimed to contribute to HIV prevention while exploring the scope of using digital platforms to target hard-to-reach Nepalese male migrant worker communities.

1.3 Research question

This study aims to create a participatory and collaborative space for Nepalese male migrant workers from Kaski District, Pokhara, Nepal, to explore HIV risk factors and co-create an internet-based HIV prevention initiative for the community by focusing on the following research question: *How can Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention programmes?*

The following questions are used to explore in more depth the above central question and support the research process and objectives:

1. What are the experiences of Nepalese male migrant workers living abroad in terms of HIV risk contexts and behaviours?
2. How do Nepalese male migrant workers perceive current internet and digital technology-based HIV prevention efforts?
3. How might Nepalese male migrant workers contribute to the co-creation of intent-based HIV prevention interventions?

1.4 The theoretical framework of the study

This study emerged from a concern that Nepalese male migrant workers are at high risk of HIV due to a lack of information and skills. HIV prevention initiatives in Nepal

tend to be top-down approaches and lack target communities' voices and needs. Accordingly, any strategy designed for HIV prevention in Nepal should include the views and needs of target communities, and more so, appropriate to the specific community, such as the Nepalese male migrant workers. Providing a space for targeted populations such as Nepalese male migrant workers is an opportunity to explore community contexts and perceptions. It is therefore crucial to the co-design of an effective HIV prevention measure.

The researchers deployed a participatory methodological approach to provide a space for the members of the community to reflect on daily experiences that put them at HIV risk and to co-design HIV prevention initiatives for the community (Kemmis, McTaggart, & Nixon, 2014; Loewenson, Laurell, Hogstedt, D'Ambruoso, & Shroff, 2014). In undertaking the literature review associated with this study, it became apparent that the critical theoretical perspective underpinning the concept of the digital prosumer was the most appropriate theoretical framework to provide an opportunity to collaborate with Nepalese male migrant workers for HIV prevention.

A critical theoretical perspective underpins this study as one of the best-fit theoretical frameworks for selecting the research methodology and data collection and analysis methods. Critical theory has a long history related to Horkheimer, Adorno, and Marcuse from Frankfurt School (Asghar, 2013). Horkheimer, a co-founder of critical theory, defined it as a theoretical perspective that seeks human emancipation from the circumstances that enslave them (Horkheimer, 1982). Critical theory is chosen because it is "designed not just to explain reality but to change it" (Smith, 2021, p.77). Enlightenment of community members to be empowered to reach a state of emancipation is a core notion of critical research (Comstock, 1982). In this regard, critical research aims to empower the oppressed community members, providing space for their voices and skills and promoting values such as reciprocity, participation, and power-sharing in the research process (Lather, 1991; McCouat & Peile, 1995). Thus,

the theoretical perspective creates a space for community members to explore what is wrong within the current social reality and identify an action to change it (Silverman, 2013).

Critical theory is an umbrella term that includes a range of emancipatory, empowerment-oriented, and reformative perspectives. The research aims to explore the scope of the internet and digital technology-generated space in the context of Nepalese male migrant workers for HIV prevention. Thus, Alvin Toffler's prosumer perspective assists methodological choice. Toffler (1980) coined the term prosumers and defined prosumers as those individuals or firms that produce goods for personal use or satisfaction. Tapscott and Williams (2008) later used the term prosumer to refer to those who create a global set of values amongst users.

Prosumerism is an innovative perspective to provide a space for collaboration between the producer and consumers, which is heavily assisted by the internet and digital technologies in the 21st century. Previously, there was no channel to interact between the producer, and consumers were regarded as mere end-users of available services and goods (Bhalla, 2011). However, Web 2.0 and social media development provided space for global users' voices, innovative ideas, and skills. The online platform supports global users with particular interests and needs to collaborate and co-create values for themselves and broader communities. The online and digital space equally supports health prosumers providing appropriately anonymous and autonomous avenues to co-create and exchange values. The space is crucial for stigmatised health issues like HIV for hard-to-reach communities and globally dispersed populations such as Nepalese male migrant workers (Bhalla, 2011). Thus, the prosumer perspective underpins this study to explore how Nepalese male migrant workers can contribute to the internet and digital technology-based HIV prevention for their community.

The critical theory aims for community empowerment, and the Participatory Action Research (PAR) methodology best fits the theoretical framework and the research

objective. PAR seeks community participation through the research process and to engage with them in a collaborative agenda. PAR is a collective and self-reflective research process in which the researcher(s) and the research participants collaborate as co-researchers to understand the community issue. Then, the participatory team co-designs action to change current contexts and practices (Fran Baum, MacDougall, & Smith, 2006; Kemmis et al., 2014). Using the PAR methodology, the research proceeds in an iterative process of collaborative data collection and analysis in the field. The notion of data analysis in the context of PAR is somewhat different from other forms of qualitative research in that it involves the co-researchers considering themes together. The co-researchers analyse and produce actions, i.e., the co-creation of actions to address a situation that puts Nepalese male migrant workers at risk of contracting HIV (McTaggart, 1997). In contrast, norms of qualitative research typically involve the researcher in collecting data and independently analysing that data. This study deployed the PAR process to provide a space for Nepalese male migrant workers as co-researchers to participate in information generation, reflect on the generated information, and co-create action to halt the HIV epidemic in the community.

Using the PAR methodology under a critical theoretical framework underpinned by the prosumer perspective, the present study provided a space for Nepalese male migrant workers from Kaski, Pokhara, Nepal, to co-create HIV prevention measures for the community. The co-researchers participated in a series of Focus Group Discussions (FGDs) to exchange and extend their knowledge and expertise on migrant work, HIV and HIV risk contexts and behaviours, HIV prevention, internet and smartphone use, internet-based HIV prevention, and the co-creation of internet-based HIV prevention initiatives. The participatory team was involved in generating information and analysing generated information that the primary researcher further analysed using thematic and reflective data analysis methods to prepare a doctoral thesis, academic publications, and presentations. Figure 1 below presents the theoretical framework of this research.

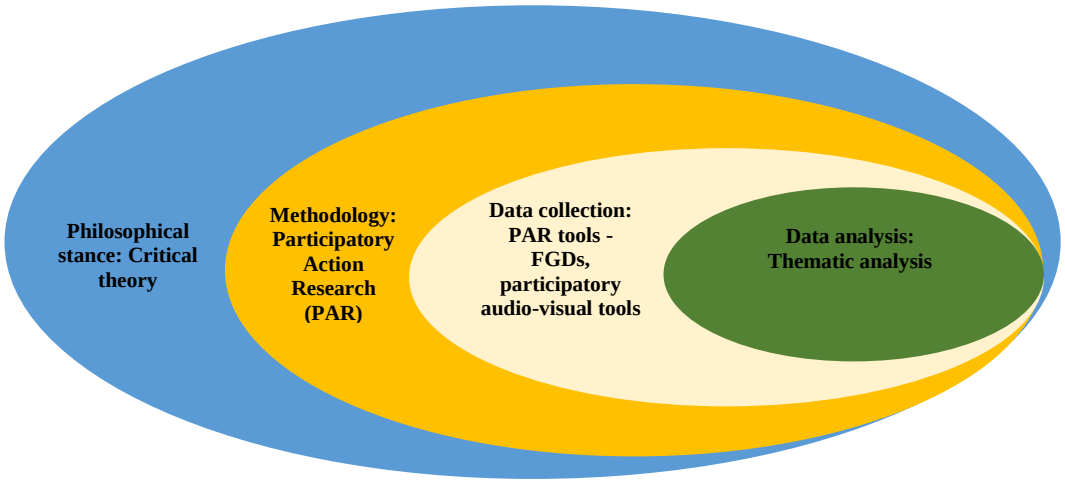

Figure 1: Research onion illustrating the theoretical research framework

Adapted from: Research Onion (Saunders, Lewis, & Thornhill, 2012)

1.5 Significance of the study

HIV prevention among migrants has been neglected in many countries, including Nepal (Weine & Kashuba, 2012). Thus, this study is significant in extending the body of knowledge by bringing the voices of marginalised Nepalese male migrant workers to the centre and collaborating with them to generate ideas about effective internet-based HIV prevention in the community.

The present study intends to inform policies and programmes for the prosumption of HIV prevention on the digital platform, emphasising the needs of Nepalese male migrant workers. The research findings will be disseminated through academic paper publications, conferences, reports, and local and global media outlets. It is anticipated that this study will increase understanding of HIV prevention interventions in Nepal and many countries where Nepalese migrant men work. The research harnesses the co-researchers' skills in the prosumption of internet-based HIV prevention. The study further expands the existing body of literature on HIV prevention using PAR as a

research methodology. The study is significant as it develops a method that utilises the PAR methodological framework within Toffler's prosumer theoretical perspective for community collaboration to investigate the role of the internet for effective HIV prevention for globally dispersed migrants' communities.

1.6 Researcher's position in the study

The research took place in Kaski District, Pokhara, Nepal, where nearly 12% of the population works abroad (CBS, 2012). The primary researcher was born and brought up as a migrant worker's family member. His father served 28 years in the Indian Army, and his brother worked in the Gulf countries for more than a decade. Besides family members, he has cousins, relatives, school friends, and community members working abroad. The proponent thought that collecting stories from migrant workers and how they lived abroad and in Nepal would be insightful. Anecdotes about migrants' sexual practices have been a subject of curiosity for many youths, including the researcher. The specifics about unprotected sex regularly mentioned have become a cause of concern and have compelled the researcher to explore different perspectives and find ways to encourage people to practice safe sex.

After completing his master's degree, the researcher started his career as a programme officer for a non-government organization (NGO) that intends to support HIV at-risk groups and people living with HIV (PLHIV) through skills-development training. Working in health promotion and HIV prevention in Nepal as a programme officer, he was involved in fortnightly group meetings with MSMs and MSWs to discuss their life experiences, expectations, and their needs in order to live a safe and healthy life. The meetings used a PAR approach and employed PAR tools to share the group members' life experiences and recommend actions for improvement. The experience extended the researcher's understanding of HIV and the wide range of individual,

socio-economic, cultural, and legal determinants which increase the risk of HIV in vulnerable or high-risk groups, including migrant workers.

From 2008 to 2015, the researcher was involved in the teaching profession; one of the subjects taught was Population Health and Environment Sciences. The experience extended his understanding of demographic indicators in Nepal and the social, cultural, and environmental aspects that influence the life and health of the Nepalese people. It also provided him with an opportunity to learn more about young adults and how they use digital technology. Young people are the group most adept with technology for information and entertainment, regardless of country. They commonly use digital platforms to connect with friends or look for new friends and, on some occasions, even casual partners.

Demographic indicators showed rapid growth in the international demand for Nepalese labour, which, in turn, meant a higher number of separated families and a consequent increase in the chances of extramarital relations, a practice prohibited by Nepalese culture and laws. The researcher learned that some migrant workers' families in his community have already been affected by HIV passed on from a migrant worker. These community members never disclosed their HIV status due to fears of possible stigma and discrimination against the infected person and their family members.

Multiple factors encouraged the proponent of the study to devote his research to HIV prevention for Nepalese migrant workers and their families. In this study, the researcher is considered an insider being raised in a migrant worker's family and a community member of the location where the research fieldwork took place, with the cultural and linguistic competence to match. However, as an academic researcher, he was aware of the possible gaps in HIV knowledge, academic level and skills and other socio-economic aspects with fellow co-researchers. The theoretical framework, PAR principles, and tools helped them bridge the gap and complete the research effectively. In a nutshell, this study combines the researcher's family background with academic

and work-related knowledge and experience, plus a passion for working for his local community.

1.7 Structure of the thesis

This thesis comprises seven chapters, with each chapter focusing on a specific aspect of the research process. Chapter one provides a brief introduction of this study, including information, research background and rationale of this study. The chapter further introduces the research questions, theoretical frameworks, research significance, and the researcher's position in the study.

Chapter two provides a contextual background of the research. The chapter provides a brief overview of the research's fieldwork site; the geographical, social, cultural, and demographic aspects of Nepal. In addition, the chapter briefly discusses the history and trend of labour migration from Nepal and its relation to the HIV epidemic in Nepal. The chapter further explains the global and Nepali response to HIV, including internet use among young adults and the online platforms' scope for HIV prevention.

Chapter three reviews available literature related to the research topic, particularly the theoretical and methodological frameworks used in this study. This includes related academic publications and government reports. It focuses on health promotion in the 21st century and major health promotion theories and models, beginning with the historical development of health promotion and major health promotion theories after the 1950s. The chapter focuses on health promotion in Nepal. It also discusses the global HIV epidemic in relation to HIV prevention in Nepal, the use of online platforms in health promotion and HIV prevention, and the scope for HIV prevention among Nepalese male migrant workers.

Chapter four describes the research design, methodology and methods. The chapter discusses the critical theoretical framework, prosumer perspectives in the online and

digital space, and the PAR methodology used in this study to explain their significance in this research. It discusses the Focus Group Discussion (FGD) method and thematic data analysis deployed for data collection and analysis in the research. The research's ethical approval process from the Auckland University of Technology Ethics Committee (AUTEC) and the Nepal Health Research Council (NHRC), plus the researcher's reflection on data collection, data management, transcription and translation, and thematic data analysis process, are also discussed.

Chapters five and six focus on the research findings using the thematic and reflective data analysis method. Chapter five focuses on the questions*, "What are the experiences of Nepalese male migrant workers living abroad in terms of HIV risk contexts and behaviours?"* and *"How do Nepalese male migrant workers perceive current internet and digital technology-based HIV prevention efforts?"* The research findings related to these questions are discussed under broad sections: individual, socio-cultural, and legal determinants which increase HIV risks among Nepalese male migrant workers and the role of the internet and internet-based health messaging on migrant workers' lives.

Chapter six continues research findings that focus on the third research supportive question, *"How might Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention?"* The chapter discusses the co-creation process and the themes emerging from the co-creation exercises.

Chapter seven is a discussion and conclusion chapter. This chapter discusses the research findings and how they fit with previous research and contemporary trends. The chapter provides recommendations at the policy and programme level and suggests further research on HIV prevention targeting Nepalese male migrant workers.

1.8 Conclusion

Chapter one presented a brief introduction to this research. The chapter began with the research background and rationale, followed by the research question, theoretical and methodological framework for this study. This chapter further discussed the significance of the study and the researcher's position in the research. It concluded with some brief information regarding the succeeding chapters.

Chapter Two

Research background and context

2.1 Introduction

This chapter provides a brief overview of the context and background of this study. The chapter begins with a brief introduction to Nepal, including a discussion of the geopolitical, demographic, economic, and socio-cultural aspects of international labour migration. The following section describes the HIV epidemic in Nepal and the response so far. The chapter then discusses labour migration from Nepal, including the history and trends of labour migration and government attempts to regulate it. The last section focuses on labour migration and its relation to the HIV risk in Nepal and the ongoing HIV prevention response efforts in the country.

2.2 Brief introduction to Nepal

The Federal Democratic Republic of Nepal (Nepal) is a landlocked country in the South Asian region nestled between two giant and growing powers, the People's Republic of China to the north and the Republic of India to the south, east and west. Nepal covers 147,181 square kilometres of land (Nepal Agricultural Research Council, 1995; CIA, 2021), divided into three geographical regions, Mountain, Hill and Terai, lying parallel to each other from east to west. The elevation of Nepal ranges from 60 metres above sea level to a staggering 8,848 metres;Mount Everest; the highest peak in the world. The diversity of topography has resulted in various climates, from tropical to alpine

(Bhattarai et al., 2020). The Mountain region in the north has many snow-capped mountains and freezing and dry weather with little fertile land. The Hill region has a moderate climate with hills, plains, and fertile valleys. The Terai region in the south is a fertile plain with a tropical and subtropical climate.

Nepal adopted federalism in 2007, restructuring the political and administrative divisions of the country. The Constitution of Nepal 2015 divided the country into seven different provinces. The fieldwork site for this research, Pokhara, a city in the Kaski District, is a fertile valley in the Hill region. Pokhara is the capital of Province No. 4 (Gandaki Province). Figure 2 below shows the administrative divisions of Nepal.

Figure 2. Province Map of Nepal:

retrieved from https://www.worldatlas.com/maps/nepal

Demographic indicators

The preliminary report of the latest national population and household census 2021 recorded a population of 29.1 million with an annual growth rate of 0.95% (CBS, 2022). However, details reports are yet to come. The population continues to increase,

although the annual growth rate has declined in recent decades. The population was 26,4 million, with a population growth rate of 1.35% in 2011 (CBS, 2012; S. Sharma, Pandey, Pathak, & Sijapati-Basnett, 2014), but was estimated to fall to 0.98% in 2020 (CIA, 2021). The dependency ratio is estimated to be 51%, with a child dependency ratio of 44.1 and an elderly dependency ratio of 8.9 in 2020 (CIA, 2021). Life expectancy at birth is estimated at 71.8 years of age, derived from the male life expectancy of 71.1 years among males and 72.6 years among females (CIA, 2021). The literacy rate of Nepal in 2018 was estimated at 67.9%, with male literacy at 78.6% and female literacy at 59.7% (CIA, 2021).

Seasonal and permanent migration for a living has been a part of many Nepalese communities. There is an ongoing demographic flow from low fertile remote Mountain and Hill areas to fertile plain valleys of Terai in search of better economic opportunities and living standards. This trend has made an impact on population distribution across the country. About 50% of the Nepalese population lives in the Terai region, which covers only about 17% of the total land area of Nepal (CBS 2012; CIA, 2021). Rural to urban migration in search of opportunities is another factor in the uneven distribution of the citizenry. The urban population was estimated to be 17% in 2011 (CBS, 2012), reaching 20.6% of the total population in 2020 (CIA, 2021). Emigration from Nepal has been increasing in recent decades, estimated at -31 per thousand population in 2020, increasing from -22 per thousand in 2015 (CIA, 2021).

Culture and religion

English common law with Hindu religious concepts are in practice in Nepal (CIA, 2021). The ancient Hindu religious philosophy remains dominant in Nepalese society, given that more than three-quarters of the population follows this religion. The household census of 2011 identified Hinduism (81.3%), Buddhism (9%), Islam (4.4%), Kiratism (3.1%), and Christianity (1.4%) as the major religions followed in Nepal (CBS, 2012). The census recorded 125 castes or ethnic groups speaking 123 languages as their

mother tongue and residing in Nepal since ancient times (CBS, 2012). Nepal has remained a multi-religious and multicultural society. Nepalese people consider their “unity in diversity” with religious and cultural tolerance as the unique characteristics that have been maintained and strengthened perpetually.

Economy

Nepal is a developing country, with an estimated one-quarter of the population living below the poverty line (CIA, 2021; S. Sharma et al., 2014). The United Nations Development Programme (UNDP) human development index (HDI) Report 2019 placed Nepal at the 142nd position out of 189 countries (UNDP, 2020).

Approximately 16.81 million economically active adults are in Nepal (CIA, 2021). Among them, about six to eight million young Nepalese work as migrant workers, sending remittances representing about 30% of the national Gross Domestic Product (GDP) (Bhattarai et al., 2020; CIA, 2021). Agriculture remains the primary employment sector. In 2019, it was recorded that about 65% of the population is engaged in this industry (World Bank, 2020). Nevertheless, the agricultural sector contributes to just one-third of the GDP (CIA, 2021). As a consequence of the large proportion of the population engaged in traditional agriculture and migrant-work, the unemployment rate in Nepal was just 3% of the total population in 2019 (CIA, 2021).

Agriculture-based small-scale industries and the tourism industry are the other significant sources of employment and income in Nepal. The diverse topography and natural beauty of the country led to the growth in adventure tourism within a short span of time. Additionally, cultural heritage and religious pilgrimages for Buddhists and Hindus are the other attractions for tourists.

As a country rich in water flowing from the Himalayas, Nepal can potentially produce over 90,000 megawatts of hydroelectricity (Bergner, 2013). However, the Department of Electricity Development report shows that 101 hydropower projects are running with

a maximum capacity of only 1362 Megawatts by October 2021. Low infrastructure development, the lack of capital, and geographical difficulties are significant barriers to industrial development. Notably, the industrial sector contributes only about 12% to the GDP (CIA, 2021).

The 10-year-long Maoist War (called the People's War) that took place from 1996 to 2006 severely impacted the economy of Nepal (Pradhan, 2009). The war destroyed peace and order, damaged infrastructure, and adversely affected development projects in all regions. The growing incidence of breaches of peace and order and increasing unemployment during the Maoist War contributed to a dramatic increase in international labour migration. The impact was most visible in the national census of 2011, in which about 7.3% population was abroad for work. It had been only 3.2% in 2001 (CBS, 2012). The 2011 census further recorded that about one-third of households have at least a family member working abroad, sending remittances to cover their living allowances (CBS, 2012; Shrestha et al., 2014). Nepal, at present, is one of the five countries receiving significant remittances in terms of GDP, which, as mentioned earlier, supports more than a quarter of the national GDP (Bhattarai et al., 2020; ILO, 2020).

The Maoist war (named as people’s movement) from 1996 to 2006 ended with a peace settlement in 2007 led to the abolition of the 240-year-old ruling monarchy (Shrestha, 2008). The Kingdom of Nepal was renamed the Federal Democratic Republic of Nepal. The constitution of the Federal Democratic Republic of Nepal 2015 divided the nation into seven provinces. The war impacted almost every sector, including agriculture, industry, employment, and foreign aid (Jha, 2013)

Nepal experienced a massive earthquake in 2015 that severely affected the economy with massive destruction to life and property (Gautam & Chhetri, 2016). This natural calamity further contributed to the increase in internal and international migration because people needed to earn a living during the post-earthquake reconstruction

(Gurung, 2018). Nepal's landlocked geographical location, poor infrastructure, and unstable government presented significant challenges for economic growth recovery efforts after the earthquake. The small economy, technological limitations, remote location, and Nepal's susceptibility to natural disasters have also impacted foreign investment and trade prospects to generate employment in Nepal.

2.3 Labour migration from Nepal

Labour migration has remained an essential source of income for many households in Nepal (A. Ghimire, Rajbanshi, Gurung, Adhikari, & Thieme, 2011). The national population and household census held in 2021 recorded about 2.1 million people from Nepal were working as migrant workers (CBS, 2022). However, multiple studies estimated that more than 4 million people from Nepal are migrants. Many of them are undocumented due to open borders with India and the migration of whole families (Bhattarai et al., 2020; S. Sharma et al., 2014). The census further recorded about 29% of total households in Nepal were receiving financial support from at least one family member abroad (CBS, 2012; Sharma et al., 2014). Remarkably, Nepal lacks clear records of Nepalese migrant workers working in India due to an open border policy. The lack of records has also contributed to undocumented migration from Nepal, via India, to third countries.

There is an increasing trend in international labour migration in Nepal. An estimated six to eight million young Nepalese are working as migrant labourers in 2020, contributing about 28% of the national GDP (Bhattarai et la., 2020). Figure 5 below shows the percentage of the absentee population in Nepal in the previous censuses.

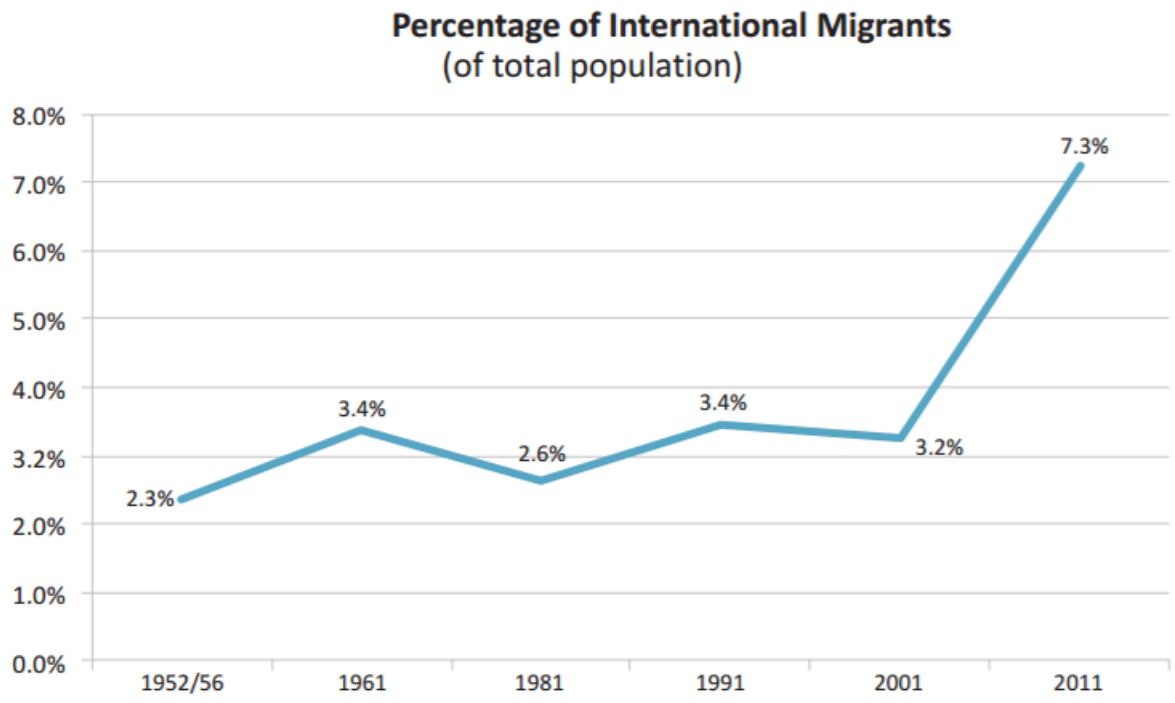

Figure 3: Absence population in National Census 1952/56 - 2011

Source: Sharma et al., (2014) State of Migration in Nepal

Characteristics of Nepalese migrants

Unemployment in the country and political instability have increased foreign employment and study among Nepalese youths (CBS, 2012; Sharma et al., 2014). The census of 2011 recorded that about 91% of total migrants from Nepal were between the ages of 15 to 54. Of this, 88% were male, and 85% were from rural areas (CBS, 2012; Sharma et al., 2014). Significant poverty in the country forced about 45% of migrant workers to leave Nepal before the age of 22. Only about 24% gained the opportunity to complete their secondary or higher education (CBS, 2012; Sharma et al., 2014). Migration for employment (79%) is the main purpose of Nepalese migrants. About 6% migrated for education and training, while 10% migrated to reunite with family. The remaining 5% migrated for other undisclosed purposes (Sharma et al., 2014). Figure 4 below provides the number of labour permits issued from 2008/09 to

2018/19. However, this figure may not provide actual labour migration from Nepal. As discussed, India is one of the major destinations for Nepalese migrant workers with an open border, and there is no record of transborder migration with either country. Additionally, many Nepalese use Indian airports to travel to third countries.

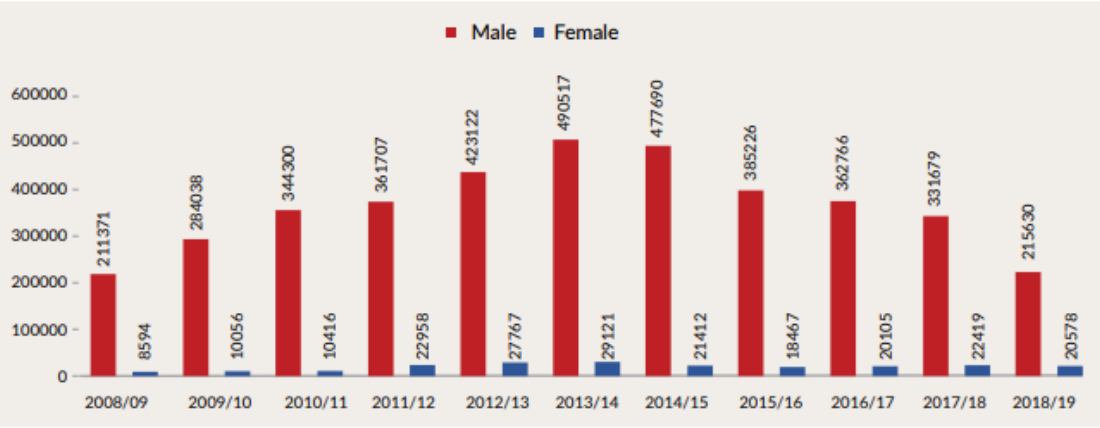

Figure 4: Major destinations of Nepalese migrant workers

Source: Ministry of Labour, Employment and Social Security (MoLESS) (2020), Nepal Labour Migration Report 2020. Retrieved from: https://moless.gov.np/

Destinations of Nepalese migrant workers

India has remained a significant destination for Nepalese workers for centuries due to the open borders and the countries' religious and cultural connections. However, the flow of Nepalese migrant workers has shifted to other parts of the world in recent decades. The National Census 2011 recorded India as the destination of 37.6% Nepalese migrant workers, and 37.6% were gone to the Gulf countries, especially Saudi Arabia, Qatar, and the UAE. About 13% went to ASEAN countries, mainly Malaysia and the remaining to other parts of the world (CBS, 2012). The figure below shows the signification destination of Nepalese migrant workers other than India in 2017-2019. Due to the open border, the record of Indo-Nepal migration is not possible except in the National census.

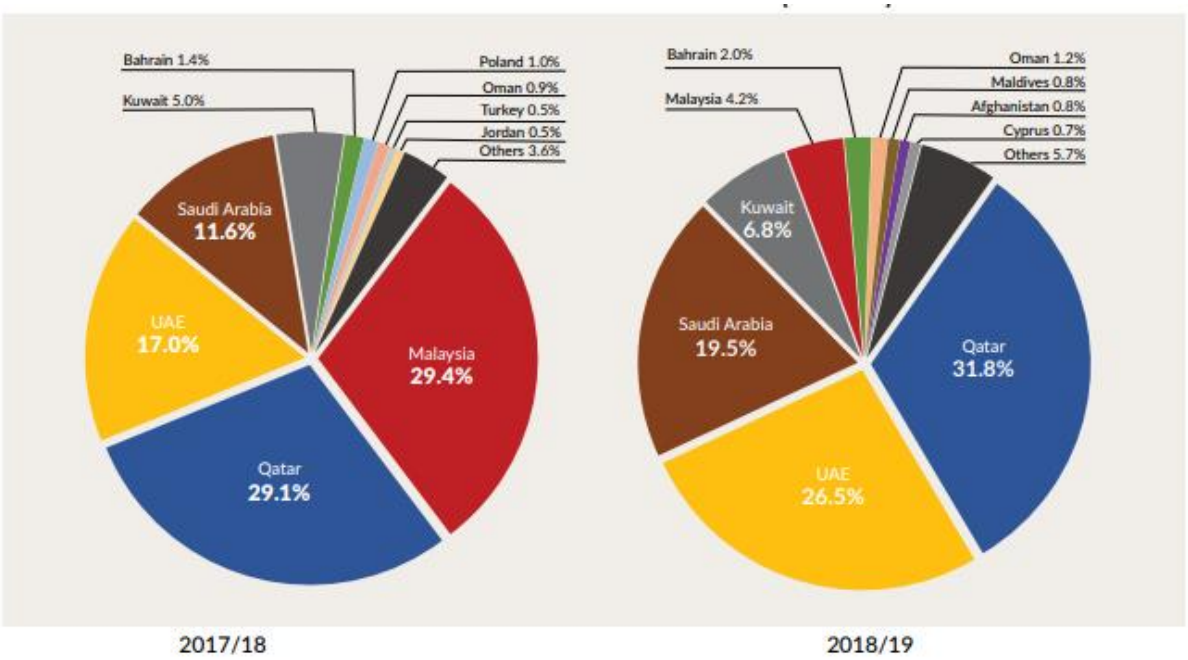

Figure 5: Major destinations of Nepalese migrant workers

Source: MoLESS (2020), Nepal Labour Migration Report 2020.

History and trend of labour migration from Nepal

International labour migration is not a new phenomenon in Nepal, as migration to India and the former Tibet for trade can be traced back to ancient history (Sijapati & Limbu, 2017). Later, the Treaty of Sugauli in 1815 between the then government of Nepal and the British colonial government in India was the first legal document that formally opened the door for Nepalese youth in the British colonial army in India (Khanduri, 1997; Sijapati & Limbu, 2017). An estimated 200,000 Nepalese youth recruited as Gurkhas under the British colonial army in India participated in World War I and World War II and created an identity of bravery and loyalty. India continued to be the major destination until 2001; However, the recent census of 2011 indicated the labour migration trend shifting to Gulf countries and Malaysia due to higher wages and facilities.

Labour migration accelerated after the 1990s due to high unemployment rates in Nepal and the government's policy to supply Nepalese youth to the global labour market as an alternative to address growing unemployment in the country (Ministry of Health and Population [MoHP], 2011). The increase in foreign employment shifted the Nepalese economy from agriculture-based to remittances-based (Sah, 2019).

Currently, Nepal is a source of low-skilled human resources for India, Malaysia, and the Gulf countries for temporary construction workers, security guards, drivers, masons, and household workers. Nepal reportedly issues more than a half-million work permits every year, with most migrants heading for Gulf countries and Malaysia (ILO, 2017; Kunwar, 2020). Department of foreign employment (DoFE) recorded more than 465,000 work permits issued in the last nine months of the Fiscal year 2021-2022. As mentioned previously, India and Nepal have an open border, and neither country maintains formal registration and records of transborder migration of citizens. Therefore, it is difficult to estimate the population of Nepalese migrant workers working in India.

Impacts on the national economy

Poor infrastructural development, poverty and lack of employment opportunities in the country are the primary causes of labour migration from Nepal (Jaquet, Kohler, & Schwilch, 2019; S. Sharma et al., 2014). However, the experience of having a large population of youth living abroad for employment purposes has negative impacts on the use of resources and the overall economic development of Nepal (Jaquet et al., 2019). While remittances have been a base for improving the financial status of migrant worker families and improving the country's economy, some negative social and cultural impacts have been observed, including the use of land and other natural resources in Nepal.

The absence of male muscle in the family, for instance, and the increase in the purchasing power of households have shifted the purpose of investment remittances

from production to the purchase of daily needs (J. Adhikari & Hobley, 2015). The lack of young men in many rural communities has made it challenging for older adults to accomplish day-to-day activities and manage emergencies such as illness, accidents, and deaths. The absence of husbands from families increases work activities within and outside the household for women. Additionally, wives of migrant workers may suffer from sexual abuse. Should a wife remaining in Nepal appear in public, the husband or other family members may suspect extramarital relations (Adhikari & Hobley, 2015). Some women, however, do experience a positive increase in freedom and a feeling of relief from abusive and demanding husbands as a consequence of their absence (Rajkarnikar, 2017). Importantly, for this research, migrant workers coming in and out of Pokhara City (and other cities in Nepal), meant it had seen growth in exposure to activities related to sex work and business opportunities of a similar nature.

Significant factors for labour migration

Poor infrastructural development and the high unemployment in the country are the primary causes of labour migration from Nepal (Sharma et al., 2014). The 10-year Maoist War destroyed peace and order, destroyed infrastructure, and halted development work, giving rise to high unemployment rates (Pradhan, 2009). Together with growing labour demands in the international labour market, the policy to supply Nepalese youth as a labour force to reduce the unemployment problem after the political change in 1990 was also a significant contributing factor to the growing labour migration trend. The war and its impacts on society, culture, and economy forced people to participate in internal and international migration in search of opportunities and the prospect of improving the economic standard for their families.

Most Nepalese migrant workers possess minimal work-related skills or training before they go abroad. As a low-skilled human resource, these workers are more susceptible to labour exploitation, physical hazards, and mental issues: ILO Nepal reported that

about 80% of Nepalese workers are employed in dirty, dangerous, and demeaning (3D) jobs, and about 700 Nepalese people have died abroad each year for the past ten years (ILO Nepal, 2017).

2.4 The response of Nepal to regulate international labour migration

Migrant workers have been part of Nepalese society for centuries. The Government of Nepal has systematically promoted it for the last three decades to reduce the burden of unemployment in the country. However, while migrant workers play a vital role in the economy of both the home and the host country, they are not a focus group in the policy and programmes of either country.

Labour supply has become a lucrative business for many labour-supplying agencies and agents in Nepal. Department of Foreign Employment (DoFE) has recorded about 860 registered human resources supply agencies in the country (Ministry of Labour, Employment and Social Security [MoLESS], 2020). Most agencies hire local agents on a commission basis to contract potential migrant workers. Most Nepalese migrant workers rely on these agents, who, in turn, depend on commissions to make a living. Consequently, agents may provide potential workers with false information about the type of work, the work hours, and the wages they can expect to receive. The People Forum for Human Rights (PFHR) reported in 2017 that most Nepalese migrant workers lack proper knowledge of the recruitment process, work and workplace conditions, and legal provisions for migrant workers in their country of destination (PFHR, 2017). Insufficient or false information puts them at high risk of labour exploitation, human rights violations, and hindrances to equitable legal treatment in the case of any unfavourable circumstances. As a result, Nepal has made efforts to make migrant work more systematic, respectful, and safe.

The Foreign Employment Act 1985 and promotion of labour migration

The implementation of the Foreign Employment Act 1985 was a long-standing initiative of the Government of Nepal to make foreign employment of its nationals safe and respectful (Sijapati & Limbu, 2017). The Act was guided by the aim to search for employment for Nepalese youth abroad, and it established a framework to make it more effective and appropriate. The Act was amended three times, in 1993, 1998, and 2007, and was later replaced by a New Foreign Employment Act 2007. The Act has the provision of mandatory pre-departure orientation on occupational health and safety, destination country and language, and other aspects, including HIV/AIDS, infectious diseases, and sexual and reproductive health. However, due to a lack of proper implementation, many Nepalese migrant workers lack the basic information about their destination country and work. It required labour permit approval pre-work medicals and insurance and the implementation of a written contract between a recruitment agency and migrant workers. It also required the establishment of a labour help desk at the international airport, the recruitment of a labour attaché in countries where 5000 or more Nepalese are working, a foreign employment welfare fund, a free visa, and free plane tickets. It also required the Government to address contextual issues of migrant workers (MoLESS, 2020; Sijapati & Limbu, 2017). In addition, Nepal signed bilateral agreements with nine countries, including Qatar, UAE, Malaysia, Mauritius, the Republic of Korea, Bahrain, Japan, Jordan, and Israel, designed to protect the rights of Nepalese migrant workers (MoLESS, 2020).

The Government further implemented a Foreign Employment Policy in 2012 that focused on the safety and protection of migrant workers, especially those involved in domestic and caregiving jobs (MoLESS, 2020). Similarly, the Domestic Workers Guidelines of 2015 ensured a cost-free recruitment process for domestic workers and imposed an age limit of 24 years or above for female domestic workers. Additionally, this set of Guidelines, certified by the Embassy of Nepal, has provisions that provide full coverage life insurance to domestic workers against any injuries or death and make

the employer commit to protecting domestic workers against all forms of violence and exploitation (Sijapati & Limbu, 2017).

The Constitution of the Federal Democratic Republic of Nepal enacted in 2015 has ensured the right to employment and mobility for employment targeting Nepalese migrant workers. The Government of Nepal has already taken some initiatives toward safe migration through legislation and the establishment of multi-level institutional mechanisms to regulate internal and international employment and issues related to migrant worker welfare. The Ministry of Labour and Employment (MoLE) is the central institution regulating labour and employment within and outside the country. MoLE has a dedicated branch called the Foreign Employment and International Labour Relations Division designed to look after matters related to foreign employment. The Foreign Employment Promotion Board (FEPB), established in 2008, the Department of Foreign Employment (DoFE), and the Foreign Employment Tribunal (FET), established in 2007, are the other institutional mechanisms developed to regulate foreign employment (Sijapati & Limbu, 2017). These mechanisms contribute to the efforts of the Government of Nepal to make foreign employment systematic and safe. However, the need for effective implementation remains crucial so that migrant workers can lead safe, respectful, and dignified careers to access services and facilities that allow them to exercise fundamental human and employment rights.

2.5 Health delivery system in Nepal

Quality health systems and accessible, affordable health services and information are vital to the health and well-being of people in any society. The health service delivery system of Nepal is stratified into three levels – primary, secondary and tertiary levels. The District Health Office (DHO), which represents primary healthcare institutions, manages and delivers preventive and curative health services in the districts. A DHO comprises a district hospital, primary health centres, health posts, and sub-health

posts. Meanwhile, about 50,000 female community health volunteers (FCHVs) provide health services at the community level (MOHP/Nepal, New ERA/Nepal, & ICF International, 2012).

The Provincial Health Directorates and provincial hospitals are the secondary level healthcare institutions that control, manage, and facilitate health services and programmes at the Provincial level. The Department of Health and other specialised hospitals are tertiary-level institutions. Each higher-level healthcare institution is envisioned to supervise, monitor, and train the respective lower-level institutions beneath them. In the same way, lower-level health institutions act as referral services for ensuring optimum care (UNDP, 2013).

Effective health service delivery remains an enduring challenge in Nepal due to the separation of individuals into different socio-economic groups and geographical areas (Garha, 2016). Many people in the rural areas of Nepal walk between one to four hours to reach a local health post (S. R. Adhikari, 2013). The challenging topography and distance are the principal hindrances for most individuals seeking prompt and timely care in rural Nepal (Garha, 2016). Records show that about 80% of the population in Nepal lives in rural areas, and only about 28% of them have comparatively easy access to a medical facility (R. Paudel, Upadhyaya, & Pahari, 2012). Health, education, employment, and transportation facilities are cited as major indicators of quality of life. The lack of these services pushes Nepalese communities to resort to internal or international migration.

Human resources in the medical sector in Nepal are minimal, with an approximate proportion of 0.3 doctors and one nurse per 1000 patients, which is far lower than WHO requirements of 1 doctor and 1.7 nurses per 1000 population (Garha, 2016). Even with government funding, patients are compelled to make out-of-pocket payments for essential health services (Adhikari, 2013). Nonetheless, the government is gradually expanding the national medical insurance programme it introduced for its citizens in

2016. This programme is regarded as an opportunity for every Nepalese to access available health services, given that poverty is the dominant social determinant for poor health (Ranabhat et al., 2019).

Technology development and its adoption as an alternative to the conventional health delivery system are exciting processes taking place globally. The increasingly common use of technological tools and services has provided people with immediate access to information that can help them improve their general health and well-being.

Nepal incorporated modern information technology in its health sector in 2004. HealthNet Nepal, a non-profit organisation, was introduced in 2004 in collaboration with the private sector and the Apollo Hospital in India to serve the community by providing affordable health services (MoHP, 2017). Similarly, in 2006, a wireless connection was set to connect rural health clinics to regional hospitals in Pokhara. Later, in 2010, the Ministry of Health (MoH) initiated an online conferencing and hotline service called “Hello-Health” that connected Patan Hospital in Kathmandu with 16 district hospitals. The programme had a dial-in facility for support to service providers at the district level.

In 2017, Nepal launched a National e-Health Strategy to provide accessible information through information and communications technology (ICT) and for all the routine health information to be stored in a central database (MoH, 2017). The e-Health facility was initiated to deliver equitable and high-quality healthcare services to enable every Nepalese to enjoy a productive and quality life. It was intended to harness the potential of ICT to improve health services and health governance and management on a nationwide scale. Likewise, it was expected to improve planning, managing, and supporting public health and clinical interventions by improving information and supporting evidence-based health measures. The figure below shows the conceptual framework for the practical function of the e-Health initiative in Nepal.

Figure 6: National e-Health Strategy 2017, Nepal.

Retrieved from: http://nhssp.org.np/

2.6 HIV epidemic in Nepal

Global HIV epidemic in brief

HIV continues to be a serious public health threat globally since the first case was detected in 1981. An estimated 37.7 million people are currently living with HIV, often abbreviated as PLHIV, globally (UNAIDS, 2021b). About 1.5 million new infections and 680,000 AIDS-related deaths occurred in the same year. Globally, approximately 84% of PLHIV know their HIV status, 73% are receiving Antiretroviral Therapy (ART) and 66% were virally suppressed by the end of 2020 (UNAIDS, 2021a). About 5.6 million PLHIV reside in the Asia-Pacific region, where only about 78% of PLHIV know their

status, 64% of them are receiving ART, and 61% are virally suppressed (UNAIDS, 2021a). In Nepal, about 83% of PLHIV know their status, 82% of people who know their status are on treatment and 31% of PLHIV who are on treatment are virally suppressed (NCASC, 2021)

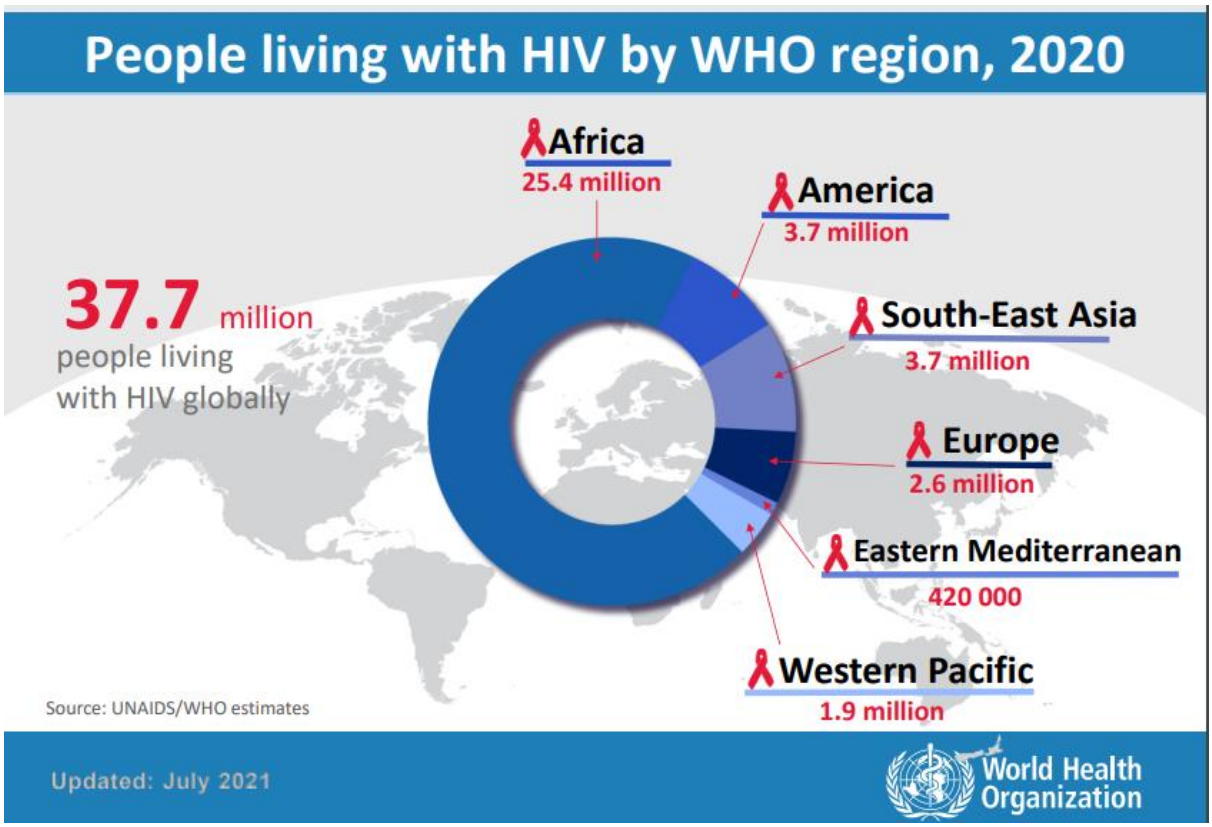

Figure 7. WHO HIV estimates and Updates July 2021;

Retrieved from: https://cdn.who.int/

In South Asia, India is home to an estimated population of 2.3 million PLHIV, with a prevalence rate of 0.2% among the adult population aged 15 to 49 (NACO, 2019; UNAIDS, 2020a). Nepal comes second, where an estimated 30,000 PLHIV reside with a 0.1% prevalence rate among adult populations between 15 and 49 years (CIA, 2021; NCASC, 2020). The neighbouring country of Afghanistan has a 0.04% prevalence rate with 11,000 PLHIV, while Pakistan has a rate of 0.12% with around 25,000 PLHIV. Sri

Lanka has less than 0.1%, with around 3,600 PLHIV living in the country(UNAIDS, 2020). Nepal and India have an open borders, and labour migration is common in both countries across the shared borders. Open borders and labour migration to India have been reported as major causes of HIV in Nepal (Khanal & Karkee, 2012; Bam et al., 2013; Mukharjee & Mail, 2014). The pool of PLHIV in India, with a high HIV prevalence rate (1.6%) in an estimated population of 657,800 female sex workers (UNAIDS, 2020), has been cited as a challenge to the HIV epidemic response in Nepal (NCASC, 2018; Khanal & Karkee, 2012, Mukharjee & Mail, 2014; Bam et al., 2013).

HIV epidemic in Nepal

The first case of HIV was reported in Nepal in 1988 (Khanal & Karkee, 2012; UNAIDS, 2018; NCASC, 2018). Subsequently, the trend for the epidemic kept increasing until around the year 2010; however, rates have decreased at present (Poudel et al., 2016). Currently, an estimated 30,000 PLHIV and HIV prevalence among adults between 15-49 is estimated to be 0.1% in Nepal (CIA, 2021; NCASC, 2020; UNAIDS, 2020). Among this estimated population, about 78% of PLHIV in Nepal know their HIV status and 81% who know their HIV status have been enrolled for ARV treatment, and 86% who enrolled in treatment have suppressed viral load (UNAIDS, 2020). Unprotected sex with multiple partners is the major cause of HIV transmission globally, accounting for more than 80% of HIV transmission in Nepal (NCASC, 2020; UNAIDS, 2018)

Some communities such as female and male sex workers (F/MSWs) and their clients, men who have sex with men (MSMs), transgender people (TGs), injecting drug users (IDUs), and migrant workers and their spouses are at higher risk of HIV due to their sexual practices (UNAIDS, 2018). An estimated population of FSWs (67, 000), MSM (60, 300), TG (21, 500), and IDUs (30, 900) in Nepal (UNAIDS, 2020) and in more than 4 million male migrant workers and their spouses are vulnerable to HIV in Nepal (Simkhada, Regmi, Van Teijlingen, & Aryal, 2017; ILO, 2020; Bhattrai et al., 2020). The prevalence of HIV is variable in these groups in Nepal. Nepalese male migrant workers

have the lowest HIV prevalence (0.4%) followed by FSWs (4.2%), MSMs (5%), IDUs (8.8%), and TGs (8.5%) (NCASC, 2021). However, the high number of Nepalese male migrant workers as a percentage of the general population means they comparably represent the biggest pool of PLHIV in Nepal and pose an ongoing risk to themselves and their families.

The HIV epidemic varies in different geographical and administrative regions in Nepal. The concentration of critical populations such as sex workers and their clients, IDUs, and return migrants in big cities and particular regions may be the cause of this variance (NCASC, 2018). Unprotected casual and commercial sex and the sharing of unclean needles by IDUs were the principal drivers of the HIV epidemic in cities and regions adjoining highways. Whereas labour migration, especially to some regions in India and other countries, is the primary risk factor in many regions of Nepal, given the increase in HIV cases alongside an increased volume in labour migration (Aryal, 2017).

HIV prevalence in Nepal is a gendered phenomenon, with about two-thirds (66.5%) of the infected population being male (NCASC, 2018). This prevalence is most likely a consequence of the increase in labour migration or the inadequate investigation of HIV infection among females. However, HIV prevalence among women in the general population has been growing since international labour migration increased after 2001, and this is likely linked to an increase in extramarital relations during the separation period of migrant workers from their spouses, or women being infected by their husbands upon their return to Nepal (Aryal, 2017a)

2.7 Labour migration from Nepal and HIV risk

Migration and health have a dynamic and complex correlation, given that migration can increase health risks such as HIV due to various determinants such as socio-demographic contexts, awareness levels, lifestyles, sexual practices, and levels of

access to affordable healthcare (Behera & Intarak, 2018; IOM, 2020). Migration and HIV are two different phenomena; however, they are interrelated for many reasons. Whether internal or international migration, labour migrants usually separate from their spouses or regular sex partners to earn a higher living and for financial status improvement (A. Ghimire et al., 2011). Migrant workers are more vulnerable to HIV due to determinants such as being at a sexually active age, their separation from family or spouse, better access to money, workplace and accommodation-related influences, and alcohol or substance use, often accompanied by their inadequate knowledge and understanding of sexually transmitted diseases or STDs (Weine & Kashuba, 2012).

Migrant workers are more likely to fall into 3D jobs, and discriminatory laws in many host countries make the workers more vulnerable to labour exploitation and sexual abuse (Adhikary, Sheppard, Keen, & Van Teijlingen, 2018). On the other hand, the biological need for sex at their age, the workers' access to additional money, and the primal instinct that causes them to get excited with new sexual experiences might lead them to engage in casual sex that is usually unprotected as a result of their ignorance of STDs and HIV, limited access to condoms, and substance use (Anglewicz, 2012; Yang, Derlega, & Luo, 2007). Thus, migrant workers are identified as vulnerable to HIV due to these individual and contextual factors (UNAIDS, 2014).

Having a single sexual partner and consistent condom use in each sexual encounter can help halt HIV transmission. However, the preference for having multiple sex partners for Nepalese migrant workers is cited as high, whereas the use of the protective measure, such as condom use, is low (Bam et al., 2013; Dahal et al., 2014; Khanal & Karkee, 2012; Mukherjee & Mail, 2014). For instance, a previous study recorded that about 85% of Nepalese male migrant workers engage in casual sex in India, and of those, 33% have taken part in unprotected sex (Bam et al., 2013). Furthermore, the prohibition of sex work in Nepal and the desire to feel the thrill in red-light areas (supported by peer influence and alcohol use) were cited as the factors

influencing Nepalese migrants in India to patronise prostitution and engage in casual sex. Finally, misconceptions that condoms reduce sexual pleasure and that a healthy-looking partner cannot be HIV infected were cited as the factors for inconsistency in condom use (Bam et al., 2013).

A similar study from Dahal et al. (2014) conducted among returned male migrant workers from 20 countries, not including India, showed that 49% were involved in sex whilst overseas, with paid or unpaid partners. About 37% reported inconsistent condom use, and 2% admitted to never using a condom. Legal and cultural complications to obtaining a condom, and embarrassment and fear of purchasing and carrying a condom all the time, are the primary factors cited for low condom use among migrant workers (Dahal et al., 2014). The research further specified that mixed gender workplaces and accommodations and extended stays abroad had increased the prevalence of casual sexual relations, increasing the probability of poor condom use.

Commercial sex workers or casual sex partners are available in many destination countries (Bam et al., 2013; Dahal et al., 2014). For instance, in many Indian cities, prostitution is cheap and readily available for soliciting. Many Indian sex workers have low social status, are poor, and are less likely to negotiate and insist on condom use (Bam et al., 2013). Similarly, in Malaysia, one of the significant destinations for Nepalese migrant workers and where commercial sex work continues to thrive, HIV infection among sex workers was estimated at 6.3% in 2019 (UNAIDS, 2020). The Malaysian Ministry of Health estimated that 17% of FSWs in Kuala Lumpur and 11% of FSWs in Penang are HIV positive. These are alarming statistics, given that the cities mentioned above are the two main destinations for Nepalese migrant workers in Malaysia (Ngadiman, Suleiman, & Chandrasekaran, 2016).

The low perceived risk of contracting the disease due to risky sexual behaviour is cited as an influencing factor encouraging Nepalese male migrant workers to engage in unprotected sex (Khanal & Karkee, 2012; Mukherjee & Mail, 2014; Poudel et al., 2004).

Misconceptions such as the belief that condom use reduces the sexual pleasure and that selecting a healthy-looking partner can prevent HIV infection are high among the group (Bam et al., 2013; Khanal & Karkee, 2012; Poudel et al., 2004; Wasti, Simkhada, Randall, & van Teijlingen, 2009). Poor education further plays a pivotal role as many male Nepalese migrant workers possess insufficient knowledge or have misconceptions about modes of HIV transmission and the means of preventing HIV (Joshi et al., 2014). Thus, increasing the knowledge of male Nepalese migrant workers about HIV, its modes of transmission, and prevention methods are vital if the chain of HIV transmission is to be broken.

2.8 Global HIV prevention strategies and models in the past 40 years

Human Immunodeficiency Virus (HIV) has been a public health challenge since first detected in 1981 (Merson, O'Malley, Serwadda, & Apisuk, 2008). HIV quickly became a global public health threat because of its association with human sexual behaviour (Merson, O'Malley, Serwadda, & Apisuk, 2008). HIV had already been declared to be an epidemic by 1985.

The World Health Organization (WHO) and the US Department of Health and Human Services hosted the first international AIDS conference in 1985 to exchange research and progress on HIV/AIDS responses (Lalonde, Wolvaardt, Webb, & Tournas-Hardt, 2007). In 1987, WHO introduced the first program targeting the HIV epidemic, the Global Programme on AIDS (GPA) (Merson et al., 2008). The program ended in 1996 and was replaced by the Joint United Nations Programme on HIV/AIDS (UNAIDS), which works as a UN arm to fight the HIV epidemic (Merson et al., 2008).

The International AIDS Society (IAS), formed in 1988, was an association of professionals working to fight HIV in the early days of the epidemic (Merson et al., 2008). This has been expanded to become the largest association of professionals

working on HIV, with members from more than 180 countries who research, advocate and drive urgent action to reduce the global impact of HIV.

The UN declared Millennium Development Goals (MDGs) in 2000, including an ambitious goal to conquer HIV/AIDS by 2015 (Coovadia & Hadigham, 2005). All UN member counties, including Nepal, ratified the statement and encompassed its spirit in HIV interventions (Coovadia, & Hadingham, 2005). Further, International Labour Organizations (ILO) launched the 'ILO Code of Practice on HIV/AIDS and the World of Work 2001' that emphasised zero discrimination against PLHIV, no pre-work HIV screening and no discrimination against PLHIV at work (Leipziger, 2010). However, in most countries, including New Zealand, an HIV-negative status is mandatory for migrant workers. This requirement has negatively impacted migrant PLHIV's rights to financial independence and purchasing capacity and has increased family and social discrimination.

The eight wealthiest countries, known as the Group of Eight (G8), initiated the Global Fund (GF) to fight against AIDS, tuberculosis, and malaria in 2002 (Beyrer et al., 2016). The GF also focused on the MDGs of combating these diseases through a public-private partnership. As a result, the GF has made a significant and sustainable contribution to reducing infection, illness and deaths from HIV/AIDS, malaria and tuberculosis (Maciocco & Stefanini, 2007). Moreover, it is a significant donor in more than 140 developing countries, including Nepal, to fight against the HIV epidemic (Beyrer et al., 2016; Seale, Bains, & Avrett, 2010).

The GF emphasised its commitment to community participation with a mandatory clause of collaboration with the targeted community and their participation to be eligible for funding (Brugha et al., 2004). The GF donates through a country coordinating mechanism (CCM) comprising government representatives, private sectors, technical partners, civil society, and targeted community members, including PLHIV and at-risk communities such as MSM and FSW IDUs, MSW, TG, and migrant workers. This

provision has maximised marginalised PLHIV and other high-risk communities' participation in the GF funded program, which is crucial for the maximum application of the fund to support the communities' empowerment and well-being (Putzel, 2004).

The world moved from MDGs to the Sustainable Development Goals (SDGs) era in 2016 (Harries et al., 2016). MDGs had targeted the achievement of universal access to treatment for HIV/AIDS and controlling HIV spread by 2015. However, at the end of the MDG era, there were still an estimated 2.1 million new HIV infections worldwide, a total of 36.7 million people living with HIV/AIDS, and 1.1 million deaths (UNAIDS, 2016). MDG could not achieve its goal because of the multiple structural and legal barriers in many countries. For example, same-sex acts, sex work, and injection drug use were illegal in many countries (UNAIDS, 2014). These barriers made it difficult for key populations to access HIV services.

SDGs included a highly ambitious target of ending the HIV/AIDS epidemic by 2030 (UN, 2015). SDG targets specified that by 2020, 90% of individuals living with HIV would know their HIV status, 90% of people with a diagnosed HIV infection would receive sustained antiretroviral therapy (ART), and 90% of those on ART would be virally suppressed, ending the HIV epidemic by 2030. However, the targets have not yet been achieved.

2.8.1 HIV prevention models

Multiple HIV prevention models have been exercised in the forty years of the HIV epidemic. There are four main HIV prevention strategies or models in practice: the behaviour change model, the biomedical model, the structural approach, and the combination model for HIV prevention. Each has its strengths and limitations.

The behaviour change approach for HIV prevention

The first HIV prevention model was the behaviour change model developed in the 1980s, the early stage of the HIV epidemic (UNAIDS, 1999). This model for HIV prevention was targeted to change sexual behaviours, given that sexual practices had, at that time, been identified as the primary cause of HIV transmission. ABC (Abstinence, Be faithful, use Condom) was the first behaviour change model implemented in Sub-Saharan Africa to prevent a growing HIV transmission through sexual practices (UNAIDS, 2010). The model was restrictive and moralistic, encouraging people to avoid extramarital sex. Traditional health education, deploying a behaviour change perspective, underpinned the ABC model to teach people what they should or should not do to support HIV prevention (UNAIDS, 1999). The model targeted individual-level advocacy for education, counselling, testing, and motivation to encourage safer sex (Sumartojo, 2000).

The behaviour change model also focused on persuading and supporting individuals for consistent safer sex practices for HIV prevention (UNAIDS, 1999). The model targeted improving knowledge and condom-negotiation skills and encouraged people in high HIV risk communities to follow Pre-Exposure Prophylaxis (PrEP) (Hergenrather, Emmanuel, Durant, & Rhodes, 2016; Nugroho, Erasmus, Zomer, Wu, & Richardus, 2017). The underpinning notion of the behaviour change model was that knowledge of the positive and negative aspects of our behaviour assists people in adopting healthy behaviours to avoid potential risks (Hergenrather et al., 2016). The behaviour change model is often cited as one of the most effective measures to prevent HIV by reducing HIV risk behaviour and encouraging the use of available health services (Coates, Richter, & Caceres, 2008). However, many scholars criticise the model for focusing on individuals while overlooking contextual impacts of an individual's or community's beliefs and practices (Traube, Holloway, & Smith, 2011).

Despite some important achievements, the model did not produce the hoped-for outcomes. Such an approach normally requires multiple years of interventions, with the

associated higher chances of discontinuation due to insufficient funding and the dedication of service providers and consumers (UNAIDS, 2016). Further, the multi-year approach was seen to create and compound gaps in HIV-prevention knowledge among participants. For instance, after a multi-year effort, only 36% of young men and 30% of young women could identify ways to prevent the sexual transmission of HIV (UNAIDS, 2016). Many traditional societies found it challenging to interact with this subject due to the stigma related to HIV and sexual behaviours in society.

Biomedical approach to HIV prevention

The biomedical model of HIV prevention is a direct approach primarily using a medical methodology to halt HIV. This contrasts with the behaviour change approach that encouraged safer sex practices and a structural approach - working at a policy level (Kippax & Stephenson, 2012). The biomedical model emphasises the use of ART to extend the lives of PLHIV and male circumcision and Pre-exposure Prophylaxis (PrEP) as strategies to halt HIV. The approach has been a useful HIV prevention model and has a significant role in controlling HIV transmission. In particular, the development and use of ART to expand the lifespan of PLHIV and considerable success in HIV prevention were among its achievements. Unfortunately, the approach has limitations, including a lack of universal access to available medical facilities, costly treatment and care, and the need for patience on participants to continue their ongoing medication schedules (Cassell, Holtz, Wolfe, Hahn, & Prybylski, 2014).

The biomedical approach to HIV prevention declares HIV to be an infection that can be controlled through medical treatment, but this undermines the epidemic's complex social and behavioural factors. For instance, rectal microbicide treatment was a highly advocated biomedical approach, but it remains unproven and, in any case, is poorly used among MSM. Male circumcision was helpful in reducing HIV transmission in heterosexuals, but it remained less effective among MSM (Beyrer, 2010). Further, PrEP among a high-risk group was found to be less effective than the habit of condom

use for STIs and HIV prevention (Grant et al., 2010; Kippax & Stephension, 2012). PrEP is also expensive to implement, and target population attraction is low due to HIV-related stigma and societal discrimination (Zablotska et al., 2016).

The structural approach to HIV prevention

Structural intervention refers to health promotion and HIV prevention strategies which alter the context within which health outcomes are produced or reproduced (Blankenship, Friedman, Dworkin, & Mantell, 2006). It focuses on underlying determinants of health, including the social, cultural and economic contexts and policies which make an individual or group vulnerable to HIV. These determinants are regarded as crucial, given that 90% of HIV prevalence in developing countries reflects the strong relationship between the social determinants of health and HIV (Gupta, Parkhurst, Ogden, Aggleton, & Mahal, 2008). For instance, social and legal restrictions about same-sex relations and premarital or extramarital sexual relationships in many countries, including Nepal, discourage people from accessing HIV-related information or using condoms. The structural approach focuses on programs to change the contemporary structural barriers to deliver ready access to necessary information and services, including condom use (Gupta et al., 2008). The structural approach is much more challenging to implement because of the need to address deep-rooted socio-economic issues, including poverty, gender inequality, social marginalisation, stigma, and the formation or reformation of laws and policies (Beyrer, 2010).

Combination model for HIV prevention

The combination model for HIV prevention is a comprehensive HIV prevention approach that combines behavioural, biomedical, and structural interventions (Dehne et al., 2016). The gaps in earlier HIV prevention models that targeted particular aspects of the disease gave rise to the combination approach in order to address the complex nature of the HIV epidemic in different regions and societies (Aggleton & Parker, 2015;

Beyrer, 2010). For example, although behavioural intervention successfully reduces HIV risk behaviour, biomedical intervention is equally vital to protect the lives of PLHIV and to prevent HIV transmission among the at-risk population through PrEP. The structural approach is also vital to reducing vulnerability to HIV infection and improving health determinants. The combination methodology draws these disparate methods together to promote a holistic approach to addressing the HIV epidemic (Rotheram-Borus, Swendeman, & Chovnick, 2009).

UNAIDS introduced the combination approach in 2009, integrating behavioural, biomedical, and structural intervention models. Evidence suggested that the combination approach, targeted at individual levels, is more effective in HIV prevention. For example, a study in South Africa indicated that the use of PrEP, together with test and treatment programs, contributed to reducing HIV transmission among sex workers and their clients by 40% over ten years (Bekker, Johnson, Cowan, Overs, Besada, Hillier, & Cates Jr., 2015). However, the combination approach demands close collaboration between administrations and local communities and needs considerable investment. This is a significant barrier to achieving HIV-prevention goals in developing countries like Nepal, which rely on international funding (UNAIDS, 2016).

2.9 The response of Nepal to the HIV epidemic

The prevention of HIV has been one of the serious public health challenges Nepal has faced since the detection of the virus in the 1980s. Prevention, treatment, and care are the three powerful strategies that have been deployed in the fight against the HIV epidemic. The Sustainable Development Goals (SDGs) initiated by UNAIDS identified 17 goals in different sectors, including ending the HIV epidemic by 2030. Nepal, a signatory nation, has been working towards ending the HIV epidemic within its borders by 2030.

The National HIV Strategic Plan

Nepal is currently executing the National HIV Strategic Plan (NHSP) 2016-2021 to end the HIV epidemic by 2030. The NHSP aimed at 90-90-90 in HIV testing, ART enrollment, and viral load suppression by 2020 (NCASC, 2017). The initiative provided a space for the involvement of the critically important population segment – the youth. It emphasises the importance of collaboration to identify gaps and address the needs identified in the new strategic plan. Youth-led social media movements such as "Live2LUV in Nepal" was initiated to contribute to the goal of 90% by increasing knowledge, skills and competencies to protect Nepalese youth from HIV and other STDs. The NHSP has admitted the central role of the community in the national HIV response and highlighted the concept of public-private partnerships, including collaboration between government agencies and civil society and task-sharing between health workers and trained laypersons from the targeted population.

Mechanisms to deal with HIV

The Constitution of Nepal 2015 guaranteed the fundamental rights to health care of every citizen, including the right to acquire health information and equal access to health care. Additionally, the constitution assigned the National Human Rights Commission (NHRC) to respond to complaints of HIV-related discrimination as with other forms of discrimination. The National Centre for AIDS and STD Control (NCASC), the National AIDS Council (NAC), the National AIDS Coordination Committee (NACC), and several regional and district level coordination committees were formed to address HIV issues at different levels in Nepal (NCASC, 2013; UNAIDS, 2018). Nepal has also adopted a comprehensive reproductive healthcare framework, and STDs, including HIV/AIDS, are integrated into the reproductive health services package. Nepal has also included reproductive health, STDs and HIV in its school curriculum to make the coming generation aware of HIV and other STDs.

NCASC, established in 1987, is the leading government agency for preventing and controlling sexually transmitted diseases and HIV/AIDS in Nepal (NCASC, 2013). The first national policy for HIV control, launched in 1995, was the first systematic approach to address the increase in HIV cases after the mid-1990s. The national HIV/AIDS Strategy 2002-2006, implemented in 2001, was the second significant effort to control the growing number of HIV cases in Nepal (NCASC, 2013; UNAIDS, 2018). In 2004, Nepal introduced ART, designed to gradually expand to the regional, zonal, and district hospitals (NCASC, 2013; UNAIDS, 2018). In 2020 there were 78 ART service centres providing aid in Nepal (NCASC, 2020).

Achievements

In comparison to many countries, the HIV prevalence rate in Nepal is under control. However, Nepal needs to redouble its efforts to achieve the goal of NHSC 2016-21 and the UN development goal of ending the HIV epidemic by 2030. The achievements of the last HIV strategic plan 2011-16 were limited. For instance, only about 56% (222, 67) of estimated PLHIV known their HIV status in 2015, and, of those, only about 50% (11,922) were receiving ART. Only about 50% (5,359) of people receiving ART had viral load suppression (NCASC, 2017a). HIV testing, which is regarded as the key to other achievements, was only 43.8% among MSM, 67.8% in MSW, 56% in FSWs, 27.9% in IDUs, and 4.1% among male migrants (NSASC, 2016). However, some progress was seen as an estimated 78% of the PLHIV population know their HIV status, and 81% of these are enrolled in treatment. 86% of these people have been virally suppressed in Nepal in 2020 (UNAIDS, 2021). However, this is significantly below the NHSP's original target of 90-90-90 by 2020.

The low HIV testing rates among Nepalese male migrant workers may have resulted from their absence from the country and the insufficiency of incentives for increasing awareness and encouraging migrant workers to undergo an HIV test. Besides, these services are limited to higher-risk groups such as MSM, MSW, FSW, and IDUs living in

the major cities. As a result, there is a lack of focus and reach, particularly for returning migrants and their families living in remote areas (UNAIDS, 2018; NCASC, 2013). Moreover, PLHIV living in remote rural areas do not have easy access to testing and are unaware of ART or find it challenging to access ART physically and financially.

2.10 Conclusion

This chapter provided a brief introduction to the geographical, political, social, and economic characteristics of Nepal. It discussed the HIV epidemic in the country and provided a brief global and regional context for the study. It further explained the response of the Nepalese Government to address the HIV epidemic at different levels. Later sections focused on the health development status and the health delivery system in the country, the history and trends in labour migration, and the government response to regulate labour migration. Finally, the chapter briefly explored labour migration from Nepal and its relation to HIV. To summarise, this chapter provided a brief overview of the research context and background.

Chapter 3

Health promotion, HIV prevention and Nepalese male migrant workers: A narrative review

3.1 Introduction

Aim of the chapter:

This chapter provides a selective narrative review of health promotion and HIV prevention strategies and the scope of Internet-based health promotion and HIV prevention in the digital age, focusing on strategies to address the challenges faced by Nepalese migrant workers. The review has been sourced from published, peer-reviewed papers and institutional reports, governmental or organisational documents and presented as a narrative review. A narrative review of social science research collects information on a specific topic and synthesises it to provide a coherent interpretation of the major themes and highlight the main issues, trends, complexities and controversies (Jesson, Matheson, & Lacey, 2011). Typically, a narrative review studies the state of knowledge in a specific subject area and offers a comprehensive background for understanding the topic (Efron & Ravid, 2018). The approach is used to critically explore health promotion theories and interventions and investigate previous studies and methods that have deployed them (Efron & Ravid, 2018).

Process:

The literature was collected using keyword searching of a wide range of databases and publications. BioMed, EBSCOhost, ProQuest, Bio Med Central, Google Scholar and similar relevant databases were used to identify sources using the following keywords: “Health promotion”, “HIV prevention”, “Migrant Workers”, “sexual behaviour”, “digital age”, “Internet-based”, “Nepalese male migrant workers”. The key terms were used

separately or in combination using Boolean operators such as “AND”, “OR”, and “NOT”. The literature review focused on publications between 1980 to 2022, since the 1980s saw the beginning of current health promotion trends, the prosumer theoretical perspective, and the global HIV epidemic. One hundred fifty-seven literature sources were selected for the review based on their relation to the research topic. The literature review mainly focuses on peer-reviewed papers; however, books, media articles, conference papers and reports from government and other institutions were also included for their relevance. Among them, 104 were peer-review papers, research related chapters from 25 books, 15 government or NGO reports, and the remaining were conference papers and others. Due to limited research on HIV among Nepalese male migrant workers, only 30 literature souces were found for their focus on HIV in Nepal or Nepalese male migrant workers

The available literature was critically studied to understand the context and trends in health promotion and HIV prevention and their impact on Nepalese male migrant workers. The study yielded the following key themes: 3.2. Health promotion in the past and present centuries; 3.3. Health promotion in Nepal; 3.4 Major challenges for health promotion in the 21st century; 3.5. Health promotion in the digital age; 3.6. Internet, digital technologies and prosumers of health promotion; 3.7. The scope and barrier of the internet and digital technologies used in HIV prevention; 3.8. The scope and barrier of the internet and digital technology-based HIV prevention in Nepal 3.9. Conclusion on the chapter.

3.2 Health promotion in the past and present centuries

The broadly-accepted definition of health promotion is “the process of enabling people to increase control over their health and its determinants through health literacy efforts and multisectoral action to increase healthy behaviours” (WHO, 2018, p.1). Health promotion generally includes activities targeted to the community or people at increased risk of adverse health outcomes. According to WHO, health promotion targets a range of health and health behaviour-related issues such as obesity, diet and physical exercise, mental health, drug and alcohol abuse, tobacco use, sexual health, and HIV prevention (WHO, 2018).

Health promotion is a relatively new term that emerged in the 1980s as a separate entity from public health to emphasise broader community and individual determinants of health (Berridge, 2010; MacDougall, 2007). However, it was in practice an integral part of society and public health for centuries. The preventive, promotive and curative approaches to health can be traced to ancient civilisations, from ancient Greece to western civilisation (Tountas, 2009). As far back as 400 BC, the Greeks acknowledged the influence of the physical and social environment on human health and established this as a field of study (Tountas, 2009). In the South-East Asian region, including Nepal, Ayurveda has been practised to prevent, treat, and cure health issues as a part of Hinduism since Ancient Vedic times dating around 6000 BC (Narayanaswamy, 1981). The following section briefly traces the historical development of public health and health promotion policies and programs.

3.2.1. Historical development of health promotion

Health promotion continues to all under the broader umbrella of public health, defined as “the art and science of preventing diseases, prolonging life and promoting health through the organised efforts of society” (WHO, 1998, p.3). Public health also relates to an individual’s health issues and determinants that vary over time and place (Fielding,

1999). The New Zealand Ministry of Health (MoH) describes public health as improving community health and population health by using proven health promotion and health protection strategies (MoHNZ, 2016)

Current understandings of modern public health arose from increased industrialisation, resulting in increased urban populations, environmental pollution, and a lack of proper waste management/sanitation, contributing to the increase of health-related problems in the 19th century (Mold & Berridge, 2013). One of the early contributors to public health challenges was the lack of adequate sanitation, including clean drinking water and appropriate treatment and disposal of human excreta and sewage (Mold & Berridge, 2013). Towards the end of the 19th century, public health focused on understanding the causes of health problems (including those caused by lack of sanitation) and finding control measures. This led to an emphasis on hygiene as an evolving area of intervention (Mold & Berridge, 2013; Worboys, 2000).

At the beginning of the 20th century, underpinned by various ideologies, those working in public health became interested in social hygiene. Social hygiene included genetic influences on health, and people with mental illness, disabilities, or chronic diseases were regarded as socially unhygienic (Bashford & Levine, 2010). It is important to note that the focus on ideas of social hygiene has not always been positive. The eugenics movement arising, in part, from this focus has been taken to a shocking extreme with instances of targeted actions aimed at the destruction of particular groups of people. The deliberate and systematic mass murder of racial and ethnic groups in Germany during World War II is just one horrific example (Bashford & Levin, 2010).

In the second quarter of the 20th century, the public health emphasis shifted again to social medicine. This initiated studying and addressing underlying determinants of health problems, including housing, education, income, poverty, transport, and health care facilities (Mold & Berridge, 2013; Rothstein, 2003). The underlying notions for health promotion and prevention and controlling of health problems were determined to

be favourable environment and social conditions. Health professionals inspired by social medicine also collaborated with local communities to understand and act on the social determinants of health as a basis for health promotion (Mold & Berridge, 2013). In addition, in the second quarter of the 20th century, public health also focused on the promotion of safe maternal and child health to develop a healthy society (Davies, 1988).

Between 1939 and 1945, World War II brought massive changes to the global economy, social relations and norms, individual life, living standards, family bonds, and related health problems. At this time, family loss, mass migration, hunger, dispossession, and discrimination also negatively impacted people's physical and mental health and well-being (Kesternich, Siflinger, Smith, & Winter, 2014). Following World War II, there was a shift again in public health to focus on the negative health impacts and diseases associated with adverse conditions in society.

In the 1950s, public health focused on massive disease prevention campaigns against tuberculosis (TB), smallpox, polio, and malaria, as these preventable health issues hindered the economic and social development of many countries (UNICEF, 1996). The disease eradication programs corresponded with the breakthroughs made in medical science in the third quarter of the 20th century regarding the prevention and cure of diseases (Whitacre, Agarwal, & Moon, 2021). Billions of dollars were spent researching and developing vaccines and medication for many health problems such as tuberculosis, cancer, heart diseases, flu, polio, malaria, and smallpox. The eradication projects were some of the most complex and costly initiatives in the history of public health (Stepan, 2013; Whitacre et al., 2021). Researchers developed a range of antibiotics, vaccinations, and other new medications and treatments, along with ongoing improvements in sanitation, eradicated some diseases and reduced the severity of others.

3.2.2. Health promotion theories and models after the 1950s

Public health initiatives in the second half of the 20th century turned towards health promotion theories and models under a broader umbrella developed to explain human health outcomes based on individual behaviours, socio-economic and ecological aspects, or both (Baum, 2008).

Consequently, emerging health promotion theories after the 1950s centred on changing health behaviours - a significant determinant of health - through a range of strategies (Rippe, 2013). The Health Belief Model 1966 focused on psychological aspects, such as human attitudes and beliefs, to predict and explain individual health behaviour (Raingruber, 2016). The model posits that health messages targeting perceived barriers, benefits, self-efficacy, and threats are required in order to achieve optimal behaviour change (Jones et al., 2015). It was argued that people were more likely to choose to follow preventive measures when they perceived themselves to be at greater risk by continuing their current behaviour or situation.

Other scholars used Social Cognitive Theory 1989 to explain that if people had adequate information about health issues, they would be encouraged to adopt appropriate self-protective actions (Bandura, 1994). In a critique of these approaches, other researchers argued that information or knowledge alone does not necessarily alter health-impairing habits; they suggested specific self-motivation skills and self-guidance were needed (Bandura, 1989). The social-cognitive approach to health promotion posits observation, imitation, and positive reinforcement, including role modelling, as the crucial strategy in shaping changes in health behaviour (Raingruber, 2014b).

The Transtheoretical Model 1997 was the next health promotion theory, and it was based on the assumption that willingness or intention to adopt healthy behaviour is essential; however, that willingness varies among individuals and over time

(Prochaska, DiClemente, Velicer, & Rossi, 1992; Raingruber, 2016). For instance, there is always variation in the strength of people's perceptions and decisions to start and quit smoking, drinking, and other unhealthy habits. The transtheoretical model emphasised and proposed motivational strategies and programs targeting individual health behaviour change for positive reinforcement.

The Integrated Theory about effecting health behaviour change emphasises promoting knowledge, increasing self-management skills and abilities, and improving social facilities for health promotion (Ryan, 2009). It stresses that health literacy and a supportive environment promote an individual's ability to regulate knowledge and beliefs as the key to health behaviour change. It was argued that supportive environments would help motivate behavioural change in individuals (Laranjo, 2016).

In 1979, Socio-Ecological Theories emerged to explain human health related to the social and ecological determinants of health, comprising family, community, culture, and the physical environment (Raingruber, 2014; Stokols, 1996). Socio-ecological theorists suggested that the surrounding environment, community norms, and values were the determinants of health and healthy behaviour (Michie, West, Campbell, Brown, & Gainforth, 2014; Stokols, 1996). Therefore, it suggests strategies to reassess and address the socio-cultural norms and values that encourage unhealthy practices as a basis for health promotion (Laranjo, 2016). For instance, an intervention based on changing the social attitudes of stigma and discrimination against PLHIV would help PLHIV to live a life free from discrimination. It would also support their economic independence within society (Cornelius, Erekaha, Okundaye, & Sam-Agudu, 2018).

Health promotion theories and models are a significant part of addressing the multiple health issues and related contexts. However, most health promotion theories are criticised for focusing on either socio-ecological determinants or the health behaviour change for health promotion. Some have even been criticised for failing to consider basic health promotion principles (Bauer et al., 2003; Whitehead, 2004). For example,

the socio-ecological theories focused on the contributing contexts for health promotion. Still, they overlooked a critical examination of individual factors like age, education, income, behaviour pattern, emotional well-being and inheritances, which are equally crucial for health promotion (Stokols, 1996). On the other hand, most behavioural change theories and models are criticised for being limited to individual behaviour, overlooking the impact of the environment, socio-cultural and economic factors, and policies and laws on health and healthy behaviour choice (Stokols, 1996).

A methodology which combines more than one theory and model may assist in filling gaps in each and create a more holistic approach. For example, initiatives that include individuals' choices and the social determinants inclusive of family and surrounding factors, national and international practices, policies, and advocacy could be equally influential for individuals making decisions around their sexual practices (Asamoah & Agardh, 2018). Earlier researchers cited individual factors such as age, marital status, knowledge about safer sex practices, and the impact of factors such as the availability of casual sex, access to condoms, and the social stigma surrounding casual sex on individuals' HIV risk sexual behaviour (Khanal & Karkee, 2012; Mukharjee & Mail 2014). Further, most health theories assume that humans make rational, conscious choices (Roden, 2004) and emphasise this individual reasoning over the social determinants of health (Stokols, 1996). Consequently, health promotion and HIV-prevention interventions encompassing individual, social, and ecological determinants may yield more effective results.

3.2.3. Health Promotion after the 1970s

The Alma Ata Declaration of 1978 was a significant turning point in public health, challenging the previous top-down approach to public health and emphasising community participation as an essential strategy for health promotion. In 1986, the Ottawa Charter for Health Promotion introduced health promotion as a distinct stream

within public health. These two events were crucial in the evolution of health promotion in the 21st century and are discussed briefly in this section.

The WHO Declaration of Alma Ata 1978 set a foundation for health promotion. The Alma Ata Declaration recognised the importance of social determinants of health and introduced them to the formulation of global health policy (Rifkin, 2018). Traditionally, human health was linked to people's access to health services and medical intervention. However, after World War II, a public health approach emphasised social determinants such as poverty, hunger and mass displacements as significant challenges to human health and well-being (Rifkin, 2018). The socio-economic impacts of World War II, and the great economic crisis of the 1970s, meant that the necessary funding for the health and education sectors was not available (Easterly, 2003). This increased individual and community responsibilities for the health and well-being of the populace (WB, 1993). Against this backdrop, WHO developed the Alma Ata Declaration, emphasising local community mobilisation, health equity, and fulfilling the social and economic needs for health promotion (WHO, 2002)

The Declaration introduced a framework of Primary Health Care (PHC) as the practical, scientific and socially-acceptable way for universal access to affordable health care through local community participation (Rifkin, 2018; WHO, 1978). There was a greater emphasis on socio-economic development and the active participation of communities in health care and health promotion via health education (Cueto, 2004). The Alma Ata Declaration proposed affordable health care, global peace, safe water, proper nutrition, and family planning as fundamental priorities for health promotion (Raingruber, 2014). Low-income countries, including Nepal, adopted the PHC to increase individual and community' responsibilities and roles in health and well-being to reduce the financial burden of health for the government or state (Berridge, 2010). In this context, PHC played an important role in improving local people's understanding of health and living standards and nutrition levels, and increasing their access to medical services. This

approach significantly reduced mortality rates in developing countries, including Nepal (Mold & Berridge, 2013).

Nepal introduced Primary Health Care (PHC) in the early 1980s to target health promotion and disease control (Karkee & Jha, 2010). The National Health Policy 1991 aimed to extend PHC services to the local level by establishing district public health services and hospitals in 75 districts; Primary Health Centres (PHCs) in 109 electoral constituencies; Health Posts (HP) within five Village Development Committees (VDCs); Sub-Health Posts (SHP) in each VDC; and introduced female community health volunteers (FCHVs) and traditional birth attendants (TBAs) at ward level (MoHP, 1991). Along with health care services, the PHCs are primary sites for preventive and promotive services such as health education, nutrition, safe drinking water, family planning and immunisation against major infectious diseases (Chand & Kharel, 2015; Karkee & Jha, 2010). However, the introduction of these interventions was critiqued for its deployment of traditional top-down approaches and its lack of public involvement and collaboration, which are fundamentally crucial to empowering communities through PHC approaches. This was compounded by the challenges of unstable political systems, lack of decentralisation of specific health services, minimal programs for community empowerment, and Nepal's mountainous topography and sparse settlements (Karkee & Jha, 2010). To ameliorate these challenges, user-friendly internet and digital technology-based health information and services could be decisive in health promotion strategies in Nepal.

Along with its emphasis on using local human resources to provide essential health services, PHC also acknowledged the importance of the role of international agencies in health promotion, prevention, treatment and care of many health issues (Mold & Berridge, 2013). For instance, international agencies such as WHO and UNICEF have contributed to infrastructure development, including technical support and human resource development at the local level. In this regard, PHC for local contexts, but

underpinned by international level collaboration and participation, has helped in providing universally-accessible, readily-available and affordable health facilities at the local level (Mold & Berridge, 2013).

The Alma Ata Declaration was also notable for its ambitious goal of 'Health for All by 2000', advocating a multidimensional health promotion approach (WHO, 1978). However, this has still not been achieved in 2021. Many easily-preventable or curable diseases and infections such as Tuberculosis, Malaria, Measles, HIV, Diarrhoea, Typhoid and others continue to cause millions of deaths every year. (Lozano et al., 2020). The failure to achieve this goal has been attributed to the inadequate response to the underlying determinants of health, particularly poverty, gender inequality, and inequity in the distribution of basic needs and health services, which has prevented people from accessing a minimum level of health services and care (Fran Baum, 2008)(Baum, 2008).

The Ottawa Charter for Health Promotion 1986 was introduced to further support the Alma Ata Declaration 1978, emphasising the individual and social determinants and health inequities for health promotion (WHO, 1986). The Ottawa Charter introduced health promotion as a separate branch of public health that emphasised capacity building to control personal and community health (Kickbusch, 2012). The Charter defined health promotion as "the process of enabling people to increase control over and to improve their health" (WHO, 1986, 1998). It cited food, shelter, education, income, peace of mind, and sustainable political and economic systems as the determinants of health and put forth a range of social and environmental interventions to understand the underlying causes of ill health and control over people's health (Raingruber 2014; WHO, 1986).

The fulfilment of basic needs, supportive environments and economic resources are the bases for a healthy life (Raingruber, 2014). Collaboration among all stakeholders, including local community members and institutions, government and other national

and international agencies working in the area, contribute to developing a healthy environment and producing healthy citizens (Tountas, 2009). Further, combined efforts at multiple levels to address the social determinants of health, community participation, reorientation of the health policy, health services and appropriate channels may assist in reaching larger populations (McQueen, 2008).

WHO formed a Commission in 2005 to explore further the impact of social determinants of health (Fran Baum, 2008; K. Lee et al., 2007). The Commission defined the social determinants of health as the social conditions in which an individual is born, grows, and works (WHO, 2008). Earlier researchers cited the disparities related to the unequal distribution of natural and economic resources and available health services as major social determinants of health (Baum, 2008). Addressing them is the primary requirement for effective health promotion (Naidoo & Will, 2016).

The Commission further emphasised health equity, which WHO defined as a “fair opportunity for everyone to attain their full health potential regardless of demographic, social, economic or geographic strata'' (WHO, 1998, p.7). Health inequity is closely-related to the unequal distribution of resources and health services. The Commission emphasised equal and equitable distribution, access, and use of resources for health promotion (Fran Baum, 2008; Naidoo & Wills, 2016; Tountas, 2009).

3.2.4. Significance of Ottawa Charter for Health Promotion in the 21st century

The Ottawa Charter for Health promotion 1986 was significant in bringing together key concepts such as building healthy public health policy, creating a supportive environment, strengthening community action, developing personal skills, and re-orienting health care services for health promotion (Fry & Zask, 2017; WHO, 1986, 2009). The empirical evidence cited that a combined approach targeting broader health aspects is more likely to deliver effective outcomes (Fry & Zask, 2017; Jackson et al., 2006). There may be significant changes to the contexts, people, lifestyles and health

issues since the charter was introduced in 1986. However, addressing the determinants of health by deploying multi-level and multifaceted strategies has the greatest potential to address the health issues of the 21st century (Fry & Zask, 2017; Rifkin, 2018).

Intersectoral collaboration and inter-organisational partnerships to address multiple social, economic, legal, and other contextual determinants of health were identified in key strategies (Jackson et al., 2006). Moreover, the Ottawa Charter s community participation in planning and decision-making as an integral approach to health promotion and has been cited as an effective strategy for health promotion (Canadian Society for International Health, 2004). Community participation is equally important in HIV prevention, as many earlier researchers cited that youth-developed, youth-delivered interventions are highly effective in HIV prevention (Conn, Nayar, Lubis, Maibvisira, & Modderman, 2017; Lubis, 2018; Warren, 2007).

Health promotion interventions relevant to the local contexts are the basis for their success (Jackson et al., 2006). Considering contextual differences such as social, cultural, economic and political contexts is essential in the design of appropriate health promotion interventions. Active community participation in planning, action and decision-making may ensure the appropriateness of the intervention to the community context (Fry & Zask, 2017; Jackson et al., 2006). The Active Healthy Kids Australia (AHKA) program is an example of a community-owned program contributing to health promotion through collaborating with local schools, canteens, and food and beverage industries (Fry & Zask, 2017). The program assisted families in enhancing their skills and participation in physical activity. Colombia's Citizenship for Health Environment project was another example of a collaboration among multiple sectors and governments that encouraged community participation in capacity building for health promotion at the local level (Hernández-Rincón, Lamus-Lemus, Carratalá-Munuera, & Orozco-Beltrán, 2017).

3.3 Health promotion in Nepal

The South Asia Region, including Nepal, has a health system that evolved with a mixture of cultures, rituals and civilisations (Narayanaswamy, 1981). Ayurveda, Tibetan medicine, and faith healing have been practised in Nepal for centuries, and western allopathic medicines were expanded after the 1950s (Shankar, Paudel, & Giri, 2006; Subedi, 2003). These traditional health care practices are significant and are extensively used as part of Nepalese culture because they are locally available, free of cost, or at least cheaper than modern allopathic medicines. Western allopathic medicine has asserted its dominance throughout the world, including in Nepal. However, traditional health practices are still widely practised in rural Nepal, where about 80% of Nepalese people reside (v Teijlingen et al., 2012).

As one of four Hindu scriptures developed around 5000-6000 BC Ayurveda is one of the ancient medical practices for health promotion, treatment, and care in the Indian subcontinent, including Nepal (Shankar et al., 2006; Subedi, 2003; Narayanaswamy, 1981). Ayurveda prescribes Yoga and locally available, cost-effective herbal solutions to prevent and care of any health problems (Shankar et al., 2006). Ayurvedic health practice is one of Nepal's most-followed health systems. Even today, many people in Nepal still use locally-available herbs for many health problems before visiting doctors. The government of Nepal continues to promote the Ayurvedic health system through Ayurvedic schools, colleges and health centres in many parts of the country.

Tibetan medicine is another traditional health practice that is widespread in Nepal. It describes sickness or health in terms of an individual’s perception (Shankar et al., 2006). Tibetan medicine holds that the physical world, including the human body, is a product of individual perception and that the mind directs the body towards either sickness or health (Shankar et al., 2006). Tibetan medicine is an individualised approach to health and uses multiple methods that mainly prescribe herbs and mineral-

based formulas; advice on diet and lifestyle, mental and spiritual; and social and environmental aspects to adopt (Bauer-Wu et al., 2014).

Faith healing is a widely-used, traditional healing practice in Nepal (Bania, 2014). Many religions have faith healing practices, in which a healer usually prays to Gods or deities rather than using any western allopathic medical methods (Gopichandran, 2015; D. B. Sharma, Gupta, Saxena, Shah, & Singh, 2020)

Western allopathic medical practice is relatively new to Nepal, introduced in the 17th Century by Christian missionaries. Vaccination against smallpox in the 1950s was the first modern medicine-based intervention in Nepal (B. Marasini, 2020). However, some Nepalese people stopped seeking smallpox vaccination because of the conflict with traditional norms and practices, which caused multiple side effects (B. R. Marasini, 2003). Despite this, Western allopathic medicine expanded after the 1950s (Marasini, 2020; Shankar et al., 2006).

3.3.1. Modern western health promotion practices in Nepal

The General Health Plan 1965 introduced a modern health care system and health promotion in Nepal (S. K. Rai, Rai, Hirai, Abe, & Ohno, 2001). The Health Plan initiated a prevention and control of diseases based on the western allopathic system. Nepal had previously established the Family Planning Program and Malaria Eradication program in 1958 (Marasini, 2020). Following the implementation of the General Health Plan in 1965, a Leprosy and Tuberculosis Eradication Program in 1966, and the Smallpox Eradication Program in 1967 were other significant projects introducing modern health systems for health promotion in Nepal (Marasini, 2020; Rai et al., 2001).

The National Health Policy (1991) set the foundation of current health promotion approaches in Nepal (Rai et al., 2001). The first National Health Policy aimed to establish one modern healthcare facility (a primary health centre or health post) in Nepal's 4000 village development committees or municipalities (Marasini, 2020). The

policy further targeted reducing mortality rates by controlling the epidemic of infectious disease. The National Health Education, Information and Communication Centre (NHEICC) was established in 1993 to plan and implement health education and promotion programs in Nepal (Karki, 2018). It focused on making health facilities accessible to the general population and encouraging people to utilise the best health services for productive, happy, and longer lives (Karki, 2018). The policy is the basis for current health promotion in Nepal. However, critics argue that this has promoted a medical approach to the policy rather than enabling people to control their health (S. R. Sharma & Matheson, 2016).

The World Health Organisation (WHO) introduced the Sustainable Development Goals (SGDs) in 2015 as the improved version of its Millennium Development Goals (MDGs), which encompassed universal health coverage (UHC) as one of the objectives in health (Pandey, 2018). The UHC aimed to ensure preventive, promotive, curative, rehabilitative, and palliative care for every citizen regardless of their financial situation at the time of accessing that care (Ranabhat et al., 2019). WHO promoted UHC as a fundamental strategy for reducing health inequity and recommended that every citizen should have access to Social Health Insurance (SHI) as an essential requirement for achieving the goal (Pokharel & Silwal, 2018; WHO, 2015).

Nepal implements WHO programs and policies in its policy and intervention strategies as a signatory nation, including the principles of UHC and SHI. Nepal has deemed SHI as the principal strategy to achieve the goals of a UHC and introduced a health insurance program in 2016 (Pokharel & Silwal, 2018). Poverty is the primary social determinant for poor health globally, depriving people of health services (Ranabhat, Subedi, & Karn, 2020). The program aimed to guarantee access to health services for every Nepalese citizen. However, the premium charge for enrolment and ongoing annual review has impacted enrolment and retention of the poor people in the program (Ranabhat et al., 2020)

3.3.2. Major challenges of health promotion in Nepal

Traditional health promotion perspectives passed down to new generations generally bear hallmarks of a community's ongoing cultural norms, values, and perceptions about health and illness (Shrafritz & Ott, 1992). The perceptions of, and response to, health and illness vary among cultures and societies (Kreuter & McClure, 2004). Cultural factors are complex concepts that influence individual or community beliefs, health behaviours, and the search for preventive and curative services (Wasti et al., 2011). Consequently, health and illness may not be a physical condition alone. They also reflect cultural perceptions, including matters of trust and choosing health services (Subedi, 2003).

Many people in traditional societies, including Nepal, believe in a deity or supernatural power, and they perceive illness as either an invading supernatural power or the result of moral disgrace and disobedience of a god (Bania, 2014). For example, many people still consider leprosy a curse from God, and an infected person may face stigma and discrimination in society (Kaehler, Adhikar, Raut, Marahatta, & Chapman, 2015). An earlier study cited that many Nepalese perceive HIV infection as either a fate or a matter of chance (Pokhrel, Regmi, & Piedade, 2008). They argue that polygamy or multiple sex partners are practised in almost every society and that people who engage in such multiple sexual relations do not necessarily get HIV (Pokhrel et al., 2008). Further, traditional beliefs encourage people to follow traditional rituals rather than adopt modern medicine to prevent, treat, and care of illnesses (Shankar et al., 2006). The socio-cultural perceptions are challenging for health promotion in Nepal, contributing to morbidity and mortality because of a lack of timely and appropriate response to many readily preventable or curable health issues.

The quality of health facilities for health promotion is a serious challenge in developing countries such as Nepal because of insufficient infrastructures, a lack of human resources, and reliance on foreign aid (Bredenkamp et al., 2015; Mishra, Khanal, Karki,

Kallestrup, & Enemark, 2015). Access to high-quality services is a privilege, not a right, for much Nepalese living in economically insecure or remote areas (J. Sharma, Aryal, & Thapa, 2018; Trägård & Shrestha, 2010). Moreover, this is compounded by the lack of an appropriate communication system and the inadequate transparency and accountability of the overall health delivery system. These issues remain significant challenges to health promotion in Nepal (Mishra et al., 2015). Failure to include health promotion approaches that adequately address both individual and social determinants have been argued to be significant obstacles to Nepal's health promotion (Pokharel & Silwal, 2018).

3.4 Major challenges for health promotion in the 21st century

In the 21st century, the establishment and development of complex physical and virtual networks, busy and challenging lifestyles, multi-cultural and lingual societies, and mass population movements are linked to various economic, health, and social challenges (Kickbusch, 2012). Both communicable and non-communicable health issues, such as diabetes, heart disease, cancer, and infectious diseases like HIV and tuberculosis, and linked to lifestyle and social determinants of health, remain significant challenges to health in Nepal (WHO, 2018).

Multi-cultural and multi-lingual societies and individual and mass movements also pose significant challenges in addressing health issues. It is argued that a comprehensive approach targeting psychological, cultural, socio-political, environmental and policy-driven health determinants using appropriate channels would assist in addressing the health promotion challenges in the 21st century (Raingruber, 2016).

Urbanisation, crowded settlements and workplaces; busy lifestyles and poor management of time and stress; lack of physical exercise; and migration are the other challenges to health promotion in the 21st century (Tranter, 2010). Health in the 21st

century is also related to socio-political contexts, primarily shaped by global policies and agreements, including the country's economy, political system, legal provisions, and citizens' beliefs (Kickbusch, 2012). Economic factors such as income, the ability to purchase healthy food, and the quality of education and training are equally important to health promotion (Kickbusch, 2012). For example, poverty, hunger, and related physical and mental health may be a public health challenge in one part of the world. Low physical activity and obesity are emerging as major challenges to health in many other parts of the world (Kickbusch, 2012).

Individual or mass migration is another major challenge for health promotion in the 21st century, impacting individual and community health and public health assessment and service delivery (Kickbursch, 2012). Many infectious health problems, including HIV, are related to people's movement or migration (Bam et al., 2013; Weine & Kashuba, 2012; Yadav, 2018). One current example of the link between people's mobility and the transmission of infectious diseases is the global COVID-19 pandemic (Walker et al., 2020; WHO, 2021; Wilson, 2020). Detected in December 2019 in Wuhan, China, COVID-19 spread to almost every country within months, with more than 521 million infections and more than 6.26 million deaths by mid-May 2022 (WHO, 2021). The public health measures deployed to halt the spread of the pandemic include the closure of borders, isolation of suspected cases and lockdowns of major cities causing billions of people either to remain in their homes or practise physical distancing when outside, and mandating the use of masks and sanitiser, all of which are vital to control the pandemic (WHO, 2021). The pandemic response has taught health professionals, policymakers, and governments that appropriate public health measures, assisted by the use of the internet and digital technology for messaging, are crucial to fighting contagious or infectious diseases and promoting health in the 21st century.

3.5 Health promotion in the digital age

Internet and digital technologies are crucial to health promotion in the 21st century, being significant sources of information, including information for the health and well-being of billions of users (Kristina, Ekasari, & Wati, 2019). These technologies have developed rapidly to provide easy access to news and information and facilitate opportunities to collaborate and influence people worldwide for a common interest. One use of the internet is to influence users' behaviour in the digital environment through co-creating graphics design, specific content, and wording (Schneider, Klumpe, Adam, & Benlian, 2020; Weinmann, Schneider, & Brocke, 2016). In this way, the internet and digital space allow creative individual users and institutions to co-create values and influence others by sharing online. For example, internet and digital technologies are highly effective in the COVID-19 pandemic response in 2020 (Kumar, Kumar, & Shah, 2020). The technologies have provided space for regular and timely live updates from multiple agencies and government authorities. Users sharing them with their community, and collaborations to increase awareness of the pandemic's cause and preventive measures, have been effective public health measures to fight against the pandemic.

Moreover, these technologies also support contact tracing, virtual learning and GP visits, as online booking for tests and results has had a significant role in controlling the spread of the COVID-19 pandemic (Ramsetty & Adams, 2020). However, the digital divide among countries, communities, and people is cited as a major challenge to communication during the pandemic (Ramsetty & Adams, 2020). Despite some challenges, the role of digital technology and online spaces is remarkable in almost every government, community, business and individual aspect of current-day living, including health promotion and HIV prevention. Figure 8, below, shows the two major health promotion approaches, Manipulation and Collaboration, and determinants creating divides among global users accessing online and digital health promotion

interventions. In other words, the diagram reflects the scope and challenges in using the internet and digital technology in health promotion at present.

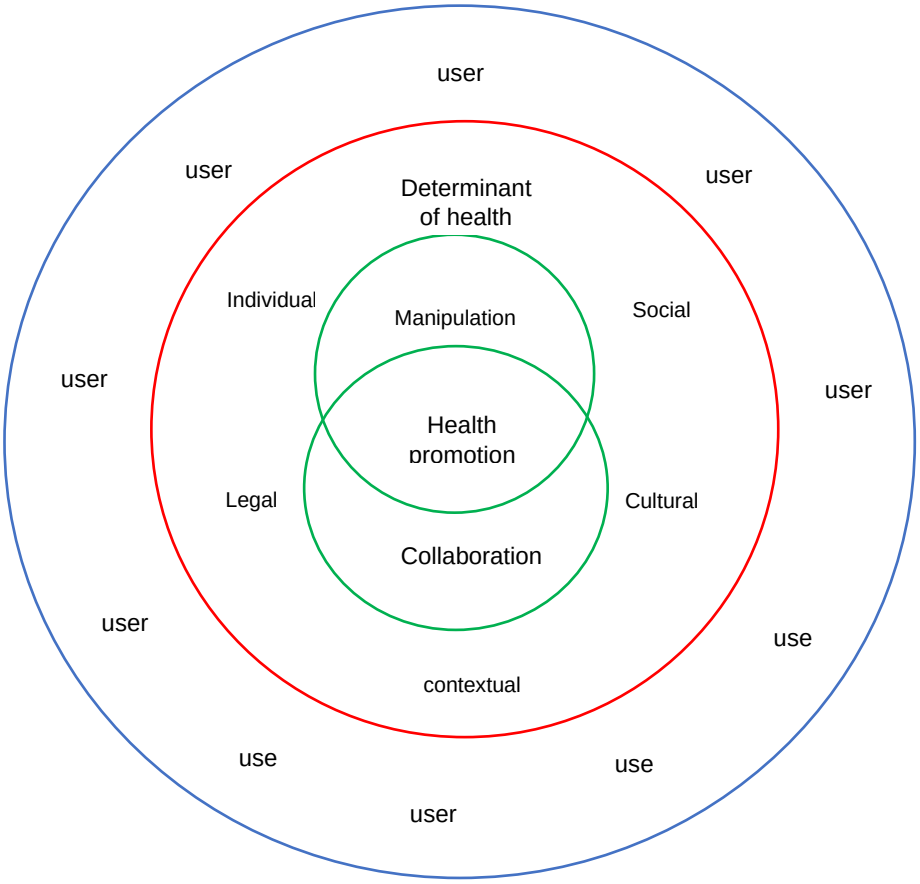

Figure 8. Internet & digital Health Promotion & HIV prevention framework

As shown in Figure 8 above, health promotion interventions, either in the physical or virtual space, are not universally accessible. The multiple layers of obstacles, such as individual, social, cultural, legal and financial barriers, impact an individual client's or user's access to health promotion interventions. However, the online space provides users more freedom to access desired information and intervention and use their selected platform at times that suit them, despite the multiple barriers. Further, it also allows them to share that information online to make it accessible to their community

and people more broadly. Peer interaction also may help in the gradual expansion of the knowledge or information in the community. In this regard, internet or digital technology-based health promotions and HIV prevention interventions benefit many clients or users and the people around them. Thus, it may contribute to virtual and physical space for health promotion and HIV prevention.

3.5.1. Manipulation in digital space for health promotion

Manipulation of people's choices as a strategy for health promotion is a growing approach in the 21st century. The approach was introduced by Richard H. Thaler (1945-) and Cass R. Sunstein (1954-) in their book 'Nudge: Improving decisions about health, wealth and happiness' (2009). The Nudge perspective assumes that the choices that impact people's decision-making related to health and health behaviours can be manipulated so that they make healthy choices (Thaler & Sunstein, 2009). However, Nudge theory does not expect forceful manipulation of choices. Instead, it indirectly influences people to make healthy choices unknowingly. Thaler and Sunstein argue that people tend to make choices unwittingly and are likely to choose the most easily accessible choice or decision (Thaler & Sunstein, 2009). Alteration of the context greatly assists them in making healthy choices. For instance, according to Thaler & Sunstein (2009), health promoters, who want to influence people to improve their nutritional intake, may introduce healthy foods such as salad and vegetables first. Further, they can replace larger plates with smaller ones in the cafeteria to manipulate people to consume healthy food and reduce the volume of their food intake.

Proponents of Nudge theory believe that choices are manipulated daily in physical and digital environments. Consumers are more likely to choose one over another because of its presentation and accessibility (Weinmann et al., 2016). In other words, ''what is chosen often depends upon how the choice is presented'' (Johnson et al., 2012, p. 488). Thaler and Sunstein (2009, p. 6) state, ''choice architecture predictably alters people's behaviour''. In their usage of the term, choice architects refer to those

institutions or individuals working to manipulate choices to bring about behaviour change. However, some scholars believe that manipulation of choices alone might not always be practical for health behaviour change. Providing incentives, feedback, penalties and related contextual strategies may encourage people to adopt healthy behaviours (Dolan et al., 2012; E. J. Johnson et al., 2012; Michie et al., 2014). Speed cameras, no parking and no-smoking zones and fines for breaching the rules are good examples of a Nudge approach to making people conscious of their choices and actions, which may become a habit over time (Dolan et al., 2012; Michie et al., 2013). Other examples of “nudging” people’s behaviours can be found in “look right” signs at street intersections, arrows pointing toward public rubbish bins or stairs, placement of healthy food items in the front of stores, and ID requirements to buy alcohol.

Recurrent and readily-available health awareness health messages have been a strategy in health literacy and health behaviour change. The approach has been deployed in many advertisements promoting healthy foods and health services and health promotion. Health promotion messages and commercials often recruit celebrities to draw audiences and also present them in attractive settings to influence people's behaviour. Research shows that people are more likely to adopt the celebrities, idols, and models' actions and recommendations in their lives (Centola, 2013).

3.5.2. Nudging in the online and digital space

Many choices are available in the digital environment; online interactions or communication platforms, eHealth, and e-commerce (Weinmann et al., 2016). People frequently make important decisions within the choices. The digital technology-based interaction provides opportunities for the collection of information and monitoring of people's perceptions and behaviours in physical and virtual environments in communication. People’s activities in Web 2.0 and social media platforms communicating health messages from specialists, celebrities, researchers, or targeted community members encourage others for healthy behaviours (Laranjo, 2016). Digital

nudging generally uses user-interface design elements encouraging users for health behaviour change. However, it is challenging to determine the outcome of those interventions and information on users' perceptions and thought. Further, many online materials that are not fact-based may be misleading to people. Thus, digital nudging has a significant scope; however, policy-level guidelines and mechanisms to monitor and control may assist in the appropriate use (Oinas-Kukkonen, 2010).

3.5.3. Collaboration and co-creation for health promotion

The notion of the "prosumer" is another theoretical perspective introduced by Alvin Toffler (1928-2016) to understand how collaboration and co-creation of commodities based on shared values influence almost every sector including health promotion. Toffler coined the term "prosumer" in his book The Third Wave (1980) to refer to those people who produce goods and services for their consumption (Kotler, 2010; G. Ritzer, Dean, & Jurgenson, 2012; Toffler, 1980). Toffler posits human beings as prosumers by nature, even though modernisation and industrialisation in earlier centuries theorised society as divided into two separate entities, producers and consumers (Ritzer et al., 2012; Toffler, 1980). According to Toffler (1980), people produced primarily for consumption and traded or bartered any remainder since the agricultural age. However, prosumerism has been evident in almost every sector because it is hard to find goods or services that are pure production or pure consumption. Producers consume at least some of their products, and consumers are also involved in the production process before consuming any products and services (George Ritzer, 2019). In this respect, although the term "prosumer" is primarily related to the economy, it is also used for education, entertainment, and health promotion (Bhalla, 2011; Kotler, 2010).

Collaboration and co-creation are the two important features of the prosumer approach. Producers collaborate with the target community members, providing appropriate spaces and technical assistance that supports consumers to become integral and

responsible co-creator of the service or goods (Bhalla, 2011). This approach can yield practical approaches to address consumers' needs in most sectors, including health promotion. Patients or the target community members consume the available health services and care; however, at the same time, the health promoter and practitioner may collect information on the cause of illness, and patients' experience of the illness, to provide better health care services

Clients' feedback on health services and the health care are crucial for improving current services to meet target communities' current and emerging needs (Bhalla, 2011). In this regard, health promoters, practitioners and clients are both the prosumers and consumers of health care services and health promotion. Collaboration is essential because collective wisdom is a powerful and creative tool in effecting positive change, rather than relying on a single source of knowledge and wisdom (Sarasohn-Kahn, 2008; Surowiecki, 2005). Groups of people living in similar contexts or with health conditions such as PLHIV can yield insight to help each other well beyond what is possible from an individual patient, health promoter, or practitioner (Sarasohn-Kahn, 2008).

In earlier centuries, consumers had more limited channels for collaboration with others or to convey their preferences and need to the producers of services and goods (Alderete, 2017). At that time, individual consumers would be considered merely a part of the greater population. They had a minimal choice about which services or goods to use, regardless of their satisfaction or dissatisfaction. However, the rise of Web 2.0 and social media have provided greater opportunities for communication between local and global consumers and producers (Alderete, 2017; Ritzer et al., 2012). The online space has facilitated producers to improve their market position through customers' feedback and free word-of-mouth endorsements. Consumers also have greater opportunities to be part of the production cycle and receive quality services and goods that meet their expectations and needs (Jönsson & Örnebring, 2011).

Online and digital spaces provide an ideal method of communication for sensitive health issues such as HIV. Face-to-face interaction about HIV and sexual behaviours may be stigmatising in many societies, including Nepal (Wasti et al., 2011). Further, the online space is more appropriate for communicating with the hard-to-reach communities, such as migrant workers living away from home. Migrants are significant users of the internet and digital technologies, given that they spend so much time online to communicate with family and friends. They are also a community that uses Web 2.0 and social media such as Facebook, Twitter, YouTube, and other online platforms for information and entertainment (Anderson, 2009).

Consequently, the internet and digital technologies may provide a platform for Nepalese male migrant workers to share health promotion and HIV prevention information proactively. It is argued that partnering with youth to harness their creative ideas and skills (and their role as prosumers) may contribute significantly to the fight against the HIV epidemic (Conn et al., 2017). In this regard, exploring the scope of the internet and digital technologies to provide a collaborative space to target Nepalese male migrant worker communities may contribute to HIV prevention appropriate to their contexts.

Prosumers are the active agents in the production process, the opposite of the traditional concept of passive consumers (Lehdonvirta, Nagashima, Lehdonvirta, & Baba, 2012). Active engagement and creativity are the two crucial prosumers' qualities which distinguish prosumers from passive consumers (Griffin, Parker, & Neal, 2008). A creative engagement process encourages an individual to be innovative and transition from a consumer to a prosumer (Tapscott & Williams, 2008). Thus, engagement and creativity are essential individual components for prosumption in physical and virtual platforms (Seran & Izvercian, 2014). Appropriate space and the necessary technological, financial and related assistance are further requirements to promote prosumer qualities (Bhalla, 2011). However, the producer or institution that initiates the

space is the primary determinant of their consumers' engagement level. Some provide only a minimal space, whereas others seize the opportunity for business promotion at free or minimal cost (Seran & Izvercian, 2014).

3.5.4. Produce-consumer relations and prosumer process

Consumers generally have four types of engagement opportunities (Potra, 2016). In the first type, producers want consumers to use or customise available tools and goods (Tapscott & Williams, 2008). In the second type of engagement, creative customers have little space and motivation to engage in predesigned activities to collect feedback from selected, loyal customers. Crowdsourcing is one example of the second level of engagement (Bhalla, 2011). The third type of engagement is a more consumer-centric space, in which consumers are able to use their creativity (Potra, 2016; Ritzer, 2012). Do-It-Yourself (DIY) is an instance of this approach that allows customers to use services and tools from multiple resources to meet their unique ideas and personal taste (Bhalla, 2011; Watson & Shove, 2008). However, there is still little space or possibility for collaboration with other consumers (Potra, 2016).

In the final and fourth type of engagement, consumers have the maximum opportunity to collaborate with the producer and/or with other consumers (Potra, Izvercian, & Larisa Ivascu, 2014; Seran & Izvercian, 2014). At this level, the producer provides an accessible and supportive space, motivation for interaction, and the opportunity to collaborate to develop and use prosumers' qualities (Potra et al., 2014). This strategy is extensively used in digital spaces, providing opportunities to collaborate with global users with shared interests and skills and contribute innovative ideas to promote the service or product at a new level (Potra, 2016). Web 2.0 and social media such as Facebook, YouTube, Google, and Wikipedia are examples of deploying the approach to provide maximum engagement opportunities for their users. A long-term relationship, engagement and benefits to both the institutions and the consumers is expected at this level (Seran & Izvercian, 2014).

Four stages embedded in a prosumer process allow consumers to exchange their experiences and expectations and reflect on the products and services they are consuming (Lember, Brandsen, & Tõnurist, 2019). Listening to or sharing experience provides an opportunity for participants to know the contexts and consumer reflections on provided services and goods (Bhalla, 2011; Lember et al., 2019). The interaction may occur in physical or virtual spaces supported by digital technologies. Creative consumers engage in intensive conversation and action in response to the generated idea and co-create innovative insights or actions (Lember et al., 2019). The producer provides space and may provide technical or financial support if and where required, and the creative consumers convert their insights into co-creation (Lember et al., 2019; Bhalla, 2011). Thus, active and creative consumers are the essential assets (Vargo & Lusch, 2004). Appropriate space and assistance to use their competence, creativity, and skills are crucial for co-creating services and products (Chunyan Xie, Richard P Bagozzi, & Sigurd V Troye, 2008). Many researchers cited the internet as a space for learning about the disease and interaction with others in a similar situation as a significant coping strategy used by users (Josefsson, 2005; Laukka, Rantakokko, & Suhonen, 2019). Bhalla (2011) described an archetype: John Decker Jr., a patient with immunodeficiency disease - Wiskott-Aldrich Syndrome (WAS), who used the internet space to collect WAS information, connect and communicate with experts and fellow WAS sufferers and initiated a forum to share the community's experiences, concerns, and counselling to fight against WAS.

3.6 The internet, digital technologies and the prosumers of health promotion

The development of the internet and digital technologies is generally divided into three phases. The first phase, known as Web 1.0, was the World Wide Web (WWW) era, which became publicly accessible in 1994 with the opportunity to use pre-designed online materials. After 2004, the technologies took a new turn, with wireless

connectivity to the internet from almost any location through smartphones, tablets, computers and wearable, sensor-based devices, known as Web 2.0 (Lupton, 2014b). This second phase included the social web for global users to be connected through Web 2.0 and social media platforms such as Facebook, Twitter, and Instagram, allowing content creators and sharing personal data. Indeed, users in Web 2.0 started to get into the prosumer space in an online platform where they could both produce and consume digital content (Ritzer et al., 2012). The digital space is also known as Web 3.0 or the Semantic Web. In this stage of development, users can connect smart objects to exchange data even without internet connection and human intervention (Miorandi, Sicari, De Pellegrini, & Chlamtac, 2012).

Internet and digital technology developments have significant roles and contributions in many sectors. Many users access online and digital platforms to unite and collaborate with other people with similar or common socio-cultural contexts, medical conditions, and occupations (Ritzer, 2012). Many researchers, patients and doctors have already recognised the importance of major social networks such as Twitter, Facebook, and Google+ as the platforms for communication and research on health (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013; Santillana, Zhang, Althouse, & Ayers, 2014). Further, significant growth in health and fitness information and applications supports prosumption in health promotion and encourages other network members (Adibi, 2015). Online networks of people with rare blood groups, physical disabilities, patients with chronic or infectious health problems such as heart disease, cancer, diabetes, and PLHIV are examples of prosumers and choice architects “nudging” each other to manage their health conditions (Bhalla, 2011).

3.6.1. The scope of digital technology use in health promotion

Digital technology use in health, known as eHealth or mHealth, refers to the wide range of technology-based health interventions and medicine (Lupton, 2014a). These technologies have influenced both the general population's health and the performance

of those involved in the health sector. The potential realised through the technologies revolutionised health care and health promotion, providing better outcomes in prevention and health care interventions, including reductions in health promotion and health care expenditure (Boulos, Hetherington, & Wheeler, 2007; Hill, Merchant, & Ungar, 2013). Further, these technologies have provided access to information and communication even to people living in developing countries or in remote areas where health promotion information and interventions are limited. Thus, digital technologies have potentially overcome geographical and socio-economic access barriers (Chib, 2013; Edwards et al., 2014).

Digital spaces are regarded as an appropriate medium for delivering health promotion interventions for multiple reasons. First, online health promotion approaches are relatively cheap to produce and can reach many people from a targeted population quickly and efficiently (Bailey et al., 2013; Bull, 2010; Cullen, Thompson, Boushey, Konzelmann, & Chen, 2013). Another useful feature of online information is that websites can be edited easily to update information and displays (Bull, 2010). Most young people are familiar with the internet and can use it as a convenient and readily-available channel to access information and interaction. The interface that many health-related websites offer for active participation supports the promotion of health consciousness and encourages healthy choices (Bailey et al., 2013; Cullen et al., 2013). A web-based health promotions approach supports autonomy and anonymity and is appropriate for sensitive or stigmatised health issues, such as HIV and sexual health (Arps, 2014, November; Bailey et al., 2013). The internet also provides health promotion workers and researchers with opportunities to conduct randomised surveys and study users' perceptions and behaviours on particular health issues (Bailey et al., 2013; Tait & Christensen, 2010).

The view of health promotion and public health practitioners is that digital technologies have taken health promotion and health care to a new level (Lupton, 2014). Many

digital technologies have explicit features, including text messages, social media and applications which support collaboration or dissemination of health information to make members of the target community aware - “nudge” them to adopt healthy behaviour (Lupton, 2014). The technologies are equally valuable for tracing individuals’ contacts, movements, and behaviours. For example, the internet and digital technologies have greatly contributed to health communications about transmission modes, symptoms, preventive measures, and care, including contact tracing during the COVID-19 pandemic (Budd et al., 2020). The pandemic has clearly demonstrated the significance and potential of the internet and digital technologies in health promotion and in the prevention, tracking and control of health issues (Budd et al., 2020).

Mobile digital devices, applications, websites, and interactive platforms help to connect users and offer readily-available health information online (Lupton, 2015). Further, the health applications in most mobile devices offer opportunities to monitor, measure, and visualise personal activities and share with others. Wearable devices such as digital watches and Fitbit, and portable gadgets such as smartphones, also help to monitor and measure individuals' health-related physical activities and fitness levels (Lupton, 2014). Globally, hundreds of thousands of health and medical applications are available in retail and online stores; however, social media is at the centre of health-related information and news (Lupton, 2014). Many social media users use Facebook, Instagram, Twitter, TikTok, Pinterest and other applications to share health, health care and fitness from their own experiences or other online sources. These social media platforms and Web 2.0 platforms allow a collaborative space, with users engaging in the production and consumption of digital content (Ritzer et al., 2012).

3.6.2. Major determinants for online and digital health promotion

Public health and health promotion sectors have widely used social media and dedicated websites to communicate with target groups. However, many health

promotion interventions have continued to deploy a traditional top-down health education approach or social marketing model to promote behaviour change via the new digital platforms, allowing little space for users' creativity and experiences (Lupton, 2014). These interventions are characterised by a failure to recognise and adopt users' or target communities' perceptions or creative potential. Therefore, it may neither yield the desired outcome nor reflect a specific community's need.

Globally, by January 2021, internet penetration had reached approximately 60% of the global population (J. Johnson, 2021). A significant proportion of the population still does not have access to digital technologies or has not yet acquired the skills to use them (Lupton, 2014). Internet and digital technology access and use is also related to age, income, education level and geographical location. For instance, people with lower economic status living in rural and remote areas are less likely to have access to digital technologies (Hargittai & Hinnant, 2008; Zickuhr, 2013). There are also disparities in access to spaces in digital technologies for women, children, adolescents, and minority groups, with minimal time and resources in place to specifically target them (H. Lee & Pollitzer, 2016). Thus, the use of digital health promotion technologies and platforms may not encompass all people due to the disparities in access and capacities to use them (Fran Baum, Newman, & Biedrzycki, 2012; M. Smith et al., 2014). This creates barriers for the most vulnerable groups who would benefit from digital interventions and increases the disparities in health promotion and the effectiveness of related interventions (Bustreo & Tanner, 2020).

Web 2.0 and social media platforms are primarily collaborative and participatory. However, many of them tend to be commercially-focused and do not offer open access to users (Lupton, 2015). Many scholars believe that a new form of power dynamics has emerged with digital platforms and technology in which the service provider or producers control digital knowledge and the economy. The users' access, interactions, creativity and contributions have now been manipulated for commercial benefit, and

users' choices are shrinking daily (Beer, 2009; Fuchs, 2014). In other words, new digital capitalism has emerged where the intellectual properties and contributions of unpaid prosumers/users through social media and Web 2.0 can be seen and used by others or by the service providers for their own economic benefits (Fuchs, 2014). For instance, according to Sharon (2018), many health institutions and professional and pharmaceutical companies target patients, clients, and internet users to collect public information, experiences, opinions, and ratings. The intellectual property of the free labourers - the internet users - is used by service providers or platform creators (Fuchs, 2014). Many internet users share health links and provide feedback online, assisting the providers and creators to reach a wider audience and gain more capital. Many patients share their experiences online for noble reasons; however, digital platform providers commercialise and exploit it for their financial benefits (Lupton 2014).

Digital technology-based health promotion may not be beneficial all the time. As discussed, it lacks channels to oversee such interventions' impacts on target communities and general users. While physical observations and face-to-face interactions between health professionals and patients or target community members are vital in many cases, the internet and digital platforms can enhance communication for the necessary arrangements (Bustreo & Tanner, 2020). However, despite some limitations and divides, the internet and digital technologies have extended the opportunities for health promotion in the complex and busy society of the 21st century. Further, the internet or digital space is one of the more appropriate spaces to reach out and communicate health information to hard-to-reach communities such as Nepalese male migrant workers, who work in more than 130 countries.

3.7 The scope of the internet and digital technologies in HIV prevention

Internet and digital technologies can play an essential role in delivering HIV-related education and prevention techniques targeting either entire communities or targeted populations who seek health information online (Chiasson, Hirshfield, & Rietmeijer, 2010). Online information may inform the user about recent updates and achievements in HIV prevention, including HIV risk factors, symptoms, counselling and testing services, and treatment and care facilities in the local community (Chiasson et al., 2010). The internet can also facilitate the diagnosis and treatment of HIV and other STIs through websites that provide HIV risk assessments and necessary information about locally-based HIV and STD testing services (Chaisson et al., 2010).

Internet and digital technologies have contributed to health promotion, including HIV prevention and care (Simoni, Kutner, & Horvath, 2015). They have enhanced the ability to reach more-isolated communities, including those whose practices are stigmatised or prohibited in many societies, such as IDUs, sex workers, and people involved in same-sex practices. The technology-based interventions may range from simple text-based reminders (Lester et al., 2010) to complex online counselling services (Kurth et al., 2014) and technology-based biomedical sensors (Dayer, Heldenbrand, Anderson, Gubbins, & Martin, 2013). Behavioural change HIV-prevention models in the digital space generally advocate for condom use and risk-reduction strategies and monitor risk behaviours (Stalgaitis & Glick, 2014). These interventions, primarily developed in a user-friendly environment, reduce potential risk by deploying online HIV-prevention information and interventions.

There are some limitations to online health promotion and HIV prevention. Digital interventions can target voluntary counselling, testing, Antiretroviral Therapy (ART) enrolment and monitoring, PLHIV mental health, and anti-stigma campaigns targeting high-risk and general populations. However, most interventions are targeted at MSM,

which may have low effectiveness for other key populations such as IDUs, Sex Workers (SW), and migrants (Catalani et al., 2013). Youth could also benefit from online interventions specifically targeted to them. However, focusing on only one group can create disparities between at-risk populations (Hightow-Weidman et al., 2012). Many online interventions also lack adequate monitoring of the effectiveness of such interventions on the target population (Lester et al., 2010). Further, the generalisation from one setting to others with limited evidence may yield limited results, or no results, in other communities. Varying access to technology and the internet, disparate individual or community socio-cultural perspectives, and the different levels of eHealth literacy among people living in different regions may impact access to internet-based HIV prevention interventions (Catalani et al., 2013). In this regard, understanding the target populations' technology literacy, access, and experience before launching technology-based interventions may benefit the targeted communities (Muessig et al., 2015).

3.8 The scope and barrier of digital technology-based HIV prevention in Nepal

The scope for internet or digital technology-based HIV prevention is broad in Nepalese society for a range of reasons. For example, reproductive and sexual health services and information delivery are challenging because of the socio-cultural perceptions of sexual practices and HIV (Bam et al., 2013; Khanal & Karkee, 2012; Paudel et al., 2012). Moreover, there are very limited or no sexual health services available at the local level in many parts of the country. Many people are obliged to live without the necessary knowledge and services for their sexual health problems (Regmi, Van Teijlingen, Simkhada, & Acharya, 2010). Online information about reproductive health and HIV may significantly help them understand the health issues they experience.

Unsafe sexual relations, unwanted pregnancy, and STIs, including HIV, are challenges globally. In the case of Nepal, knowledge about reproductive health and HIV was found to be very low. Internet and digital technology-based HIV-prevention interventions targeting youth can extend their knowledge about the prevention of HIV for them and their contacts. Despite the inclusion of sex and HIV education in the Nepalese school curriculum, knowledge was significantly lacking among young Nepalese adults, including male migrant workers (Sharma et al., 2015). This is cited as socio-cultural determinants contributing to poor classroom interactions and a lack of basic resources and materials (Acharya, Thomas, & Cann, 2018). Additionally, poor classroom interaction is also cited due to the lack of necessary training and materials (Acharya et al., 2018). Thus, HIV-prevention interventions targeting youth, using an appropriate channel, such as Internet-based technologies, provide an anonymous and user-friendly space for the provision of more accurate information about safer sexual practices and HIV preventative, curative and rehabilitative services available at the local level or in nearby areas (N. Adhikari, Adhikari, & Sulemane, 2018).

It is clear that there is an urgent need for appropriate channels to reach millions of youths, including Nepalese migrant workers working abroad. The internet and digital technologies can be an area of opportunity (Campbell, Cornish, Gibbs, & Scott, 2010). The internet, especially Web 2.0 and social media platforms, provides them with opportunities to collect and share necessary information appropriate to their contexts to help users adopt safer sex practices and access other services in their local areas (Laranjo, 2016).

3.9. Conclusion

This chapter provided a selective narrative review of health promotion and HIV prevention and the wide scope of Internet-based health promotion and HIV prevention in the digital age. The literature review focused on research regarding Nepalese

migrant workers sourced from published, peer-reviewed papers and institutional reports, governmental or organisational documents, presented as a narrative review. The narrative review approach assisted in the synthesis of the collected information on the research topic to provide a coherent interpretation. This chapter critically reviewed the history of health promotion and HIV theories and interventions, particularly those related to Nepalese male migrant workers. The chapter presented a critical review of the trend of health promotion and HIV prevention interventions, theories, models and studies of health promotion and HIV prevention, and the scope and potential of the internet and digital technology for use in health promotion and HIV prevention targeted to Nepalese male migrant workers.

Chapter Four

Research design: Space for Nepalese male migrant workers to co-create an internet-based HIV prevention intervention

4.1 Introduction

Chapter four discusses the research design deployed in the study to provide a space for Nepalese male migrant workers to co-create internet-based HIV prevention intervention strategies. This chapter begins with a statement of the research questions, followed by a critical analysis of the study's theoretical and methodological choices, a reflection on the ethical approval process, and a consideration of the fieldwork, data collection, and analysis process used in the research.

4.2 Research aims and questions

The research argues that providing a collaborative space for Nepalese male migrant workers to co-create internet-based HIV prevention programs will contribute to extending the current knowledge and practices in HIV prevention among Nepalese male migrant workers and, eventually, in high-risk communities more broadly. Given this overarching objective, the researcher posed the following lead research question:

How can Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention measures?

The researcher also formulated additional questions to explore the lead question in greater depth and to support the research process and objectives:

1. What are Nepalese male migrant workers' experiences of HIV risk contexts and behaviours while living abroad?
2. How do Nepalese male migrant workers perceive current internet and digital technology-based HIV prevention programmes?
3. How can the Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention programmes?

A subjectivist epistemology underpins this research and posits Nepalese male migrant workers' engagement at the centre of the study. Subjectivism assumes that meaning and truths are relative and emerge from the "interaction between the subject and the object to which it is ascribed" (Crotty, 1998, p. 9). Subjectivists believe that meanings emerge in relation to time and context, whereas objectivists' concept is that absolute truth is applicable everywhere (Guba & Lincoln, 1994). Underpinned by its subjectivist approach, this research assumes a variation in contexts, views, and experiences of the HIV epidemic and HIV prevention among different communities and societies - in this instance, Nepalese male migrant workers. Consequently, HIV prevention strategies and means should be appropriate to this community's needs.

An objectivist approach – a dominant approach to academic research– emphasises objectivity, quantification, and generalisability of the research findings (Crotty, 2020). Positivists believe in a single truth and emphasise "reason as a more certain guide to truth than experience" (Macrone, 1994, p. 30). Objective, systematic, and detailed observation in testing hypotheses through experimentation and verification brings about an understanding of the truth (Grant & Giddings, 2002). However, many studies on public health have emphasised that health promotion interventions relate to a complex combination of health determinants (Braveman, Egerter, & Williams, 2011; WHO Commission on Social Determinants of Health, 2008). For example, studies have shown that vulnerability to HIV and HIV risk behaviours are related to the complex nature of sexual practices among societies and members of these societies (Kippax, 2018).

Public health research underpinned by a subjectivist approach has the potential for a deeper understanding of the underlying factors responsible for health issues and collaborative action to improve or alter the context (Conn, Modderman, & Nayar, 2017a; Sahay & Mehendale, 2011). For instance, an earlier study that cited collaboration with vulnerable young males having sex with males (YMSM) in Bali has contributed to understanding their contexts and led to the community's co-creation of appropriate HIV prevention programmes (Conn et al., 2017; Lubis, 2018). Another study with young school children in Zimbabwe explored the gaps in current reproductive and sexual health education in local schools and provided recommendations for an effective, targeted education system (Conn et al., 2017a; Maibvisira, 2019). Thus, this study assumes that collaboration with Nepalese male migrant workers can provide an extensive understanding of their lives in relation to HIV, HIV risk factors, the significance of current HIV prevention initiatives to their contexts, and the potential of the internet and digital technologies to address the issue.

The critical theoretical perspective underpins this study to understand and analyse the HIV risk context behaviours of Nepalese male migrant workers and to develop actions to support them in undertaking positive behaviours and experiences (Crotty, 2020; R. Smith, 1993). As the theoretical perspective under subjective epistemology, a critical research approach explores the underlying causes of community issues (Miller & Brewer, 2003). Thus, critical researchers collaborate with marginalised community members to explore the socio-economic, cultural, and political contexts and develop strategies against resistance to tackling exploitative or unfair circumstances (Comstock, 1992). Section 4.3 below discusses the critical theoretical perspective and its significance in this research.

This research aims to provide a collaborative space for Nepalese male migrant workers to explore the role of the internet and digital technology in their lives and the potential scope of their use in HIV prevention for the community through the co-creation of an

internet-based HIV prevention programme. Therefore, the prosumer concept in the digital and online space underpins the research methodology and data collection and analysis methods. As discussed in Section 3.5, the idea of the prosumer is an emerging concept and perspective readily supported by the internet and digital technologies. Digital technology use in health - also known as eHealth, mHealth, digital health, or online health - is an emerging concept in 21st-century health promotion and HIV prevention. The term “prosumer” integrates two concepts: the consumer and the producer. Alvin Toffler coined the term ‘prosumer’ to refer to individuals or firms that produce goods, services or experiences for personal use or satisfaction (Toffler, 1980). Prosumer is an established concept in economics (Ritzer, Dean, & Jurgenson, 2012); however, it has become influential in other domains, including health (Bhalla, 2011).

Human beings are prosumers by nature, as they produce goods and services for themselves and broader communities on an extended level (Toffler, 1980). However, the nature and level of prosumption have varied across societies and over time. Earlier researchers also cited multiple determinants, including social class (Allen, 2002), gender (Fischer & Arnold, 1990; Thornton, 1996), ethnicity (Mehta & Belk, 1991), family, and other groups (Wallendorf & Arnould, 1991) as influencers of consumers’ decisions and practices. Existing community law and the access a community or individual has to goods and services are also determinants influencing consumption (Chunyan Xie, Richard P. Bagozzi, & Sigurd V. Troye, 2008). For example, access to health services and HIV prevention information and tools are affected by demographic factors such as age, marital status, and legal provisions for migrant workers in these matters. Consequently, the digital prosumer perspective underpinning the methodology and method chosen in this study might contribute to a better understanding of the determinants impacting the consumption of available HIV prevention services and tools and thus lead to the co-creation of HIV prevention intervention methods that are appropriate to them.

The participatory action research (PAR) method completes the framework used in this research. This methodology fits well with the study since it emphasises partnership with target community members and promotes active participation in understanding current contexts and acting for change (Loewenson et al., 2014). PAR researchers walk into the target community, collaborate with them, form a research team to study and understand their situation, and collaborate for change (Fran Baum et al., 2006; Kemmis et al., 2014). PAR is an empowerment-oriented research process that aims to create space for community members to generate self-generated knowledge, gain skills for the currently marginalised or vulnerable, and implement appropriate action toward change (Kemmis et al., 2014; Lowenson et al., 2014). Therefore, PAR in this context aims to enable the Nepalese male migrant workers to contribute their ideas, experience, and skills to co-create internet-based HIV prevention methods for the community. Section 4.4 below provides a further discussion on the significance and use of PAR in this research. Figure 9 below illustrates the theoretical framework that interacts with PAR and the participatory data collection and analysis tools.

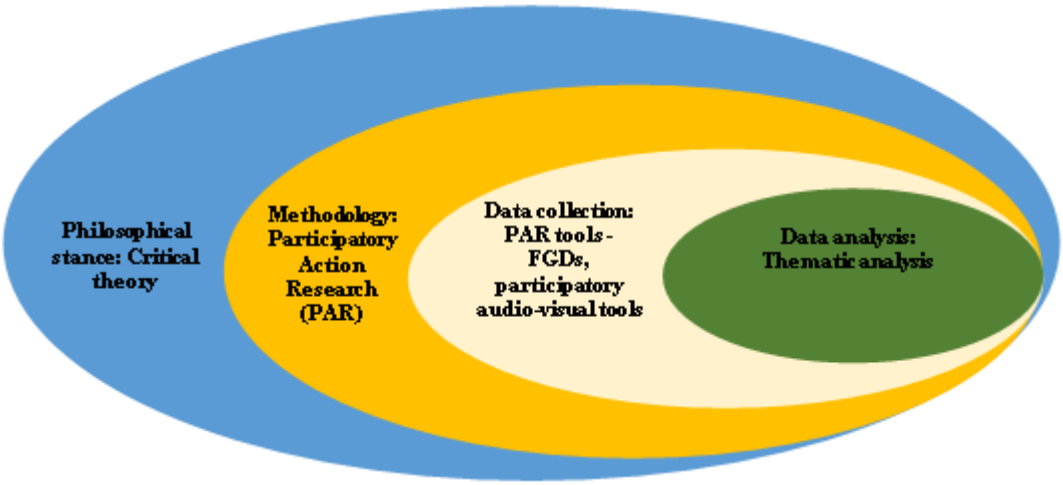

Figure 9. Research onion, illustrating the research position.

Adapted from: Research Onion (Saunders, Lewis, & Thornhill, 2012)

4.3 Critical theoretical framework underpinning the study

Theoretical perspectives should bond with research objectives and shape the choice of research methodologies and methods (Grant & Giddings, 2002). The research aims to understand the underlying reasons for high HIV risk sexual behaviours among Nepalese male migrant workers and to co-create internet-based HIV prevention methods. Thus, the researcher chose a critical theoretical perspective that challenges the current situation and strives for change informed by the findings of the completed research study. Critical theory is historically associated with Horkheimer, Adorno and Marcuse from Frankfurt School (Asghar, 2013). Horkheimer, a co-founder of critical theory, defines it as seeking "human emancipation to liberate human beings from circumstances that enslave them" (Horkheimer, 1982, pg. 244). Smith (1993, p. 77) cited critical theory as a theoretical perspective "designed not just to explain reality but to change it". In contrast to other contemporary theories, critical theory challenges power relations in society, which may be in the form of race, class, gender, economy, and other factors, and strives for a balanced and democratic society (Asghar, 2013). Thus, critical research allows researchers to explore and challenge current social realities and identify the action(s) to change them (Silverman, 2013).

The empowerment of community members to reach a state of emancipation is at the core notion of critical research (Comstock, 1982). Critical research contributes to the empowerment of oppressed community members, providing space for their voices and skills and promoting values such as reciprocity, participation and power-sharing in the research process (Lather, 1991; McCouat & Peile, 1995). Additionally, the oppressed community members collaborate to analyse socio-economic and cultural contexts and develop resistance strategies to tackle exploitative or unfair circumstances (Comstock, 1982). In this regard, critical researchers are concerned with examining underlying knowledge and reasons, finding out distortions in society, and showing the possibility of improvement (Miller & Brewer, 2003).

Critical research begins with an assumption that target community members are in unjust and unequal situations (L. T. Smith, 2021). It seeks to provide or identify a space for those community members to exchange their experiences, knowledge, and skills as the basis for an action that challenges social disparities (Grant & Giddings, 2002; Loewenson et al., 2014). French Sociologist Pierre Bourdieu argued that social norms and tendencies guide people's thinking and behaviours. The self-reflection and the sense-making process help recognise their biases, beliefs, assumptions, and behaviours. Consequently, self-generated critical knowledge and skills become powerful tools to enhance the emancipation and empowerment of research subjects such as, in this study, Nepalese male migrant workers (Navarro, 2006).

Critical theory is an umbrella term, and approaches with a similar practical aim can fall under the umbrella of critical theory (Bohman, 2005). Neo-Marxist, post-modernist, and post-structuralist theories that reject objectivist research to criticise the socio-political and economic systems (creating binaries and exploiting the oppressed) are regarded as variations of critical theory (McLaren, 2000)(McLaren, 2000). Critical theory may use qualitative, quantitative, or mixed methodologies. However, it particularly fits the qualitative research method (Hussain, Elyas, & Nasseef, 2013). Unlike other theories, critical theory has a flexibility that can adapt to any methodology or technique that fosters change (Asghar, 2013).

Action research is one of the best-fit methodologies for critical research (Cohen, Manion, & Morrison, 2002). It is an appropriate tool for achieving the critical research objective of uncovering the unjust and unfair situations and co-creating an action for a change. Section 4.4 below discusses PAR as the methodological framework underpinning this research.

4.4. Participatory action research (PAR) methodology as applied in the study

PAR is an umbrella term encompassing a range of participatory approaches underpinning research that targets social change (Kindon, Pain, & Kesby, 2007). PAR is explained as a methodology for the "systematic collection and analysis of the data to take action and making a change" (Gillis & Jackson, 2002, p. 264). PAR is regarded as a branch of action research initiated in the 1940s by Kurt Lewin (Gillis & Jackson, 2002; Kemmis et al., 2014). Kemmis & McTaggart (1998, p. 5) defines action research as:

> "a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out."

Action research aims to produce self-generated practical knowledge that helps the community improve their day-to-day life (Reason & Bradbury, 2007). PAR is also considered a branch of participatory research. Thus, PAR combines two approaches: participatory and action (Foster et al., 2012). PAR is defined as the methodology that:

> "seeks to understand and improve the world by changing it. At its heart, PAR is a collective, self-reflective inquiry that researchers and participants undertake, so they can understand and improve upon the practices in which they participate and the situations in which they find themselves. The reflective process is directly linked to action, influenced by understanding history, culture, and local context and embedded in social relationships. The process of PAR should be empowering and lead to people having increased control over their lives." (Baum et al., 2006, p. 854)

4.4.1. Historical developments and implications of PAR

PAR approaches were widely used and associated with many social movements of the 20th century, and their use spread as an approach for social reform rather than as a perspective of an individual or a group of researchers (Glassman & Erdem, 2014). PAR is linked with multiple social reforms. Kurt Lewin developed an Action Research (AR)

approach in the late 1940s to contrast and oppose the prejudices and discrimination of religious and ethnic minorities in the aftermath of World War II (Grassman & Erdem, 2014). Paulo Freire and August Boal from Latin America used the Participatory Approach for the social reformation of marginalised people in the 1960s and 1970s (Rahman, 2008). Emancipatory researchers in Germany used PAR to work on the people's collective interest after 1969 - a turbulent year of social and political change (Rahman, 2008). American Sociologist, William Foote Whyte, deployed PAR to study and respond to society's structural and organisational gaps (Rahman, 2008). PAR equally underpinned many community developments and international projects, including Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), and Participatory Learning Action (PLA) - participatory projects in villages developed by Robert Chambers (Chambers, 2008).

The Radical Intellectual Summit in 1977 was the first international conference of PAR researchers and practitioners who defined PAR as a methodology of community-owned inquiry for active community participation through the entire research process (Rahman, 2008). The summit explained PAR as the approach underpinning a higher level of awareness of a community's resources, a more accurate and authentic analysis of its social reality, and a self-reliant development for a radical transformation of that social reality (Hall, 1997; Rahman, 2008).

The PAR approach underpinned various social moments and reforms in the 20th century in the South Asian region, including Nepal (Rahman, 2008). PAR allowed community members to collaborate in understanding their contexts to plan and act for political, economic, and social change. Bhoomi Sena (Land Army), the 1970s political movement in Maharashtra, India, started by oppressed communities calling for equality and rights, is an example of PAR underpinning social reform. Similarly, PAR underpinned the Grameen Bank (Village Bank) concept to foster community collaboration for economic reform in Bangladesh. Collaboration between an external

mediator and local people for agricultural development in Sri Lanka is a further example of a participatory approach underpinning community empowerment and change in South Asia (Ahmed, 2004).

In Nepal, a participatory approach was first employed in forest management in the 1990s (Vaidya & Pradhan, 2008). The concept of 'community forest' shifted the responsibilities of management, care, and sustainable use of forest products to local communities (Vaidya & Pradhan, 2008). In addition, the establishment of local-level co-operatives and the rural bank increased community participation in economic activities and reform in Nepal. Local-level management committees for the management and operation of government schools and health centres are other examples of the participatory approach underpinning multiple sectors in Nepal. Similarly, the "Participatory Bottom-up Planning 2000" approach in agriculture and forest management allowed for collaboration between local people and state authorities in researching, planning, and implementing extensive agricultural and forestry development programs in the country (N. R. Ghimire, 2009; Khadka & Vacik, 2012).

Primary Health Care (PHC) systems are deployed in many countries, including Nepal. PHC emphasises community participation for shared control over the development initiatives and the decisions and resources that affect the community (Vaidya & Pradhan, 2008). Community participation in health encompasses the National Health Policy (1991) and The Second Long Term Health Plan (1997-2017) in Nepal. More than 50,000 Female Community Health Volunteers (FCHVs) and Trained Birth Attendants (TBAs) contributing to health promotion and safe maternity care in rural Nepal are successful examples of community participation in health promotions in the country (Vaidya & Pradhan, 2008).

4.4.2. Principles of PAR

PAR is deemed the appropriate methodology for this research because the study relates to marginalised community voices and a social change agenda (Grant & Giddings, 2002). The researcher chose this methodology because it would allow Nepalese male migrant workers, portrayed as a cause of HIV transmission in Nepal, a space to co-create prevention measures for their community. This research considers that Nepalese male migrant workers are capable collaborators in HIV prevention and that their day-to-day experiences are a relevant source of knowledge in addressing the HIV epidemic (C. Cahill, 2007). The Nepalese male migrant workers' experiences of HIV risk behaviours, HIV prevention practices, and their use of the internet and other digital technologies are essential to provide a deeper understanding of their contexts relevant to the co-creation of internet-based HIV prevention tools.

PAR puts community participation at the centre of the study as it assumes that community members are experts in their health issues (Kesby, Kindon, & Pain, 2007) and can find appropriate solutions that fit with their community's specific contexts (McIntyre, 2008). Thus, PAR ensures an active partnership and participation within the target community, which has made it distinct from most other contemporary methodologies (Aragón & Castillo-Burguete, 2015). Community participation is vital for understanding each situation's underlying factors and developing an effective action to address a community's needs (Loewenson et al., 2014). The community engagement aspect of PAR provides community ownership in the generated information and action in finding a sustainable solution (Cahill, 2007). Besides, co-researchers' reflections on daily experiences contribute significantly to fully understanding their contexts and revealing their perceptions, attitudes, and skills, which are crucial in co-creating appropriate actions. Therefore, the study assumes that the partnership with Nepalese male migrant workers and their participation as creative partners contributes

significantly to understanding HIV risk contexts and the co-creation of appropriate HIV prevention measures for the community.

Power-sharing and empowerment are two critical components underpinning PAR (Frances Baum, 2016). Minority people and disadvantaged communities in many societies lack the power, ability or permission to explore and express their exploitative experiences and voice their needs. Empowerment of participants is a vital PAR principle that uses democratic processes and shifts power to participants (Baum et al., 2006). PAR researchers deliberately work on the empowerment of research participants as co-researchers through providing research-related information, relationship building, and sharing equal power and roles in the research, including the selection of venues, time, methods, tools, and the process and form of action (Baum et al., 2006). Utilising this process, PAR enriches the co-researchers with self-generated subjective knowledge, skills, and actions to alter or improve the context (Kidd & Kral, 2005). Thus, this study assumes that space must be provided for Nepalese male migrant workers to explore and understand the individual, social, cultural, economic, and legal determinants that make them vulnerable to HIV in their home country and destination countries. The research aims to empower them with self-generated knowledge and skills for HIV prevention using the internet and digital technology tools designed for HIV prevention.

The PAR researcher should facilitate the transformation of knowledge and practice, thus increasing the community's consciousness about daily practices and their relation to multiple determinants (Baum et al., 2006). In this research, the transformation of knowledge occurred when the co-researchers gained understanding and then acted on the individual, social, economic, cultural, and legal determinants increasing their risk of contracting HIV. Further, knowledge about the social constructs of sexual behaviours, such as HIV, and HIV prevention practices in their home country and destination countries transformed them and contributed to emancipation and enlightenment (S.

Cahill, O'Shea, & Pierce, 2012). Finally, the journey from ignorance to knowledge helped in transforming their day-to-day practices to reduce HIV risk (Kemmis et al., 2014).

The PAR process is also essential to disseminating the co-researchers' and researchers' experiences and the research findings to the target community or audiences. Most studies disseminate their research findings through academia, professional presentations, and peer-review articles (Chen, Diaz, Lucas, & Rosenthal, 2010). It is essential to disseminate the findings of this study to the target population or those who participated in the study. Unfortunately, this does not happen in all studies (Vaughn et al., 2013). Some researchers disseminate the information only to targeted or specific communities such as service providers (Katon et al., 2010) and policymakers (Isumi et al., 2010). Public health research findings should reach the general population or at the very least reach members of these target communities. In PAR, members of the target community participate as co-researchers who collaborate in data generation and analysis. This participation enriches the co-researchers with subjective knowledge of the research findings to apply in their day-to-day lives and communicate the results to their community. This is crucial to bring change to people's lives in the target community.

4.4.3. Challenges in using the PAR methodology

Community participation has been a key to improving community health for centuries but is especially important since the WHO campaign "Health for All" (Fran Baum et al., 2006). Community participation has been considered a means to empower the community and improve health promotion strategies in practical and sustainable ways (Baum et al., 2006). However, community participation in participatory research can become challenging when participants belong to different social, political, and economic statuses or backgrounds (McTaggart, 1997). The next challenge in PAR is to manage the varying and sometimes competing agenda and diverse cultural values and

to generate trust among co-researchers. Moreover, following a democratic process appropriately helps to address the gaps, maintaining a balance in contradictory arguments (Lowenson et al., 2014).

The possible socio-cultural, educational, and age gaps among co-researchers or between the academic researchers and co-researchers may negatively impact the development of trustful and mutual relationships among co-researchers and may affect their active participation (McTaggart, 1991). PAR uses participatory tools such as informal discussions, diagrams, drawings, dramas, and photographs and generates a collaborative and friendly space for co-researchers to participate in data generation and collective data analysis (Ansell, Robson, Hajdu, & Van Blerk, 2012). The informal social space and PAR tools help build relationships and trust among the participatory team, which are crucial for researching sensitive health issues.

PAR is an appropriate methodology for power-sharing and collaboration between the researcher and the participants (Grant & Giddings, 2002). Most HIV prevention studies and interventions that follow the traditional approaches posit that target communities, such as Nepalese male migrant workers, are positioned as end-users of expert-driven solutions. They mostly overlooked and lacked the typical co-researchers' creative knowledge, experiences, and needs. Community members hold worthy insights from their daily experiences, with which outside researchers or scholars might be unfamiliar (Rodríguez & Brown, 2009). For instance, Nepalese male migrant workers, as members of the community, hold subjective knowledge and experiences about the social, cultural, and legal impacts of HIV risk behaviours. Excluding these workers from research related to their health using a different form of research methodology may violate the principle of democracy and their right to participate in matters that influence their daily lives. PAR, however, utilises methods suited to a participatory, action-oriented group for reflection and the co-creation of an action.

The need for a collective commitment to investigate an issue or problem is a big challenge for a PAR researcher. Sometimes, involving the co-researchers in the research project might be challenging due to time constraints, especially in a student research project with a strict time frame imposed by a university (Gibbon, 2002). Further, there may be a difference in the interests of the researcher and the local community,, and local participants may not be interested in participating or are being sceptical about the benefits of being a participant (Cornwall & Jewkes, 1995). Differences in perspectives, values, and abilities among community members sometimes make it difficult to generate information or obtain a consensus for their participation, and this creates challenges in completing the research within the given timeframe. People in the community might have agendas different from what the researcher has proposed, which may discourage active participation (Cornwall & Jewkes, 1995).

4.4.4. PAR in health promotion

PAR as a methodology has been increasingly used in public health research in the 21st century due to its collaborative and inclusive approach (Baum et al., 2006). PAR is an alternative approach to traditional, normative public health research methods. It explains the problem rather than the action, which involves community voices mobilised for a solution (Baum, 2016). PAR seeks space for community members to investigate, analyse, and act to bring in change that would alleviate their poor health conditions (Vaidya & Pradhan, 2008). Therefore, a participatory approach underpinning primary health may shift the traditional socio-political mindset of experts who usually decide community matters by instead allowing community members to know and decide on things related to them (Palmer et al., 2019). A participatory approach posits community members as learners, designers, and responsible stakeholders for their health and health services rather than passive end-users of available services (Brandsen, Steen, & Verschuere, 2018). Thus, PAR emerges as a strong alternative to

the traditional, objectivist way of health service delivery and research as it emphasises collaboration with community members on any issues related to them (O'Sullivan, Hocking, & Spence, 2014).

The effectiveness of the PAR approach has been highlighted in HIV prevention campaigns such as with sex workers in Thailand (Conn et al., 2017a) and the treatment and action campaign in South Africa (Campbell et al., 2010). PAR has also been shown to be effective in engaging vulnerable older people with dementia to co-create actions to improve their services (Mann & Hung, 2019). Findings from these studies highlight the scope of PAR in health research, health promotion, and HIV prevention.

The top-to-bottom approach primarily used in health promotion may have a complicated impact on the relationship between planning and action, even in simple situations where fewer people are involved in the action (Justice, 1986). It may become even more complicated when the planners never meet the target community members or hear their most urgent needs. Collaboration with the target community, and their participation in planning and action, is regarded as an effective strategy for community ownership, sustainability, and appropriateness of the action. Arnstein (1969) suggests eight levels of citizen participation in community-based participatory projects, ranging from no participation to the citizens' control, where "the majority of citizens (act) in decision-making or (have) full managerial power" (Arnstein, 1969, p. 217).

PAR in health research emphasises community engagement to the maximum level and places community interest at the centre. The researcher supports community participants as facilitators (Ramsden et al., 2013). In this way, the research process increases awareness of health, inequalities, and determinants of poor health previously invisible to them (Elliott, 2013). The PAR process is designed to gradually increase the co-researchers' understanding of health perceptions and behaviour and their relationship with broader surrounding contexts, traditions, and cultures in partnership with the researcher (Kemmis, 2008). Co-researchers engage in critical reflection of

their day-to-day life experiences, which may enlighten them with new self-generated knowledge about poor health conditions and the ways to improve them (Koch & Kralik, 2009). For instance, the new knowledge and action may encourage the co-researchers to change their attitudes and behaviours related to health. Sharing their new learnings may help initiate change in community health and health systems (Cusack, Cohen, Mignone, Chartier, & Lutfiyya, 2018).

The internet and digital technology have been an integral channel for communicating personal and community health matters in the 21st century. The collaboration with the community over the internet and on digital technology-generated space has given birth to the concept of electronic PAR (e-PAR) in the 21st century. Flicker et al. (2008) introduced electronic PAR (e-PAR) to engage youth in health promotion using the internet. The e-PAR model of health promotion is a collaboration in the virtual space leading to the co-creation of art, photos, drama exhibitions, website design, and interactive visual workshops on health issues. Other applications include community members reflecting on community issues, creating songs, music, and presentations, and building a website targeting hard-to-reach communities such as the globally dispersed Nepalese migrant workers (Flicker et al., 2008). e-PAR assisted this research in providing a space for Nepalese male migrant workers to become empowered with self-generated knowledge, skills, and co-creation avenues for internet-based HIV prevention tools.

4.4.5. Employing PAR values in the study

The use of PAR methodology in this study is justifiable for several reasons. First, PAR provided a space for Nepalese male migrant workers to reflect on their problems and then co-create action for a solution (Whyte, Greenwood, & Lazes, 1991). Second, PAR provided them with an opportunity to exchange and validate their knowledge and experiences. Third, PAR provided an opportunity to study their choices to engage in risky HIV-related behaviour, such as unprotected sex with multiple partners, in relation

to individual and other influential factors in their home and destination country, rather than a person's choice or decision, alone. Fourth, PAR introduced an innovative approach in HIV prevention in Nepal, providing a collaborative space for an academic researcher and Nepalese male migrant workers to stand together in a safe and informal space to co-create internet-based HIV prevention initiatives.

4.5. Research design of the study

The research design sections below present the research process that includes pre-fieldwork preparation, activities during the fieldwork, and a reflection on the challenges met while researching HIV using the PAR methodology on a socially stigmatised health issue. This section also explains how PAR principles contributed to creating a safe and self-motivated space for the co-researchers in this study (Cahill, 2007).

4.5.1. Pre-fieldwork preparation

The PAR methodology is a social process with a flexible nature (Baum, 2006). Unlike other methodologies, PAR does not have a rigid, step-by-step process or method; instead, it deploys context-based tools (Loewenson et al., 2014). Hence, it may be challenging for novice researchers to deploy the approach confidently. Understanding theoretical underpinnings were essential to understanding the process of undertaking a PAR approach. During the first year of the program, the research methodology paper and proposal writing allowed the researcher to learn the theoretical and methodological approaches involved in academic studies. Subsequently, before starting the fieldwork, the researcher had an opportunity to join a participatory video workshop. Participation in the workshop enriched the researcher's practical knowledge and techniques, which proved valuable during his fieldwork. Before doing actual fieldwork, the researcher conducted two practice focus group discussions with Nepalese migrant men living in Auckland, New Zealand. These activities were crucial in extending the researcher's

theoretical knowledge and practical skills in applying a participatory approach to co-create an HIV prevention programme.

The following sections briefly explain pre-fieldwork preparation and the lessons learnt from them.

4.5.2. Significance of undertaking a research methodology course

When the researcher enrolled in the doctoral journey, he had limited knowledge of the philosophical aspects of the critical research approach and the PAR methodology. However, the researcher had experience conducting focus group discussions and involving in the co-creation of community action plans on two different projects. Participation in these projects, including the co-creation of community action plans in collaboration with community members, attracted him to the participatory approach. The researcher eventually recognised the importance of gaining deeper theoretical and practical knowledge and confidence in using a PAR approach and soon after enrolled in the course.

The research methodology paper allowed the researcher to extend his knowledge and skills on critical theory and the PAR methodology. The paper provided a space for the researcher to collaborate with fellow students and lecturers to learn more about the PAR methodology and its associated tools. The researcher applied a critical theoretical approach and the PAR methodology to his doctoral research topic for the assignments. By the time the researcher completed the paper, there was significant knowledge of critical theory and PAR methodology and how these would underpin future research. The paper enhanced his confidence in the critical theory, PAR methodology, and data collection and analysis tools to prepare for his doctoral research project.

A deeper understanding of theoretical perspectives and methodology and consultation with supervisors and tutors made the researcher rethink his doctoral research topic,

objectives, and site. For instance, the research needed multiple sessions with participants (co-researchers) for data collection and analysis. On the other hand, it required internet access and multiple and frequent focus groups for data collection and primary data analysis. The availability of a student researcher and the participants in terms of time and the financial aspects of undertaking such a study were crucial considerations in the research. Thus, along with theoretical aspects, the paper helped the researcher consider the topic, fieldwork location, and participants to be involved in the study.

4.5.3. Participatory video workshop in AUT

The researcher had an opportunity to join a participatory video recording workshop before starting the fieldwork. The workshop organised by the AUT Child and Youth Health Research Centre (https://cyhrc.aut.ac.nz) took place on three levels. First, the workshop began with relationship-building in PAR. Then, there was a discussion on the types of videos and the necessary techniques to consider when using participatory tools and co-creating audio-visual messages. Participation in the video-recording workshop and sharing with the team was a fun and practical opportunity to learn practical knowledge about participatory video recording. It was a hands-on way to learn about the various aspects of the participatory approach and provided an avenue to practice participatory videography and related photography and videography tools.

The second day allowed the researcher to extend his knowledge and skills in participatory video co-creation and video editing through a detailed discussion and actual practice using video editing software such as Filmora and iMovie. The participatory team engaged in planning, recording, sharing, reflecting, and editing participatory videos on the third day. The workshop provided the researcher with practical knowledge, before starting the fieldwork, on using PAR principles, tools, and skills in relationship-building and the co-creation of participatory video. The workshop

was helpful to novice student researchers, assisting them in gaining practical, confidence-boosting knowledge and skills valuable during fieldwork.

4.5.4. Pre-fieldwork practice focus group in Auckland

The pre-fieldwork practice was vital in order to gain practical knowledge about fieldwork and potential challenges and weaknesses in using the method. The researcher conducted two Focus Group Discussions (FGDs) with Nepalese male migrants in Auckland. Selecting participants who fit the characteristics of the people the researcher wished to study in the field helped the researcher to apply participatory tools and collect in-depth feedback that explored opinions and attitudes.

Pre-fieldwork practice is helpful when the setting and participants have similar characteristics and backgrounds to the potential co-researchers in the field (Herr & Anderson, 2005). Thus, the researcher chose Nepalese migrants working in Auckland aged between 25 and 40 years old who had migrant work experience in other countries before coming to New Zealand. The participants chosen by the researcher were born in Nepal and grew up in Nepal. So they had a deep understanding of Nepal's geopolitics, culture, norms, laws, and contexts. Consequently, the information, feedback, and comments from the group were highly relevant for the researcher to complete his research and fieldwork.

Co-researchers' words and experiences are at the centre of the PAR methodology (Baum et al., 2006). The co-researchers in this study would be responsible for the information generation, reflection, action, and dissemination of findings regarding the fieldwork. Thus, the practice FGDs was designed to provide a free space to encourage participants to own the moments in selecting tools, discussions, and findings involved in the study.

PAR starts with relationship building among the co-researchers. The Focus Groups (FGs) sessions included an introduction to the study, relation-building through playing

games and engaging in coffee talk. The discussion then moved on to stories and experiences about migrant work, the high HIV risk situation, and related behaviour among Nepalese male migrant workers.

In the beginning, the researcher noted that the participants had some confusion regarding the research objectives, methods, and roles, as the PAR approach was quite different compared to many contemporary research approaches. However, when the researcher shared the research topic, objectives, the PAR methodology and associated methods deployed in this study in detail, the participants began to feel more competent and comfortable. Further, the researcher started with a casual talk with coffee and snacks together on migration trends in Nepal and each other's migrant work countries and some experiences of life over there. The information question used to initiate the discussion was: '*How do you explain migrant work in terms of work type, work hours, accommodation, and other facilities?'* Then the group moved forward and discussed the next topic with the question*, 'What do you think are the factors putting Nepalese male migrant workers at high risk of HIV?'*

The questions generated space to discuss the individual, contextual, and legal factors related to unprotected casual (paid/unpaid) sex and access to HIV prevention information and tools. The discussion led to an understanding of potential contexts and possible discussion points during the actual fieldwork and provided the confidence that friendly and supportive focus group discussions can generate valuable information and yield helpful input from participants. The group shared roles such as note-taking, mind-mapping, and audio-video recordings, which fostered team spirit. The practice FGD was necessary for the novice researcher to obtain practical skills in relationship-building, initiate discussion, and create a safe and trusting space for a detailed discussion about such sensitive health issues, sexual behaviours, and HIV. The FGD concluded by reflecting on the research methods used during the process and the information generated to plan for the next FGD to be conducted the following week.

The second practice FGD focused on internet and digital technology-based HIV prevention. The researcher opened the floor by sharing potential HIV prevention messages and discussed the editorial, creative and technical aspects of production to consider while co-creating audio-visual messages on a sensitive issue such as HIV. Sharing concepts, planning, action, and reflecting on potential methods of HIV prevention were essential prerequisites to the conduct of the fieldwork. This session centred around the questions, '*What are your purposes for using the internet and your smartphone?' 'What is the most effective medium to convey health information and HIV prevention messages for migrant workers?' and 'What would you like to see in HIV prevention messages and programmes for migrant workers?'*

The participants shared their inputs, either supported or countered by others, before reaching a final consensus. The practice FGDs assured the researcher that a safe and friendly space increases active participation and helps to make participants comfortable sharing their personal experiences and stories on sexual behaviour and HIV prevention strategies. At the same time, it enhanced the researcher's confidence regarding using participatory tools, processing the data collected, and coping with potential challenges encountered during the fieldwork.

4.5.5. Pre-fieldwork preparation in Nepal

After completing the university's preparation, including approval for the research proposal and ethics compliance from the AUT Ethics Committee (AUTEC), the researcher flew to Kaski district, Nepal, for fieldwork. to start his fieldwork after receiving. The first task to complete in Nepal was to receive ethical approval from the Nepal Health Research Council (NHRC) to conduct health research in his chosen locality. The researcher applied for ethical approval and started consultation with organisations and scholars working on HIV in Nepal, especially in the Kaski district, Nepal. Obtaining ethical approval is a challenge for many health researchers; it is even more challenging for a novice student researcher to take a participatory approach to

sensitive health issues such as HIV in Nepal. Both AUTEC and the NHRC identified the challenge of protecting the co-researchers' rights and privacy while deploying the PAR approach and focus group method and asked for the strategies the researcher planned to apply to address those concerns. The researcher's response to their concerns showed a sound understanding of PAR principles and processes. Additionally, the researcher had prepared a comprehensive information sheet describing the research study to be provided to the participants and had a rigorous written consent process ensuring the protection of the participants' rights and privacy. Further, a verbal reminder at the beginning and end of each FGD about their rights and privacy and the potential impact if someone's privacy is leaked. Being a community member, the researcher was familiar with Nepalese community ethics and the potential of using them to save each other's rights and privacy. And the researcher was aware of the significance of providing a space for participants to know and understand each other to develop a friendly bond before starting FGDs. These steps helped to gain the trust of both ethical bodies and enabled the researcher to obtain approval to proceed with the study.

The researcher posted an advertisement about the study through social media and local media and used word-of-mouth through returned migrants. There were also consultations with NGOs working on HIV programmes and other scholars in the research area. Among them, the Director of Naulo Ghumti Nepal (NGN), a Pokhara, Kaski-based NGO, was significant in connecting the researcher to potential participants and other organisations working on HIV. NGN generously offered a venue, free counselling, and assistance for HIV testing if any of the participants chose to do so. However, because of the study's sensitivity and its potential impact on the public perception of the participants, the co-researchers decided to conduct the FGDs at other appropriate venues.

The other significant meeting was with a senior lecturer at Pokhara University. In this meeting, the researcher gained helpful knowledge about the lecturer's experiences while undertaking his doctoral study on the experiences of people living with HIV (PLHIV) in Nepal. In addition, the lecturer shared knowledge about potential difficulties in recruiting participants, and the importance of considering co-researchers' rights and privacy while conducting the research.

4.5.6. Advertisement and recruitment in the research

The research deployed a purposive sampling technique to recruit participants who best fit the research criteria and objectives. The inclusion criteria for the participants were: Nepalese male migrant worker from Kaski district, aged between 18 to 38 years, with migrant work experience for more than six months, an internet and smartphone user with basic skills, and able to participate in multiple focus groups. The inclusion criteria were determined using factors relevant to the research. First, the research focused on male migrant workers because about 90% of migrant workers from Nepal are male (CBS, 2012; Sharma et al., 2014). Earlier studies had found that the sexual behaviour of Nepalese male migrant workers in their home and destination countries is one of the major causes of HIV transmission in Nepal (Khanal & Karkee, 2012; Bam et al., 2013; Mukharjee & Mail, 2014). Second, migrant workers aged between 18 to 38 years were chosen because younger adults were more prone to HIV because of their sexual behaviours. They also belong to the subset that frequently uses the internet and smartphones.

Additionally, a greater age gap may impact the co-researchers' desire to participate and discuss HIV and sexual matters within the Nepalese socio-cultural context. Kaski was chosen as the geographical area for participant selection because the national census showed that about 11% of the population from the Kaski district were working abroad as migrant workers. This is significantly higher than the national average of 7% (CBS, 2012; Sharma et al., 2014).

Figure 10 below provides the sample information used in the advertisement of the study.

Figure 10. Research advertisement

Advising the basic criteria, the researcher posted advertisements on social media and local media. There were only a couple of responses; however, they could not meet the criteria for that number of participants. This was very disappointing given that records show about 50% of households in Nepal have a family member working abroad or one who has returned recently (WHO, 2012). However, the low response rate was expected because Nepalese people usually refrain from discussing HIV and sexual matters publicly. It became apparent that finding participants who met the criteria and would be interested in participating in HIV research was a big challenge. The researcher decided to modify the strategy by directly connecting with the local migrant workers' network using word of mouth and a "snowballing" technique. The researcher provided information for participants written in English and Nepali to the research facilitator and potential participants from his contacts and requested them to share it widely through their network.

Seven potential participants contacted the researcher through the migrant workers' network, and the researcher held an informational meeting with them. The meeting concluded by providing attendees with a consent form and a request that they decide within a week whether they wanted to participate or not. Unfortunately, the researcher did not receive a positive response from any potential participants. When the potential participants were contacted individually, most cited personal or family reasons for their inability to commit to managing time for the FGDs. This was similar to the predicament the lecturer at Pokhara University had shared during a consultation session.

The researcher then conducted a one-on-one meeting with each potential participant who came in contact through the facilitator and the migrant workers' network. This technique was successful as it provided the researcher with an opportunity to provide detailed information about the research and immediately satisfy any doubts expressed by potential participants. Upon receiving clarification about the research objectives, methodology, methods, and the intent to protect their rights and privacy, the subjects felt ready to participate. The researcher formed a participatory research team with the seven (7) co-researchers who best matched the research criteria and who agreed to the time and schedule required in the study.

Multiple factors played a role in selecting the small sample size. First, as student researcher, the research proposal and ethical approval were for one Focus Group (FG) with 5-8 participants as co-researchers. This could be reconsidered in the field if more potential participants were available. However, it was hard to recruit participants even for one FG. Second, the financial and time limitation for fieldwork also contributed to selecting a small sample size. Multiple FG with Nepalese migrants who work in different countries and occupations will be an area for future research and programs. Third, the researchers aimed to understand Nepalese male migrant workers' life, their migrant work and HIV risk knowledge and experience and breakthrough of a

collaborative approach in HIV prevention among Nepalese male migrant workers in online and digital technological space.

4.5.7. The research facilitator and the co-researchers

PAR emphasises recruiting research facilitator(s) from the community who can take the role of a co-researcher for personal and social change (Kemmis et al., 2014; Loewenson et al., 2014). The researcher recruited “Cody” as the research facilitator. The researcher knew Cody before coming to New Zealand for his doctoral study. Cody was a helpful social worker with experience in working with multiple local institutions and clubs and conducting youth and local community programs. He was a great speaker and motivator with the ability to handle different situations. The researcher and potential facilitator arranged a meeting where the former shared his research and expectations from a facilitator, resulting in the latter accepting the request. Both planned the advertisement, the recruitment process and FGDs. Before starting each FGs, they met to discuss and plan for the upcoming FGs objectives, the facilitator’s and co-researchers’ roles, and potential opening questions to initiate the discussion. Unforeseen situations meant that Cody could not allow the necessary time for planning and preparation after the third FGD was completed; however, Cody did participate in all FGs. Then, “Blake,” one of the co-researchers, took over Cody’s role as facilitator.

Table 1 below provides some basic information on the co-researchers.

Name (pseudonym)	age	Education qualification	Migrant work Destination	Marital Status	Migrant work experience
Cody	26	University graduate	Social worker & teacher	unmarried	-
Blake	27	12 class	Maldives	Married	Driver
Bruce	23	High school	Malaysia	Unmarried	Cook/waiter

Donald	27	University graduate	Qatar	Married	construction
Seth	28	12 class	Dubai	Married	Sales person
John	36	High school	Qatar and Malaysia	Married	Construction & Factory Worker
Paul	33	12 class	Qatar	Married	Security Guard

Table 1: Basic information of the co-researchers

4.6 Creating space for Nepalese male migrant workers in the research

PAR usually includes academic researchers, a facilitator and local community members collaborating to explore a community issue and take action to change them (Langlois, Goudreau, & Lalonde, 2014). Using the PAR methodology on sensitive issues such as HIV must ensure a safe and supportive space where co-researchers can feel safe and comfortable sharing their experiences, knowledge, and skills (Kemmis et al., 2014). PAR principles such as providing a collaborative space for empowerment, power-sharing, relationship-building, active engagement, and respect for co-researchers' rights and privacy are the important techniques deployed in this study to provide a safe and co-researcher-friendly space. The following Sections 4.6.1 to 4.6.6 briefly discuss the strategies deployed to create a safe and comfortable space in each research stage.

PAR is characterised by a reflexive methodology that is flexible and iterative, unlike many rigid and linear conventional scientific and contextual research styles (Baum, 2016b). PAR proceeds from forming a research team, sharing concerns, planning,

action, and evaluation, as shown in Figure 11 below (Kemmis & McTaggart, 2005). However, the research process may go back and forth rather than in a clear and linear way (Srivastava & Hopwood, 2009). The co-researchers in this study engaged in collecting and analysing the generated information, including sharing knowledge and experience on HIV risk context and behaviour in home and destination countries. They also equally contributed to selecting date, time, venue, and mothods in sharing concepts, planning, practice, and reflection of their co-creation iteratively until they developed HIV prevention messages appropriate to their context.

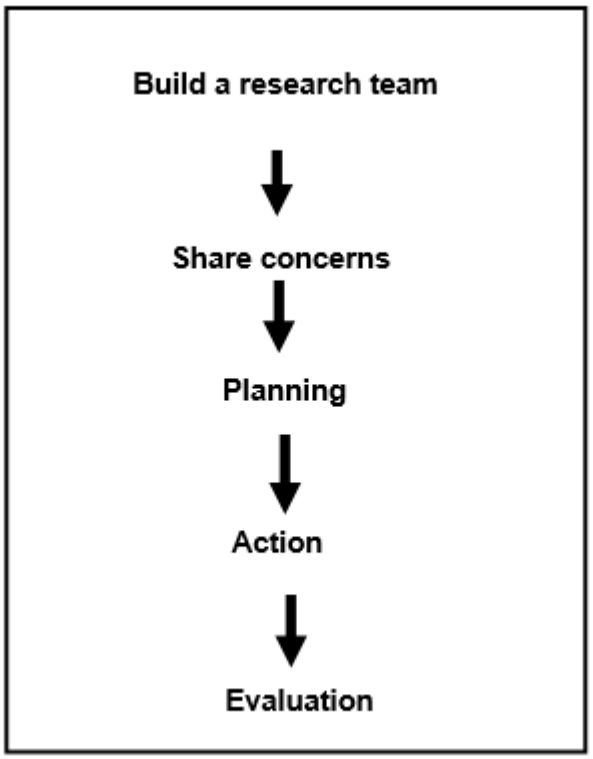

Figure 11. PAR research process

Adopted from Kemmis & McTaggart, 2005

Focus groups (FGs), one of the most used PAR tools, have underpinned this research in data collection and initial data analysis (Olshansky et al., 2005). FG is a social

interaction process or group interview and activities that help generate data (MacDonald, 2012). As a PAR tool, FGs have provided an equal space, opportunities, and support, even providing a space for contradictory or minority voices (MacDonald, 2012). The ideal number of participants in a FG in participatory research settings is 5-8 (Krueger & Casey, 2002). In a bigger group, enough space and care for every co-researcher's voice may not be possible and challenging to make a consensus on opposing ideas. Thus, seven participants were selected for this study as co-researchers, participating in all focus group discussions and other information generation activities, co-creation, and immediate reflection on the generated data. Table two below provides a brief detail of the 9 FGDs sessions, including two information meetings (FGD1 and FGD2)

FGDs	Activities	Date	Participants (pseudonym)
FGD1 (Information meeting 1)	Discussion about the research based on Participant Information Sheet and consent form	21/08/2017	Dur, Ram, Som, Dan, Dil, Pra
FGD2 (Information meeting 2)	Sharing of information based on Participant Information Sheet and consent form	02/09/2017	Cody, Blake, Donald, Seth, John, Bruce, Paul, Sam, Brian
FGD3	Relationship-building featuring games, jokes and participatory workshop	06/09/2017	Cody, Paul, Seth, Donald, Bruce, Blake, Sam
FGD4	Experiences and stories about migrant work, HIV risk contexts and behaviours, and internet and smartphone use	09/09/2017	Cody, Donald, Blake, Bruce, Seth, Paul, John
FGD5	Internet search and sharing on HIV and HIV prevention. Sharing of concepts on co-creation HIV prevention messages	13/09/2017	Cody, Donald, Blake, Bruce, Paul, John Seth
FGD6	Practice and reflection on co-creation with drawings, PowerPoint, audio script	20/09/2017	Cody, Donald, Blake, Bruce, Paul, John Seth
FGD7	Reflection, practice, and reflection about co-creation with drawings, PowerPoint, and audio recordings	26/09/2017	Cody, Donald, Blake, Bruce, Paul, John Seth

FGD8	Final work on PowerPoint, co-creation of video, mixing audio and drawings. Reflection and editing	02/10/2017	Cody, Donald, Blake, Bruce, Paul, John Seth
FGD9	Cocreation of the final version of the PowerPoint and video. Co-researchers' reflections on experiences, achievements from the participation and future expectations for effective HIV prevention	03/10/2017	Donald, Blake, Bruce, Paul, Seth

Table 2. Basic information about the FGDs

4.6.1. Relationship building and research skills

A trustful relationship among co-researchers, plus a transformation of power and sharing of responsibilities, are vital in the PAR approach (Baum, 2016). The information meetings (FGD 1 and 2), focused on comprehensive research and helped satisfy the participants' curiosity and doubts. In the beginning, the potential participants were curious and found the study interesting. However, they were nervous about their role in the research. This was not surprising as most of the conventional studies they had seen or heard were quantitative that mainly required the completion of a questionnaire. Their experience was reflected in one of the conversations in FGD1.

> Dil: Tell us what we must do, and we will answer your question.
>
> Dur: Til will ask us questions or tells us what we should do, and we will do them accordingly.
>
> Ram: Yes, we will answer what you ask from us.

The FGD1 that provided detailed information about the research, objectives, and process was important to clarify any uncertainties and allow the co-researchers to participate actively. The meeting focused on gaining detailed information about the study, the co-researchers' roles, and the co-researchers' expectations. The first FGD (information meeting) concluded by providing attendees with a consent form and a request that they decide within a week whether they wanted to participate or not. They were asked to sign the consent form to indicate their agreement to participate. Each

co-researcher's equal and active participation is vital in the PAR research. However, when the researcher contacted the participants individually after one week, they indicated an inability to participate, citing multiple reasons for their inability to manage time to join in the FGDs.

It is known that real or perceived socio-economic, cultural, and educational gaps among co-researchers and academic researchers may discourage full participation (Kemmis et al., 2014; Lowernson et al., 2014). Thus, the researcher shared his personal story as a member of a family of migrant workers and his experiences of student life abroad, including his struggles with living in Auckland. This helped potential participants feel more comfortable about joining the study. After the FGD2, the researcher organised a couple of short outings for the participants to learn more about each other. The environment in the group changed after several more meetings. The co-researchers developed a mutual and trusting bond as young males from very similar social, cultural, and employment backgrounds. Regular communication became a basis for mutual trust in their relationship. The researchers created a Facebook Messenger Group to initiate ongoing conversations and create an avenue for sharing current news, information, and interesting videos. The co-researchers found it easy to communicate with each other through this channel. The team used the private messaging application to plan and share information about upcoming FGDs, which was crucial for their effective and active participation.

The term “Icebreakers” refers to various activities that help a participatory group become acquainted to begin a conversation, develop trust, and feel more open to one another (Chulp & Collins, 2010). Games and other entertaining and motivating activities are crucial to developing a mutually trusting relationship before entering into a serious or sensitive discussion, such as HIV and sexual behaviours (H. Cahill, Coffey, & Beadle, 2015). Thus, FGD3 included games and jokes as icebreakers to allow the co-researchers to engage in free-flowing conversations. Cody, the research facilitator, organised a game and shared many jokes about migrant workers and their wives

during the FGD3. The co-researchers encouraged each other to share jokes, and each of them shared at least one joke that filled the environment with fun and laughter. Cody then organised a game and divided the participatory team into two groups, asking each team to turn the other way and act out as either a wall, a gun, or a rabbit. The general assumption in the game was that a gun could kill a rabbit, while a rabbit can jump over the wall, and the wall can block a bullet from the gun – a variation of the rock, paper, scissors game, but with more prominent movements. If a team acts out a gun (hunting position with fingers) and the next team acts like a rabbit (creating rabbit ears by putting both hands on each side of their head), the first team gets the score since the gun can kill the rabbit. If a team acts as a wall (stands straight like a wall) and the second team acts as a rabbit, the second team gets a score because a rabbit can jump over a wall. The game was fun and provided some big laughs, which helped avoid nervousness and encouraged the teams to collaborate in decision-making. Additionally, the game also conveyed a message that peers may influence each other's actions and decisions (as in each team's decision to choose whether to be a wall, gun, or rabbit), including the decisions involving sexual behaviours such as engaging in casual sex and condom use.

Figure 12. Cody is demonstrating how the game works in FGD3

Sharing-based participatory video recording was the next activity included in the second half of FGD3. The researcher began this part of the session with a brief discussion of the types of videos based on the subject matter and basic things to consider when recording discussions of a sensitive nature such as HIV and sexual behaviours. Next, the co-researchers shared photographs and videos taken from their phones and identified their frequently-used photo and video editing applications. Then, the co-researchers recorded a video, captured on-the-spot photos using their smartphones, and shared them with the team. Finally, they shared their comments and feedback on what they recorded and created other media, considering the comments made earlier.

The participants developed and agreed on some basic guidelines to encourage each other to participate and to protect each other's rights and privacy. The rules included respecting others' rights and privacy, using appropriate and respectful language and

behaviour, speaking in turns, and putting phones in silent mode unless expecting an important call, and helped to create a respectful and trusting relationship. The sharing of the upcoming FGD topic and objective on the Facebook Messenger group before starting the FGD increased the co-researchers' confidence in their roles and responsibilities during participation in the study. The written consent, and verbal reminders about the importance of privacy at the beginning of each FGD, ensured that the co-researchers remained careful while sharing stories and experiences and taking responsibility for the co-creation of audio-visual and other materials. Power-sharing in generating information and co-creation in audio-visual recordings and note-taking further supported the maintenance of equality and a transparent relationship among co-researchers. Indeed, the icebreaker and PAR principles and tools deployed in the research supported the participants in relationship-building and completing the FGDs with ease.

4.6.2. Reflection on migrant work and internet use experiences and stories

The FGD4 revolved around the co-researchers sharing stories and experiences of HIV, HIV risk contexts and behaviours, and HIV prevention among Nepalese male migrants. The FGD focused on the informational question, *'What is HIV? How does HIV transmit, and how can we prevent it? What factors are responsible for HIV risk behaviours among Nepalese male migrant workers in their home and destination countries?'*

The co-researchers engaged in an extensive discussion and shared information about HIV risk contexts, behaviours, and preventive measures built on their own experiences or stories from peers. They shared their knowledge, experiences, and stories, while other co-researchers supported or provided feedback before drawing the threads together and reaching shared conclusions. As stated above, each FGD was recorded, and each session generated information recorded as a note and a mind map. Even

conflicting and minor disagreements were noted because the research assumes that social determinants of health vary within and among societies and contexts. Figure 13 below shows mind-maps developed about modes of HIV transmission and prevention measures and HIV risk contexts and behaviour in the co-researchers' home and destination countries.

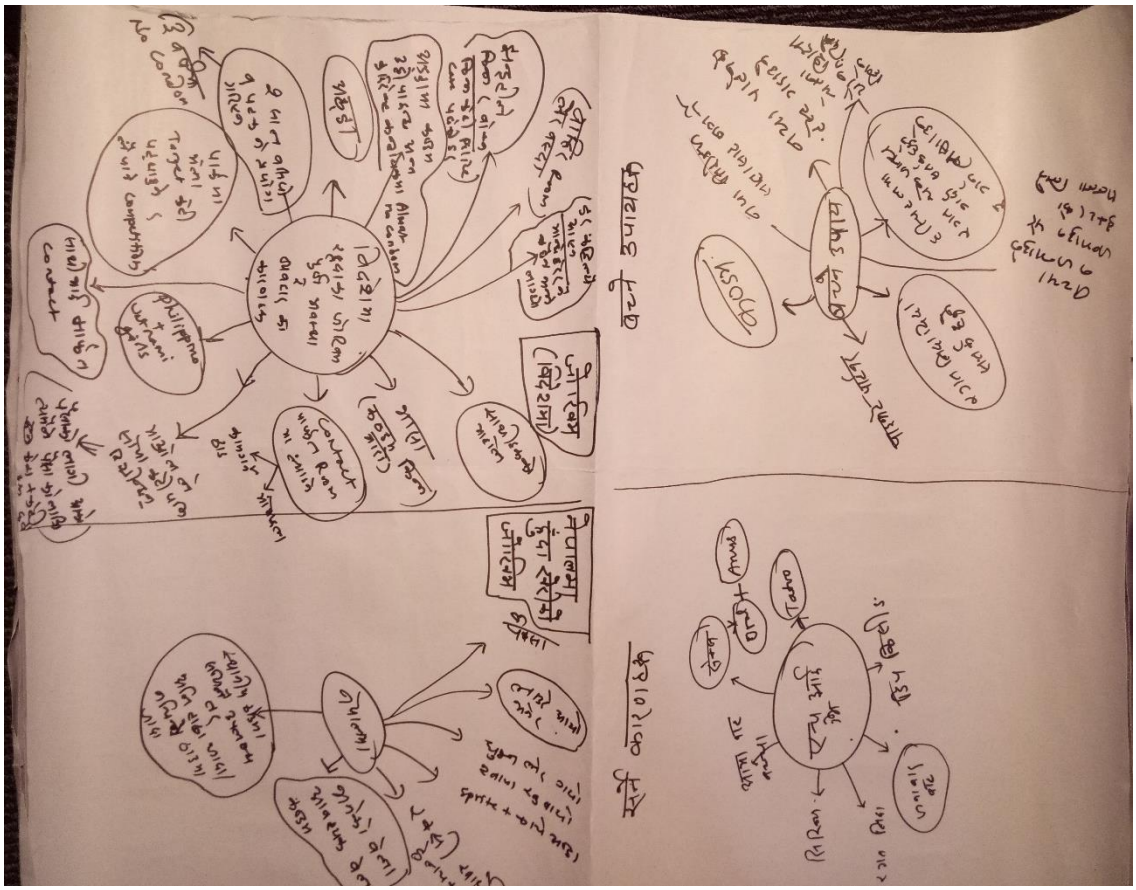

Figure 13. Mind-map- HIV risk contexts and behaviours and prevention measures.

The co-researchers expressed their concerns about multiple HIV risk contexts and the appropriateness of current HIV prevention interventions for Nepalese migrant workers. For instance, multiple individual and contextual factors contribute to HIV risk behaviours among Nepalese migrant workers; however, Nepal's existing HIV prevention intervention measures fail to address them. On the other hand, HIV prevention interventions and messages developed in and for destination countries or targeted at global internet users have minimal benefits because of language, legal, and

contextual barriers. The co-researchers in FGD4 concluded that current HIV prevention interventions are insufficient to address Nepalese migrant workers' issues. They agreed that there is a need for appropriate HIV prevention strategies and interventions targeted explicitly at this group.

4.6.3. Planning

Planning to co-create action to change the current social contexts is the second stage in PAR (Kemmis & McTaggart, 2005). The FGD5 focused on planning and practice in the co-creation of HIV prevention messaging appropriate to Nepalese male migrant workers. The co-researchers started with an internet search on HIV, HIV transmission, and HIV prevention intervention. The internet search helped extend their current knowledge of HIV and potential forms of HIV prevention. Then, co-researchers shared ideas and concepts about the possible forms and media for HIV prevention appropriate to Nepalese male migrant workers. The co-researchers identified designing web pages, developing apps, short drama skits, PowerPoint presentations, animated videos, posters, and pamphlets as potential forms of internet-based HIV prevention tools. However, upon further reflection, they eliminated participatory drama or videos from the list for privacy and safety reasons. Then, they omitted the webpage and application design suggestions due to their lack of skills in co-creating such media. In the end, the co-researchers decided to co-create animated video(s), PowerPoint presentations, and a Facebook page to share an audio-visual message about HIV, HIV risk behaviours, and safer sex practices and to encourage HIV tests for people with previous HIV risk behaviours. This session was essential for reflecting on the co-researchers' knowledge and skills determining appropriate forms of HIV prevention messaging for Nepalese male migrant workers and planning for their co-creation.

4.6.4. Action

The action and reflection on co-creation started during the FGD5. The co-researchers at first planned and practised colouring HIV prevention-related bitmaps available

online. After some reflection, they scrapped the plan to use existing online resources to maintain originality and retain ownership within the group. Then, they practised drawing male and female genitals to illustrate safe and unsafe sex. The drawings showed people having sex with one partner or multiple partners, with or without using a condom, to convey safe and unsafe sexual practices. However, the co-researchers decided conveying this message in the Nepalese social context was culturally inappropriate when they reflected on their earlier decision at the beginning of the FGD6. The participatory team found it difficult to disseminate and take ownership of the material. The co-researchers then decided to sketch male and female images, then mix them with audio recordings to co-create a video and practice editing. Aside from this, co-researchers practised making PowerPoint presentations and created a Facebook page named Health Awareness Nepal (Swasthy Sacheta Nepal).

PAR encourages simple and locally available tools (Lowenson et al., 2014). The co-researchers were provided with chart papers, photocopy papers, pencils, colouring pencils for practice, mind maps, and notes. In addition, the researcher provided a laptop and a smartphone for audio-visual recording, internet search, and for the participants to practice their concepts on co-creation. The co-researchers used their smartphones, while desktop computers were available at the venue for internet search. The action and reflection cycle of practice and reflection continued until developing the final versions of the co-created messages in the FGD9.

Internet and smartphone use fundamentally helped enhance the co-researchers' knowledge and skills in this research. Facebook Messenger became a means of actively communicating with each other and led to the successful planning of succeeding FGDs, including dates, times, and agendas. The co-researchers used digital technologies and spaces such as the internet, smartphones, and laptops extensively. As Flicker et al. (2008) reported, the most convenient and powerful tools to enhance communication, collaboration, and co-creation. All the fieldwork activities were

completed in a pleasant and collaborative setting. Each co-researcher contributed to co-creation based on their knowledge and skills, and the team made final decisions about their creations. For example, Cody and Seth focused on drawings while Blake and Bruce coloured them. The team finalised the script of the audio message, and then Donald typed it. Cody and Seth contributed their voices for the audio recording, and John recorded it using his smartphone. Donald designed a PowerPoint presentation, and Paul helped him complete this part of the work. The participatory team collaborated and discussed every piece of information generated, sharing concepts, practice, designing and co-creation of message or action. The decision was made using the democratic process with extensive team discussions ending in a consensus.

4.6.5. Evaluation

Evaluation is an integral part of PAR research. The co-researchers' reflections on their process, achievements, and experiences provide a deeper understanding of the benefits and barriers while participating in PAR to the primary researcher, audiences, and future researchers. In this research process, each FGD included an evaluation session of the co-researchers' experiences and feedback on the processes, achievements, and difficulties of participating in the FGD. The evaluation session guided the primary researcher in effectively planning the upcoming FGDs. An evaluation session was also included at the end of the fieldwork. The co-researchers reflected on what they co-created by interviewing each other about their experiences, achievements, and barriers while participating in the research. They also provided feedback for future researchers and HIV prevention interventions targeting Nepalese male migrant workers. The co-researchers used the following questions to interrogate their reflections and provide feedback:

- How did you find this research?
- What are the benefits or obstacles that you experienced while participating in this study?

- Do you think if this research will contribute to HIV prevention among Nepalese male migrant workers? How?
- How will the co-creations help extend Nepalese male migrant workers' knowledge about HIV and the adoption of safe sex practices?
- How would you prefer to share the co-creations with Nepalese migrant workers abroad?
- How would you describe this participation in terms of satisfaction and achievements?
- Will you be interested in participating in such a study in the future?

The research placed the co-researchers and their voices at the centre, which is vital in the PAR methodology to improve the research processes and outcomes. The co-researchers were provided with a space to evaluate and feedback on the research process, objectives, and achievements. The co-researchers, in return, voiced their feelings, personal concerns, and individual health conditions. On several occasions, the FGDs needed to be postponed when some co-researchers fell ill from seasonal viral flu infections. In short, the co-researchers appreciated both the flexibility offered and the participant-centred PAR methods deployed in the research. They became very optimistic about the research findings and their contribution to HIV prevention among Nepalese male migrant workers.

4.6.6. Dissemination

Dissemination of the research process and the research findings are a crucial part of the research. The co-researchers belonged to the demographic of returned male migrant workers who had come home for a short holiday. However, time constraints and the limitations of being transient, with only a month or two to spend with family and friends, meant that the co-researchers were not available to participate in disseminating information related to the study. Additionally, the possible negative

impacts of participating in HIV research in Nepal may have discouraged participation in disseminating the findings either to the community or to other outside groups. Consequently, the primary researcher returned to the university and disseminated the research fieldwork experiences and findings to his supervisors and fellow researchers. The completed research findings will also be disseminated in his PhD thesis, academic journal publications, and conference presentations. Finally, the co-researchers have provided verbal consent to disseminate the co-creations and research findings through the Facebook page, YouTube, and other appropriate channels, which the researcher will do after completing his doctoral study. Further, the co-researchers decided to disseminate their new learning to their co-workers or peers in different ways and occasions. The participatory group believed to disseminate the research findings and contribute to HIV prevention in a geometric series of 1, 2, 4, 8, 16… rather than a massive change at a time.

4.7 Research ethics

Ethically appropriate research procedures and ethical approval from related institutions are crucial in any health research. The Auckland University of Technology Ethics Committee (AUTEC) and Nepal Health Research Council (NHRC) considered and approved this research. After the university approved the research proposal, the researcher applied for ethical approval from AUTEC, received on 10th July 2017, with reference number 17/212 (see Appendix C). Then, the researcher applied for ethical approval from the NHRC, which was achieved on 13th September 2017 with registration number 299/2017 (see Appendix D). The ethical process and approval from AUTEC and NHRC were the bases for the ethical fitness and rigour of the research process and findings.

HIV is a sensitive and stigmatised issue in most South Asian countries, including Nepal. As the primary researcher was brought up in this community, there was an

awareness of protecting the co-researchers' rights and privacy to avoid any potential risks. The researcher consulted with stakeholders working in the field before starting his fieldwork. Before their participation, the potential co-researchers were informed about the research objectives, research process, benefits, and possible risks. The researcher created a Participant Information Sheet approved by AUTEC and NHRC (see Appendix A), including the research objectives, methodology, methods, participants' roles, potential benefits, and risks provided to all potential researchers. The researcher also discussed the study in detail in his information-gathering meetings. After explaining their rights and responsibilities, each co-researcher voluntarily provided written consent before starting the first FGD (See Appendix B). The co-researchers' privacy is crucial in PAR, and this fact has been emphasised before starting each FGD to serve as a friendly reminder.

As a community member, the primary researcher was aware and knowledgeable about the co-researchers' social, cultural, legal, and linguistic backgrounds, which helped him complete the research while employing an ethically-appropriate process from start to finish. The section below provides details on the techniques adopted to employ an ethically appropriate process in the research.

4.7.1. Consultation to ensure ethically appropriate process

It is vital to be prepared for unexpected situations when conducting research. Consultation with people from the field helped extend knowledge and awareness of potential challenges during this study. Specifically, consultations with local organisations and scholars working on a range of HIV issues were instrumental in ensuring the use of ethically appropriate methods and protecting participants' privacy. Initially, the researcher consulted the director of Naulo Ghumti Nepal (NGN), a leading NGO working on the HIV prevention sector in Kaski. The meeting provided an opportunity to explore the current HIV situation in Kaski and the local community's understanding of HIV and PLHIV. NGN generously offered free consultations and

support for HIV testing on request for any of the co-researchers. NGN also offered a venue for FGDs. However, the co-researchers chose a different location to avoid possible stigma regarding their participation in the study.

An important consultation was conducted with a senior lecturer from Pokhara University. The meeting allowed the researcher to learn from the lecturer's fieldwork experience in the Kaski district and informed awareness of the challenges involved in convincing people to participate in HIV research, especially when it demands long hours and multiple sessions. Finally, the lecturer emphasised the importance of maintaining the co-researchers' privacy.

The third meeting was with the Chief Consultant in the Sukraraj Tropical and Infectious Disease Hospital, Kathmandu, Nepal, who is involved in the diagnosis, treatment, and care of PLHIV, and engaging with researchers on HIV in Nepal. This consultation was fundamental to the researcher in understanding the current contexts and intervention programmes on HIV, from the national to the local level. This enabled the researcher to facilitate ethically appropriate methods in the study.

4.7.2. Protection of co-researchers' rights and privacy

Sexual behaviours are intensely private matters in many societies, including Nepal. Nepalese society and culture do not permit an open discussion on sexual matters. Further, the country's laws prohibit extramarital sexual relations, and thus, HIV/AIDS remains a stigmatised topic because of its association with unprotected sex with multiple partners. Thus, securing co-researchers to participate in HIV research and discussions on sexual behaviours posed a considerable challenge for the researcher.

In PAR, there is a real risk of disclosing the co-researchers' personal information and experiences. Co-researchers involved in sensitive and stigmatised issues such as HIV must be responsible for mitigating potential risks and avoiding breaches of privacy. The primary researcher was responsible for completing the study while avoiding potential

risks to co-researchers. The researcher's focus on assuring safety and privacy for the co-researchers began with providing detailed information about the research. The FGD1 and FGD2 with potential participants provided details about possible risks and their joint and individual responsibility to protect fellow participants' rights and privacy. The co-researchers were informed about the importance of keeping each other's personal information private before starting each FGD. Further, the co-researchers were asked to provide written consent to respect others' rights and maintain confidentiality by not sharing the content of group discussions with anyone outside the research team.

4.7.3. Protecting co-researchers' privacy post-fieldwork

PAR provides a space for co-researchers to be empowered with new knowledge and action to change a current situation (Baum et al., 2016). This study seeks an opportunity to empower Nepalese male migrant workers in co-creating internet-based HIV prevention messages. While doing so, the researcher is committed to mitigating any risk to co-researchers that they face social stigma and discrimination for their participation in HIV research. The post fieldwork process maintained privacy by removing co-researchers' details or identifiers to ensure anonymity in the research findings, subsequent publications, conference presentations, and thesis. To that end, each co-researcher was assigned a unique pseudonym. Further, confidentiality was maintained by limiting access to fieldwork notes and the associated data generated, fieldwork audio and visual records, consent forms, and transcripts to the researcher and his doctoral thesis supervisors in order to assure participants that the researcher was committed to maintaining an ethical, appropriate process from the earliest meetings to the completion of the study. The PAR principle, the ethical approval process with AUTEC and NHRC, consultations with subject matter experts, the creation of relevant information documents such as the Participant Information Sheet and the written consent from co-researchers, and the research team's commitments

supported the researcher to complete the study smoothly, avoiding, as far as possible, any potential risks to any co-researchers.

4.8 Data analysis

A partnership with co-researchers and sharing power in data collection and analysis between the primary researcher and co-researchers are the important features of PAR (Cahill, 2010). The collection and analysis of data in PAR proceed iteratively and reflexively - co-researchers go back and forth to generate and analyse the data as they build their relationships to connect them more strongly in developing a vision, focus, and understanding (Srivastava & Hopwood, 2009). Generally, data analysis in the PAR methodology occurs in two stages: immediate analysis and feedback after each FGD and a final analysis at the end of the data collection process. At the end of each FGD, co-researchers analysed and reflected upon the generated information following reflective analysis. The co-researchers provided their reflections on the overall fieldwork experience and findings during the final FGD.

The basic principle of PAR is the collaboration of co-researchers for data collection and analysis (C. Cahill, 2010). Unfortunately, the co-researchers had limited time and could only participate in the initial data analysis during the data collection in the field. So the primary researcher returned to Auckland to transcribe, translate, and analyse the data using the thematic data analysis method. PAR literature emphasises two stages in data analysis. In the first stage, the primary researcher initiates the data analysis, codes the data, and critically reflects on those codes with the co-researchers (Blas et al., 2010; Frisby, Reid, Millar, & Hoeber, 2005). In the second stage, the primary researcher critically analyses codes in relation to the key points from the data and undertakes a further analysis of the research findings (Nicholson, 2013).

4.8.1. The first stage of data analysis

The first data analysis stage in a PAR study occurs concurrently with the data collection (Frisby et al., 2005). The co-researchers collaborated to generate data and reflect on the generated information and process, deploying PAR's principle of collaboration and power-sharing (Cahill, 2010; Lowenson et al., 2014). In the initial data analysis, the co-researchers reflected critically on the generated information and the method employed at the end of each FGD. The co-researchers also reflected on the overall data collection process, methods, and findings at the end of the fieldwork.

To ensure the voice of the co-researchers remains prominent in the data analysis, the primary researcher offered to do data analysis collaboratively with the co-researchers from FGD3. Each FGD began with reviewing previous FGD and concluded with a reflection on the generated information and methods used in the FGD and planning for the next. However, due to time constraints, none of the co-researchers was available to help with the second stage data analysis in detail. Consequently, the researcher listened to and analysed the audio recordings and studied notes and mind maps from the first two FGDs. The key points were identified by the researcher and presented to the co-researchers for their consideration and reflection in order to be able to confirm the representation of their voices in the analysis.

4.8.2. The second stage of data analysis

In the second stage, the primary researcher critically reflects and analyses the data and findings using appropriate data analysis methods suitable to the research objectives (Nicholson, 2013). It took place in Auckland after the researcher returned from his fieldwork. The second data analysis stage was important for studying the research process and findings on a deeper level to prepare for the doctoral thesis, academic publication, and presentation. Transcription and translation was the first stage of the data analysis. At first, the researcher tried to use software, such as Google Translate, to translate and transcribe the data. However, it was unsuitable for a group

discussion recorded in Nepali, so the researcher manually transcribed and translated all data.

The researcher studied Braun and Clarke's 'Using Thematic Analysis in Psychology (2006)' and 'Successful Qualitative Research: a practical guide for beginners (2013)'. The literature provided insight into thematic data analysis. Braun and Clarke stated six stages in thematic data analysis that begin with familiarisation with the data, initial coding, searching, reviewing, defining the themes and naming themes and producing a report (Braun & Clarke, 2006, 2013). First, the researcher familiarised himself with the data, reading them multiple times to understand the underlying information or meaning based on the contexts that emerged from them. The researcher also paid attention to each co-researcher's words and their relation to the overall data; coded all the transcribed data in the second stage, including images and notes from the field; created a table and arranged similar codes under one column; and extracted data to support them (Braun & Clarke, 2006). Next, the researcher read each code carefully for its relationship with other codes in terms of meaning and its relationship with the research question and objectives and arranged them in a table. Finally, several mind mappings were made to synthesise each under specific themes to produce the thesis chapters.

The data analysis began with listening to the audio recordings, studying collected notes and mind maps, watching videos recorded, and examining the co-created messages. All data were recorded in Nepali, transcribed in Nepali, and then translated into English. The audio and visual data transcription was important to study, connect, and code. The transcription and translation in English were essential to developing a PhD thesis that was understandable by a global audience. The researcher did the transcription and translation by himself since he was integrally involved in the data collection and familiar with each dialogue's developing situation and contexts that a secondary transcriber and translator may have otherwise missed. Upon completing the

transcripts and translations, the researcher became even more familiar with the data and the generated contextual meanings.

The primary researcher attended an NVivo 12 workshop at the university and trialled it for data management and analysis. However, being new to the software, the researcher found it difficult to code and analyse the big data generated from the group discussion in the field. After considering fellow researchers' experience of using the software, the researcher then decided to code and analyse data manually this time. Before starting the data analysis, the researcher read and transcribed the content to familiarise himself with the collected data and their associated contexts. The researcher then marked key points from all the recorded data, immersed in the FGDs, created mind maps, and noted the critical information and, while doing so, kept reflecting on the key information and isolated strong and weak points. Finally, a careful study of the mind maps and notes was made, including the co-researchers' mind maps and notes from the field, while identifying their links to the research questions and objectives.

The researcher studied Braun and Clarke's 'Using Thematic Analysis in Psychology (2006)' and 'Successful Qualitative Research: a practical guide for beginners (2013)'. The literature provided insight into thematic data analysis. Braun and Clarke stated six thematic data analysis stages that begin with familiarisation with the data (Braun & Clarke, 2006, 2013). First, the researcher familiarised himself with the data, reading them multiple times to understand the underlying information or meaning based on the contexts that emerged from them. The researcher also paid attention to each co-researcher's words and their relation to the overall data; coded all the transcribed data in the second stage, including images and notes from the field; created a table and arranged similar codes under one column; and extracted data to support them (Braun & Clarke, 2006). Next, the researcher read each code carefully for its relationship with other codes in terms of meaning and its relationship with the research question and

objectives and arranged them in a table. Finally, several mind mappings were made to synthesise each under specific themes.

From the codes, the final themes that emerged were related to the principal factors preventing Nepalese male migrant workers from the prosumption of HIV prevention; the inefficiency of current HIV prevention intervention to address them are discussed in Chapter 5. Chapter 6, on the other hand, discusses the research as space for Nepalese male migrant workers to be the co-creators of HIV prevention messages and themes that emerged from the co-creation. Chapters 5 and 6 below discuss the process and findings in answering the research question, *"How can Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention measures?"*

4.9 Conclusion

This chapter presented the methodology deployed in the research to provide a space for Nepalese male migrant workers to co-create internet-based HIV prevention methods. The critical theoretical perspective is best suited to this research to provide a space for marginalised Nepalese male migrant workers' voices. The PAR methodology has become a powerful tool for collaborating with Nepalese migrant workers in this research. PAR has provided a space for Nepalese male migrant workers to creatively explore and express their ideas and experiences on HIV risk contexts, internet use, and HIV prevention. The PAR principle and icebreakers such as games, jokes, and video recording were very effective in order to bridge the gap between the academic researcher and Nepalese male migrant workers. Finally, this chapter reflected on the data collection, analysis process, ethical approval, and techniques to ensure co-researchers' rights and privacy.

Chapter 5

Reflection on Nepalese male migrant workers' life, HIV and HIV prevention and the process of PAR

5. 1 Introduction

Understanding the context is crucial to successful health promotion interventions focused on individual, community or government activities (Sparks, 2013; WHO Commission on Social Determinants of Health, 2008). The day to day activities, experiences and stories of people in their communities provide the best foundation to understand their contexts. This study began with the reflections of Nepalese male migrant worker co-researchers on their life, HIV risk contexts and behaviours. The co-researchers interpreted the information (what they thought had contributed to their experiences and understandings) in the field. The primary researcher further interpreted and analysed them using thematic data analysis. This was the basis of PAR in this study before moving to the co-researchers' co-creation of an HIV prevention strategy, discussed in chapter six.

The co-researchers' discussion on their day to day life experiences and multiple underlying factors responsible for those experiences was aligned with the research question, "What are the experiences of Nepalese male migrant workers in terms of HIV risk contexts and behaviours?" The findings were related to the themes on the individual factors, socio-cultural contexts, and laws limiting Nepalese male migrant workers' access to HIV prevention information and tools such as safer sex practices and condoms in Nepal and destination countries. Further, the gaps in the current health promotion and HIV prevention interventions in home and destination countries were found increasing Nepalese male migrant workers' vulnerability to HIV. Section 5.2 explains how the PAR methodology assisted in a space for the Nepalese male migrant

workers to reflect on their contexts, knowledge and experiences. The section also discusses the challenges or limitations of using a PAR approach in HIV research in Nepal. The section below 5.3 discusses the emerged themes related to the individual and contextual determinants increasing the Nepalese male migrant workers in HIV risk behaviour and the challenges in using HIV prevention in Nepal and destination countries.

5.2 Deploying a PAR approach in the research

Participatory Action Research (PAR) methodology focuses on community participation and empowerment through self-generated knowledge and action (Kemmis et al., 2014; Lowenson et al., 2014). In the context of this research, it meant collaboration with Nepalese male migrant worker co-researchers, their active participation in providing an understanding of their life and context, followed by a co-creation process to develop HIV prevention interventions. The PAR principles and tools deployed in this study commenced with the introduction of the co-researchers to each other and relationship-building in FGD3, and listening to their co stories and experiences of multiple HIV risk scenarios in both home and destination countries in FGD4. In FGD5, the co-researchers explored potential forms and contents for internet-based HIV prevention and also shared concepts for and initiated practice relating to their co-creation., The co-researchers deployed the PAR cycle of planning, action and reflection in the following FGDs until they concluded in FGD9. The FGD9 also included a session on the co-researchers' self-reflections about the co-creation process and outcomes and how these might support HIV prevention for Nepalese male migrant workers.

As described by Kemmis et al. (2014) and Lowenson et al. (2014), the PAR cycle of reflection, planning, action, and evaluation assisted Nepalese male migrant workers in understanding their contexts, sharing concepts on internet-based HIV prevention, practices, and co-creation of them. The cycle was a foundational process alongside the

researcher's commitment to place co-researchers' knowledge and skills at the centre of this activity. This research deemed Nepalese male migrant workers capable collaborators in HIV prevention, and their day-to-day experiences were a relevant source of knowledge in addressing the HIV epidemic (Cahill, 2007). Thus, initial FGDs focused on exploring and understanding the Nepalese male migrant worker co-researchers' lives, their perceptions of HIV and skills in HIV prevention. These were pivotal PAR steps for the co-researchers' understanding of their HIV-vulnerable contexts and behaviours.

The research objective was to co-create internet-based HIV prevention. This began with an internet search and concept generation on internet-based HIV prevention in the FGD5. However, an earlier participatory and sharing-based video recording and editing session in FGD5 contributed to understanding the co-researchers' knowledge and skills in smartphone use, photography, videography, and related applications. The PAR principles of democratic approach, free and independent space, and respect for the co-researchers' rights and privacy significantly contributed to their fulsome participation. This greatly helped complete this important study on highly sensitive issues in Nepal.

5.2.1. Building trust to discuss sensitive issues

The development of mutual and trusting relationships for informal focus group discussions (FGDs) and activities was the primary PAR process to avoid gaps in knowledge sharing and minimise hesitation among the co-researchers (Baum et al., 2006; Kemmis et al., 2014; Lowenson et al., 2014). Establishing a trusting and informal space was crucial in this research for the necessarily intensive discussions about the sensitive and stigmatised health issue of HIV in Nepal. Respect for the co-researchers' rights and privacy and the informal nature of the study's activities were the fundamental PAR principles deployed to develop mutual and trusting relationships.

FGD3 focused on building trusting relationships among the Nepalese male migrant co-researchers, and this approach continued throughout the research process. The FGD included a formal introduction of co-researchers, followed by games and jokes, and then a short outing designed to assist teamwork and provide the opportunity to get to know each other. On reflection, those activities were essential in creating a trustful, informal and interactive environment for the researchers and co-researchers to understand each other and mitigate any nervousness or hesitation about the sharing of sensitive information in a safe space.

Cody, the facilitator, led the relationship-building session that began with some amusing jokes on the context and life of Nepalese male migrant workers and their spouses and other aspects of the Nepalese society. Seth joined in:

> Seth: Shere [a typical character often used in Nepalese jokes] prayed to God. God was happy with his prayer. God asked, "What do you want, Shere?". Shere asked, "Oh! Lord, I want a big vehicle and lots of girls around". God said, "Tathastu [okay, given]". What did Shere become, do you know...? A girls' school bus driver!

Seth's joke generated a lot of laughter in the team. However, it also reflected Nepalese socio-economic contexts such as poverty, belief in fate or supernatural power, the desire for possessions and reliance on God. The following from Cody reflected typical Nepalese society, literacy levels, particularly amongst an older generation, that highlights the significance of audio-visual forms of health promotion and HIV prevention messages

> Cody: Once, a son came home with his exam result and showed his mark sheet to his father. The father saw it and said, "You got the weak mark in all subjects. However, you got 80 marks in the last subject." [That is, the total of all marks].

At the beginning of FGD3, the co-researchers were nervous. However, they became more relaxed and friendly over time and began to include more jokes with adult

content. Cody, the facilitator, shared the first joke with adult content (below) to establish a fun, enjoyable, and comfortable environment. The participants, as co-researchers, determine the overall research process in PAR. Therefore, as a participatory researcher, I did not intervene or interrupt the co-researchers: the research was on HIV through unprotected sex. The contents of the jokes reflected their perception of the sexual behaviour of migrant workers and their spouses. The co-researchers presented the adult content without designating them directly, as in Cody's joke:

> Cody: A man went abroad for work. Before he went, he measured the size of his wife's hole [vagina] with an egg. He warned his wife that "I would kick you out from home if it became bigger than this." He kept the egg safe and went. After a couple of weeks, the wife was sick of sex [being without sex]. She started to do [it] with her neighbour. After two years, the husband returned. He checked, but the hole was bigger than earlier. Then the husband was angry and asked why this was bigger than earlier. "Did you sleep with anyone?" The wife replied politely: "No dear, how can I do with any other. It is bigger because it is delighted today and laughing wide seeing you after two years."

The joke included more adult content, but it also reflected how the co-researchers (as male migrant workers) perceive their and their partners' sexual lives. Another co-researcher told a joke that reflects a particular view on the life of migrant workers and their spouses and their potential extramarital sexual relationships during their multi-year separation from each other.

> Blake: Once, a Lahure [migrant worker] returned home after three years. Unfortunately, his wife was having her period [menstruating] on the same morning. The couple was in trouble. Suddenly, his wife found a solution. She said, "If you do not mind, I will request a friend of mine to give you what you need for tonight. Do you want to go with her?" The husband was happy and excited. She called her friend and sent her husband along. The husband returned the following day in a happy mood. However, it did not last long. The wife asked, "You look happy; I hope you had a lovely time". The husband replied, "Yes, she was very nice". The wife asked if the friend had asked anything. The husband replied, "Yes, she asked for Rs 1000, so I gave it to her". Suddenly, the wife had a tongue slip; "What! 1000! Her husband gave me only 500 for four nights."

Although such jokes would seem offensive in some contexts, in this instance, they provided a shared way for the co-researchers to connect through humour and provided some insight into perceptions of extramarital relations among Nepalese male migrant workers and their wives. One of the reasons the co-researchers suggested that such affairs were believed to occur was through returnees delivering parcels, messages, letters or money to their co-workers' families or spouses. These deliveries were not unusual, as often there was no other convenient channel available to send parcels and money back to family in Nepal. This belief led the co-researchers to discuss the rumours of returnee migrant workers having sexual relationships with their co-workers' spouses at home. Although it is difficult to know how much is based on reality or fantasy, Blake's story did remind me of a story of my friend having sex with his co-worker's wife at home in Nepal. According to him, he went to deliver parcels to his friend's home and, as it was late, his friend's wife invited him to stay. Later in the evening, she offered him some drinks, which led to flirting and a sexual encounter. Offering food and shelter to guests is a part of Nepalese culture; however, casual sex is unusual. Excessive alcohol use and a desire for sex after a prolonged separation from her husband may have led to the experience. Similar suggestions of sexual encounters with the spouses of co-workers were a prevalent motif that emerged in co-researchers' discussions.

As an icebreaker, along with the stories and jokes, co-researchers also played a game to facilitate group cohesion. Cody, who organised the game, divided participants into two groups. He asked each group to turn to the other team and act either as 'a wall' or 'a gun' or 'a rabbit'. The general assumption of this game is that a gun's bullet kills a rabbit, a wall blocks a bullet, and a rabbit can jump over the wall. Thus, if a team acted as a gun (acting out the hunting position with fingers) and the next team acted as a rabbit (putting both hands on the head with index finger up), the first team scored a point since the gun can kill the rabbit. If a team acted as a wall (standing up straight, like a wall) and the second team acted as a rabbit, the second team scored a point

because a rabbit can jump over the wall. If the first team acts like a gun, and the second team acts as a wall, the second team would score a point because a wall can block the bullet.

The game was tremendous fun, with much laughter coming from each group. It encouraged teamwork and decision making. The game also showed the participants that our actions and choices could be affected by others. The participants understood that this knowledge could be applied to other life decisions, including whether to engage in casual sex, use condoms or not and also inform about HIV risks. For instance, Nepalese male migrant workers may be faithful and loyal to their partners. However, a partner's decision to have unprotected sex with others would impact the worker. The reverse is also the case. The game also highlighted peer influence in decision-making and the choice of actions that may apply in a decision to engage in casual sex.

Relationship-building is a pivotal part of PAR research, essential in researching a sensitive and stigmatising issue. Informal activities and contexts such as sharing stories, jokes, games, and outings help develop a relaxed and friendly environment. Such activities in this study helped the researcher and participating co-researchers understand each other's lives and perceptions about sex, migrant work, society, and their co-workers and their spouses' sexual practices. This was essential to move forward in this research.

5.2.2. Deciding on methods for doing PAR together.

Power is an important concept in PAR, which aims to empower those involved in the research (Baum et al., 2006). PAR focuses on democratic principles as a means to overcome traditional professional dominance in the research process. Participatory research offers the space, necessary resources, and technical assistance for community members to study and understand their current context and develop actions

for change (Lowenson et al., 2014). This research used the PAR approach to empower the Nepalese male migrant co-researchers through self-generated knowledge and actions.

One of the objectives of this research was to study the Nepalese male migrant co-researchers' knowledge of and skills in contemporary digital technologies to support the co-creation of an internet-based HIV prevention strategy. Photography or videography is a participatory creative tool used to identify and visualise the community contexts impacting health and health systems (Lowenson et al., 2014). As the primary researcher in this study, my role was to act as a facilitator, technical advisor, and supporter to community members who led every project stage in participatory photography or videography. In this regard, the co-researchers were required to understand their knowledge and skills on the subject. Therefore, the session was in place to provide co-researchers with a space to reflect on their knowledge and skills, to provide appropriate PAR tools and develop the knowledge needed to achieve the research objective. Thus, FGD3 included a session to explore the Nepalese male migrant worker co-researchers' knowledge of and skills in photography and videography and to understand the multiple tools and applications they may have used. The session encompassed a discussion, practice, action, reflection, and feedback session to extend and refine the co-researchers' existing skills.

I opened the session by sharing the following information:

> Til: All of us have experience in capturing videos and photos. You must have captured them hundreds of times on different occasions and moments. However, we might not have thought about the different types of videos based on the subject matter and context. For example, it may not be appropriate to use the same techniques to capture normal life events and a crime scene or witness' reflection on crime or sensitive personal matters. In such a situation, we must think about the privacy of people. The first type of video is a normal video in which we record every detail. In the second type of video, we focus on sharing related voices without disclosing the speaker's identity. The third type is rather than a recorded video, it displays a photo with or without voice-over, like in a PowerPoint presentation. For example, HIV is a

sensitive and stigmatising issue in Nepalese society. We must think about the appropriate type of video if we want to co-create a video.

I then handed the floor to the co-researchers to share their opinions and explain their existing photography and video recording, and editing skills. Like most people with access to the technology, the co-researchers had experience capturing videos and photographs of their lives. In the FGD, they shared their knowledge, experience and skills, which allowed them to validate and learn new knowledge about photography and video recording and editing skills.

Cody: We should think about light as well. It should not have an anti-light effect. Before capturing, we must think about the side and angle for clear and bright photos or videos. The camera captures the lights reflected from the image; therefore, we have to think, how can we get more lights like tilting, straight, from down, up, from which side camera gets more light it gives a higher quality photo.

Cody shared simple but important precautions to ensure the capture of higher quality photographs and videos. Cody further explained the relationship between light and images to help participants capture quality photographs and videos for others. As Cody said, photography and videography success is related to lights, angles, presentation, and how consideration of these aspects assists the capture of higher quality photographs and video. He noted the importance of background scenes and ambient noise to the quality delivered by a photographer or videographer. As Bruce points out:

Bruce: To capture photos and videos, we need to be careful about minor things such as background scenes and any noise around. Many times, we take photos. However, we cannot share due to ugly things in the background. Similarly, unnecessary sound or noise spoils our videos.

Many commercially-available and freeware editing applications are available online, assisting in producing quality photographs and videos. These software applications target specific uses. For instance, some applications are designed for photo-editing,

while others are for creating and editing videos. Therefore, as part of the FGD, I initiated the discussion in which the co-researchers shared their knowledge and experiences of free applications for a photo and video editing.

Seth: I use RealPlayer with features like crop, trim, and merge videos but cannot format. We can cut some parts but cannot regain them once removed.

Donald: The one that I used was a video slide maker. It allows you to select photos, trim them and play with audio. The audio plays in the background and slideshows photos on the screen.

The growing friendly environment encouraged every co-researchers to engage in the discussion and practical activities.

Seth: Okay, we will make a video, but actually, what is the purpose of creating a video? Can you tell us?

The development of co-researchers' understanding of the purpose and use of the video was an important aspect of the planning and co-creation of HIV prevention tools and activities. The process allowed them to consider appropriate content, contexts, and forms of the visual message. However, as the primary researcher, Seth's question also prompted me to reflect on whether I could provide enough details on the research objective. At the same time, I was excited to see that he was already thinking about the co-creation of tools and ideas for HIV prevention. The co-researchers were transforming into active co-creators or prosumers of HIV prevention. I realised the benefits of introducing PAR methodology and participatory workshops at the beginning of participatory and action-oriented research. The co-researchers practised their skills and ideas and reflected on the photos and videos they had captured. The session helped the co-researchers with the opportunity to advance their practical skills through observation and feedback.

Donald: [looking at his photo and commenting aloud] It would have been perfect if he had taken it from a closer shot. A standard mobile phone camera also took a good picture.

Paul: how good is a local wine? This is also like that - pure, natural and straightforward [room blasts with laughter]

In this conversation, Donald shared his impression of the photo he captured. At the same time, Paul lightens the mood with funny compliments.

Throughout this session, the co-researchers made fun of almost every situation, offering funny compliments or gestures. I also noticed that the co-researchers never used direct Nepalese terms to refer to reproductive organs or sexual behaviours such as penis, vagina, anus, sex, brothels and prostitutes. Instead, they used gestures or terms like ‘this’, ‘that’, ‘the place’, ‘the thing’. Further, they used *Adda* (a term used to refer to a government office) for a brothel or other place where sex workers were available, Cap/*topi* for condom and *hunter* for playboy or playgirl. It may be related to Nepalese cultural influence, which restricts public discussion about sexual matters.

Reflection is a crucial aspect of the PAR process and outcome. It is also an important component of developing plans to act further for improvement. For example, after the reflection and feedback on the first take, Donald captured another better shot that co-researchers recognized and appreciated.

Donald: This is perfect now, looking fantastic.

Bruce: Perfect now.

The participatory video recording session was an important milestone in developing mutually-respectful relationships and confidence among the co-researchers. It also provided the opportunity for the co-researchers to refresh and advance their knowledge and skills. It assisted in developing a base for the co-creation of HIV prevention

actions. There was a strong sense amongst participants that the knowledge and skills gained from such workshops would also be beneficial in their day-to-day lives ahead.

5.2.3. The challenges in PAR and teamwork

PAR is a participant-centred research process in which the co-researchers make decisions, including articulation of their roles and planning for the FGs' schedule, venue, and tools. Planning for the following FGDs at times that suited all co-researchers was a challenge in the research. The co-researchers often concluded one session without a final decision about scheduling the next FGD.

Seth: Let's tell you our suitable time. I prefer 12 noon or 1 PM on Saturday. At that time, most of us are free. We finish our morning work and might not start if we have planned anything for the evening.

Bruce: We can do the next one more on Saturday morning; let's plan for a tea talk.

Cody: Sorry, I may be absent on Saturday; I will be out of the city this Saturday. But will be online in the Messenger group. I may add something on what happens here. I will share what I know in the next meeting.

This conversation from FGD3 is an example of the challenge of finding an appropriate time for the co-researchers, all of whom were on short leave to be with families at home, mostly spent for relaxation with friends, family, and partners for fun. The co-researchers' participation in the research was very much appreciated, despite occasional challenges in conducting FGDs smoothly. The conversations reported below from FGD4 describe the co-researchers' support and passion for the study, despite being busy during their visits home.

Paul: Let's sit on Saturday at 3:00 PM.

Seth: Let's do it like this. Do not say about three, let's start at about 1 PM; Donald will return from the village.

Donald: Okay. We will be in contact; therefore, there will be no problem. Saturday is better than Sunday. We all will be in contact; if anyone has any problems, we can share them in the Messenger group. It may be a

problem if we do not have any contact after this; however, we are in touch with the messenger group.

Til: Okay, let's purpose for 3 PM on Saturday unless any changes are required. If anyone of you wants changes, please share on the messenger group.

The participatory team faced a similar situation throughout the study. It represents the multiple voices, power-sharing, team spirit, and democratic decision-making processes associated with undertaking this research. The co-researchers suggested opening a Facebook Messenger group, which I created before starting FGDs, so that participants could communicate with each other. The Messenger group was a helpful tool for the participants to communicate and plan for FGDs, and a significant achievement of the study. According to the co-researchers, Facebook Messenger had only been used to communicate with family and friends before joining the research study. In the study, it was used to plan the upcoming meetings. This may also be a valuable consideration for researchers seeking to engage community members who have limited time to devote to a research project.

5.3 Nepalese male migrant workers and HIV risk

PAR researchers identify their target community, form a research team, and collaborate to study and understand their day-to-day life experiences and develop actions to bring about change (Baum et al., 2006; Kemmis et al., 2014). With the formation of the research team and completion of the relationship-building phase, the research focused on exploring Nepalese male migrant workers' lives in the home and destination countries and their knowledge and experience of HIV. This section presents themes related to these.

5.3.1. ‘Lahure’, identity, sex and HIV.

The co-researchers were among the more than four million Nepalese male migrant workers, known as Lahure, who spend most of their time abroad, away from their spouse or regular sex partner (Bhattarai et al., 2020). Traditionally, Lahure refers to those Nepalese male migrant workers recruited in British Gurkha Army in India (Khanduri, 1997; Sijapati & Limbu, 2017). The Gurkha had exemplified bravery in World War I and World War II. Nepalese society deeply respects Lahure, and many families who rely on remittances have a more wealthy and fascinating life than others in Nepal. Migrant work was the only source of cash in many communities in the past. Therefore, a Lahure was the most desired partner for many Nepalese women in the past, and this remains the case in some communities in Nepal.

> John: Whatever work you did abroad does not matter. When you land at the airport, you buy some new clothes and perfumes. Then, you are a Lahure. Here [in Nepal], people say, “Look, Lahure is coming!“ The word Lahure means enough. People come to meet and chat with you, and ask about yourself. Women, even young girls, get attracted.

Local mothers' groups and clubs respect a Lahure’s return, celebrating with folk songs and dancing in many rural societies. In return, they receive cash and gifts from the Lahure. As a community member, I also participated in such a celebration during my childhood. Although this tradition has slowly faded with urbanisation and the increased numbers of migrants who work in many occupations in multiple countries, it is still practised in rural Nepal. Community perceptions and respect for migrant workers attract local women, increasing the prevalence of casual sex between returning or visiting workers and Nepalese women.

> Donald: Women like to go with a Lahure [returnee migrant workers] than a man who earns more than him in Nepal because they know Lahure is ready to spend more on her than other people.

The incidence of casual sex may be related to men's economic status and possession of resources and women's desire to benefit from them (Schmitt, 2014). In many traditional societies, including Nepal, women mainly engage in household work and are financially dependent on their husbands or partners. The relatively comfortable lifestyle of migrant workers and women's desire to gain perceived financial benefits contribute to the number of casual sexual encounters.

Returnee migrant workers' desire for fun and relaxation after long periods of monotonous work abroad means they are keen to spend time with friends and relatives and drink alcohol in Nepal. As a community member, I have also seen and heard stories from my friends and cousins about spending money on alcohol and girls during their time at home. They have a very active social life during their return home compared to locals, contributing to their attraction to local women and sex workers.

> Seth: They [women] know Lahure is in a holiday mood and become ready to spend a lot. Women of such types [looking for a sex partner] are after Lahure for fun and money.

Human sexual activity is a natural behaviour. However, sexual relations are sometimes related to money or resources, an interplay between the desire to collect and spend money (Baumeister & Vohs, 2004). Some women use sexual relations to obtain money or other gifts. The co-researchers in this study used their resources or their ability to spend money as a tool to lure women.

> Paul: Many Lahure (Nepalese male migrant workers) contact their ex-sex partner(s) or someone who is in contact. I did too. Then, as soon as I landed in Kathmandu, I called and planned a date. You must buy a gift or give some money then you can do anything [sex]. Many people spend a lot of money at that time. I wasted too.

The migrant workers' newly gained economic status and spending ability were factors for engaging in casual sex. The returnee male migrant workers use the perception of

an extravagant lifestyle and their ability to spend money to lure local partners and sex workers into fulfilling their desire for sex.

A person's economic status significantly determines their status and respect in many societies. Income level is also a determinant of personal freedoms and opportunities for sex in many destination countries. For example, according to the co-researchers, migrant workers with higher incomes can take their families with them to many destination countries, renting a room outside the work camp. However, very few take their families with them, nor do they call their spouses or family members due to multiple complexities, including higher living costs than in Nepal. As a result, these migrant workers have more freedom and increased opportunities for casual sex. One co-researcher, Seth, experienced this greater level of freedom, although he denied being involved in casual sex activities abroad. However, he provided his room key to friends for their use when he was away for work.

> Seth: Migrant workers with a certain income level can rent a room outside [the camp]. I also lived renting a room. There is more freedom for such people, and many of them also involve multiple casual sexes. Some of my friends who stayed in the camp asked for the key when I went to work.

Peer get-together and alcohol consumption are also encouraging factors for casual sex that decreases inhibition of cultural norms, legal statutes and concerns around HIV. It also contributes to inconsistent condom use.

> Bruce: I have experience in how it happens after alcohol use in Nepal. I was a taxi driver before I went for migrant work. Four boys returned from Qatar, and Dubai came to Begnas Lake. They drank until around 9 PM, and then they decided to go to Dohori [a pub where customers can enjoy live folk songs, dance and drink]. When drunk, everyone is the same. We do also like them [John and Donald: Yes]. I received them and took them to dohori, where they tip up more beers. In dohori, two of them lured a waitress who became ready to go with them after midnight. She asked them to pick her up from her room after being dropped at her room at midnight. She gave her room address and number. They picked her up, and we headed to Phewa lake. It was already 12:30 am, and the boys said they did not have a condom. [John and Donald laugh]. It was not possible to get a condom. I left

them and returned home. After 2-3 days, I met the girl in the dohori who said, bro, we drank until about 3-4 AM. We were fully drunk, and it happened to both without using a condom.

Power relation between males and females in the society and its relation with money or resources is also a challenge in HIV prevention in Nepal. In the story above, the boys imposed their male and money power which the girl could not deny in her desire to earn money. It is not clear whether the girl charged more for the unprotected sex or not. However, there are rumours that sex workers charge more if you do not use a condom.

Carrying condoms can be difficult in Nepal, particularly within a family where being unmarried and having sex is frowned upon. With limited opportunities to purchase condoms, the risks of unprotected sex increase. This is further complicated by people's perception of the low risk of contracting HIV and sexually transmitted infections (STIs).

Paul: I never used a condom with any girl previously. However, once I came in trouble when a girl became pregnant. I was very worried as I did not want to marry her. I got medicine to throw it [abortion]. Then, I started to use a condom while doing with local girls.

Donald: You are not at HIV risk doing with local girls. But if the girl bears a child [pregnant], it becomes a problem. If the girl takes your name, then your life is gone.

Paul: I never used a condom [Laughs, and others join him]. I did with many women while working in Qatar. I had sex with Qatari, Sri Lankan, Kazakhstani, and Nepali women but never used a condom.

Co-researchers reported more concern about potential pregnancy than HIV or STDs infection. They believed there was no risk of HIV from having sex with local (Nepalese) girls. This may be a consequence of the comparatively low HIV prevalence among the general population in Nepal or ignorance of potential sex partners. The perception that condoms primarily are for contraception was reinforced by Paul, who, having impregnated a Nepalese woman, sees the need for condom use. However, his view

about condom use is limited to sexual relations with local girls, whilst he boasts of not using one when overseas.

This view is not confined to Nepal and Nepalese male migrant workers with low education and skills. In the practice-FGDin Auckland, university graduates from other countries also reported more concern about the possibility of pregnancy from unprotected sex rather than HIV or STIs. The challenges associated with purchasing a condom and the feeling that it is not necessary led to risk-taking by at least one co-researcher:

> Samaya: I was alone at that time. I had a local girl as a co-worker. We had to go for a field visit occasionally. She used to say she had a boyfriend. However, we had sex without a condom multiple times. First, I did not care because I was alone for a long time. But, later, I got scared thinking about her possible relations. If she said I am pregnant and if she had any STDs from her boyfriend, what would I do? I did not think about HIV at that time. After some time, I searched for another job and moved from there.

According to Zegan (1991), many people do not think of themselves as at risk for HIV despite having unprotected sex. They perceive their partner as trustworthy and healthy people who could not be HIV positive. In Nepal, this belief was found among men having sex with local partners: they are perceived their partners as trustworthy, healthy and HIV negative. The focus on preventing pregnancy meant that strategies practised to avoid this may not have included strategies to prevent HIV or STIs, including the use of condoms.

> John: There is someone who never uses a condom. Ha-ha! I never use a condom. You do not need a condom to avoid pregnancy; you may have other techniques.

For many years, it has been understood that consistency in condom use when engaging in casual sex is essential to avoid STIs, including HIV infection and unwanted pregnancy. However, the discussion was an indication that Nepalese male migrant

worker co-researchers have low consistency of condom use as they have a low perception of HIV risk, which may be a significant challenge for HIV prevention. As John shared, to avoid unwanted pregnancy, they may use other techniques such as withdrawal or relation in a fertility ‘safe’ period or pills. These techniques may help avoid pregnancy; however, they increase the challenge for HIV prevention.

5.3.2. Opportunistic casual sex and low condom use.

The co-researchers regarded casual sex as a huge opportunity that they did not want to forgo, despite the multiple risks of unwanted pregnancy and STIs, including HIV infection, potential social stigma and legal punishment. They believed they might not get other opportunities in Nepalese society, where casual sex is stigmatised and prohibited.

Donald: Situation demands and our heart wants to do it [sex]. Although we know we should not do without a condom, we do.

Bruce: I don't want to leave the chance saying I do not have the thing [condom] as I may not get it again.

The overriding desire for sex outweighed the potential risk of having unprotected sex among these Nepalese male migrant workers. Under my questioning, the co-researchers stated that they did not feel at risk due to unprotected sex because, in their view, they did not act randomly. They chose partners they saw as beautiful, clean, and healthy-looking and who they perceived could not be HIV positive.

Til: Did you have any moment you felt you were at risk of HIV or other STIs due to unsafe sexual behaviour?

John: No. Never. I do not go with anyone. I go with selected ones who look healthy and beautiful. They can't be HIV positive.

Paul: I never thought about HIV risk. I did with migrant co-workers abroad. All of them were medically tested and healthy-looking. They could not be HIV positive.

Many societies have misconceptions and beliefs, including that lean, thin, and weak-looking people are unhealthy, while physically strong, clean, attractive people are healthy. This is also portrayed in many health promotion messages and interventions. However, PLHIV indeed may look healthy for years, increasing their partners' vulnerability to HIV.

The co-researchers in this study also believed that sexual relationships with migrant co-workers were safe because premedical tests and HIV negative status are mandatory for migrant workers in most destinations, including New Zealand. Further, migrant workers undergo medical tests approximately every two years in most destination countries. Therefore, the workers perceive little or no risk of HIV infection while having unprotected sex with migrant co-workers.

> Seth: One important thing to remember is that it may not make a difference with someone working there [migrant workers] because they go through regular medical check-ups. But, if the girl or yourselves have other partners, then it will be an issue.

Having a sex partner who is also a migrant co-worker may be safe unless you or your partner have multiple sex partners. However, it is hard to know partners' previous and current sex life, and trusting them without knowing their sexual history can be costly.

> Seth: Some Nepalese girls look very gentle there [in migrant work settings]; however, they may not be. I have one experience; both boys and girls are very dangerous. I did not know while staying for 2-3 years. We used to think these girls were not that type. I only knew that when we 5-6 boys returned from there had a gathering in Kathmandu. The boys said, I did it with this girl and that girl. They even told marks on or around their private part [sex organs], which matched with each other. It means all of them had done with the girls. I thought the girls were good. I never thought anything wrong about them. However, when 3-4 boys said they did with the girls, they had a mark there [sex organs]. Both boys and girls are a fraud to that extent.

The co-researchers had either experienced or heard such stories of multiple partners. Dave mentioned that "No one returns without doing it [sex] there" in one conversation.

None of the other co-researchers opposed his statement, suggesting that they were familiar with it. They had overlooked the potential HIV risk arising from unprotected sex and their partners' potential sex networks or sexual history.

Some of them described having sexual relationships with just one partner. This helped cope with loneliness and provide sexual pleasure, companionship, love, and other support. Having a relationship with a local woman provided John with sex and other social benefits, including a strong attachment and the chance to visit different places and enjoy local foods.

> John: I did not get a chance in Qatar. I had one in Malaysia, like my private partner. I had fun with her for about eight months. She was slightly older than me. First, she was the girlfriend of a friend of mine. He enjoyed it with her. He returned about 6-8 months earlier than me. He introduced me to her and gave me her phone number, saying she was a local woman and may be helpful for me. She and I went to the airport to drop him. Then, we sent messages because I did not know much of the Malaysian language to talk over the phone. Later we met each other and started to do (sex). It was the first time; I was in love with someone. She used to wait for me until I finished my job and used to go on a trip in her car. She used to bring fruits and foods for me that I distributed to my friends as well. I never ate that many fruits. I enjoyed my stay time after I met her.

It is challenging to discover a partner's entire sexual history, and even more difficult when you belong to a different culture and speak a different language. In this instance, John’s partner’s history also included sex with his friend without knowing the friend’s sexual history, increasing the likelihood of a network of unsafe sexual relationships.

Buying condoms can be difficult in Nepal because of the social stigma. Often there is only one health centre or private pharmacy in a local area, and many people, especially unmarried men, hesitate to buy condoms. Thus, carrying or keeping a condom is equally challenging when you live with your family.

> Bruce: I have experience regarding hiding a condom. I had bought a taxi at that time. After a few months, I thought the car seat covers were dirty and decided to wash them. I took them out and soaked them in a bucket. Suddenly, I got a call from a client. So I asked my younger

> sister to wash it and put it in the sun. When I tried to put the seat cover back in the evening, I felt something unusual. I checked there were two condoms on the drivers' seat covers. I felt ashamed and found it hard to face my sister for many days. I wondered if she had seen them or not, what she might have thought about me if she had seen them. What would happen if she had told my wife or mom?

The earlier taxi driver's strategy to hide the condoms and Bruce's mental state after knowing that there were condoms in the seat cover that his sister might have seen reflects how difficult to carry a condom in Nepalese society. It is equally challenging in many destination countries due to the laws or workplace rules towards migrant workers and extramarital sex. The distance between the workplace or accommodation and the market is another challenge in accessing condoms in many destination countries.

> Paul: Most labour camps are far from the city or market. The security gives us limited time to go out. Must finish (do sex) and return within 30 min or an hour.
>
> John: Our company was away from the city; we needed to hire a taxi to go there. So, if you found a partner and place, there was no chance to get a condom immediately.

Difficulty accessing condoms may lead to unprotected sex in destination countries. However, they are available without charge from all government health services providers; hospitals, health posts, health centres, and primary health centres in Nepal. However, national records show unprotected sex is the major cause of HIV transmission in Nepal, accounting for about 85% of HIV transmission (NCASC, 2020). In Nepal, availability and access are two different factors influencing consistent condom use. For instance, condoms are available without charge in almost all parts of Nepal. However, consistent condom use is low in Nepal because of the social stigma and legal prohibition of premarital and extramarital sex. Further, the perception that they are not used in sex between husband and wife deters both buying or carrying and discourages consistent condom use.

Many people perceive condom reduces sexual pleasure. The desire for sexual pleasure overrides the importance of using a condom to prevent HIV, STIs and unwanted pregnancy.

> Seth: It is bothering to use a condom.
>
> Donald: There is no taste after putting on a condom. It is like eating sweet, covering/wrapping your tongue with polythene.

For Seth and Donald, using a condom meant an artificial barrier preventing direct flesh contact; the sexual pleasure was a driver for not using condoms, despite the risks.

The co-researchers understood that condoms might not protect them all the time.

> Donald: That safety [condom] also does not work sometimes and gives you trouble. I have experienced it. Once, I used a condom. I did not realise it broke in the middle while doing it. Later, when everything was finished, I saw it was broken. I was worried about what will we do if she got pregnant. Later, when I learned about her last period, I felt relief. However, I was worried until she had her next period.

Donald's statements reveal two opposing views of condom use: condoms reduce sexual pleasure and cannot be completely relied upon it. The underlying reason for such scepticism may be the poor quality of condoms and/or their improper use. As a community member and a former health promotion worker, I am familiar with the difficulty of demonstrating the proper use of condoms in any public place or in any programs in Nepal. Nepal relies on foreign aid, which may also increase the possibility of receiving lower-quality condoms in donations.

Doubts about the efficacy of condoms may also be related to insufficient knowledge about condom use. The co-researchers revealed in the discussions that they had very rarely searched for health information online. Instead, they used the online platforms primarily to access Facebook and chatting applications and watch movies and songs on YouTube.

Seth: I do not search for health information. I have followed a couple of health news pages on Facebook. I read health information if I see something interesting.

Cody: I also read available news on Facebook pages. I search for health information sometimes. However, I never search about HIV. I fear the word HIV.

There are many challenges in obtaining appropriate and detailed information about reproductive health and HIV in Nepal. This results from multiple barriers, including a low understanding of HIV risk, insufficient knowledge about HIV, HIV risk behaviour and preventive measures, difficulty obtaining a condom and the social stigma of carrying one. Addressing the social stigma associated with HIV, HIV risk behaviour, and available preventive measures and removing legal barriers preventing sharing information, mainly through online platforms, could mitigate the challenges.

5.3.3. Socio-cultural perception assisting in unprotected sex

Social and cultural factors may also be reasons for the low perception of HIV risk among co-researchers, despite having multiple sexual relationships. The co-researchers believed that multiple sex partnering outside of marriage might not be the major reason for HIV infection. They suggested that it may be more closely related to polygamy, a traditional practice common in Nepal and is still practised in many migrant workers' destination countries. The *Muluki Yen* (Country Code) Nepal 1963 was amended in 1980 to prohibit, save in exceptional cases, a second marriage before the first marriage had been dissolved. However, some older generations in Nepal are still living with two or more wives.

Seth: Multiple partners may not be the reason for HIV. If this is the case, many people would have died from HIV because many hunters [playboys] older men in the society have 2-3 wives at home and might be doing with many others outside [participating in casual sex]. This might be your bad luck or some punishment from God for your sinful act.

John: Yes, there are a lot of people like that (with multiple partners). I know one man who said while drinking together that he had a target of 108

partners, and he said he is almost there. I can say he did not use a condom all the time.

The Nepalese community's belief in fate, God, and supernatural power also contributes to potential HIV risk due to having unprotected sex. For example, many mythical stories describe Hindu Gods participating in adulterous activities (Dwivedi, 2018). Polygamy, which has been practised in traditional and modern society in different forms, may have also influenced the co-researchers' views on casual sex and HIV risk.

5.3.4 Workplace and accommodation arrangements and casual sex

The type of workplace, occupation category, accommodation arrangements, personal contacts and the ability to pursue casual relationships are closely related to the opportunity to engage in casual sexual activities in destination countries. The unisex nature of the workplaces makes it easier for migrant workers to initiate a casual relationships. For instance, Paul's position as a security guard in a supermarket provided opportunities to form relationships with female co-workers and local customers, leading to sex with many co-workers and a local woman. However, as a construction worker staying in a male camp in the country, John did not have similar opportunities. However, John's move to another country with a unisex workplace led to an opportunity for a casual relationship with a local woman.

John: When you are together for days and/or nights, it happens automatically. I shared already how the relationship with a co-worker initiated and ended with doing the thing (Sex).

Regular encounters at the workplace or in accommodation increase opportunities for intimacy. Absence from home, absence from a spouse, and resulting loneliness mean the intimacy may turn into affection, love and/or sexual desire, leading to sexual relationships.

Seth: I have one experience when there is a unisex accommodation building. You know there is a lift in a tall building and a staircase as an option. Nobody uses the staircase, and has no proper light as well. Some of my friends used to do it on the staircase. Sometimes, in the garbage collection area. It is a big space in the backyard to throw from the top; some used to do it there.

Male and female workers in unisex accommodation have separate storeys, with strict security and rules. However, according to co-researchers, the security and rules are insufficient to prevent the desire for casual sex. In fact, workplace rules and security contribute to unprotected sex since carrying a condom or keeping a condom in the workers' rooms is impossible.

Paul: Yes, boys (migrant workers) used to do it secretly at night, hiding behind big walls, dumping sites with low light. They look for the opportunity to meet and do in a rush. There was no chance in the daytime. To go out of the building, you need the guard's permission, and if you return within a given time, the guard says nothing. For example, if you ask permission to go out to market, the guards give you limited time to be there and back. Then, how to bring it (condom) from the market and when to do it (sex).

Casual sex behaviours are also related to the ability to interest and persuade a potential partner. For example, as a waiter in Malaysia, Blake was in contact with many customers, including Nepalese women. However, he did not have sex with anyone there, although some of his friends visited brothels.

Blake: I did not do with anyone there. However, some of my friends used to visit brothels.

Thus, unisex workplaces and accommodation arrangements in many destination countries are other contributing factors to the prevalence of casual sex. As well paid casual partners are also available in these countries. However, multiple contextual, cultural and legal factors prevent immediate access to condoms, increasing the risk of HIV through unprotected sex.

5.3.5. The challenges in changing people's perception of HIV risk

Multiple factors pose challenges to HIV prevention in different societies. Low perception of HIV risk is one of the significant challenges to preventing HIV globally, and it is a factor in Nepal. Changing people's perceptions is difficult as many people find it challenging to access information and adapt to new ideas. I found that the co-researchers remained hesitant to accept the growing HIV risk despite seeing the data. For example, I shared online a news report that PLHIV increased by 2000 in the Kaski district. The published information was based on data obtained from multiple organisations working on HIV in the district. In an FGD, I initiated a conversation about this data to elicit the co-researchers' reflections and perceptions. The co-researchers assumed multiple ways to deny the increasing number of PLHIV and risk in the local community.

Cody: Many of them may be in-migrants in Pokhara from other districts or abroad.

The co-researchers were also not prepared to admit that they may be at HIV risk. The low perception of HIV risk in the community is a major challenge for HIV prevention in Nepal. The co-researchers suggested that increases arose due to migration from other districts or surrounding regions. In saying so, Cody denied the potential numbers of PLHIV around him and his potential vulnerability to HIV.

The news report also stated that 53 PLHV were below 18 years old, which was alarming. Responding to this information, Cody explained the increasing unsafe sexual practices and alcohol consumption among teenagers and young adults in the community:

Seth: It has been written that 53 HIV infected below 18 years.

Cody: Yes, the number may increase soon; there are dangerous playboys and girls even in classes 8 and 9 in school. I have also seen drunken

boys and girls and boys wandering on the street, outside clubs and discos at night in Fewa Lake. Someone picks the girls and drops them back the following day. The girls are fully drunk and know the next day. A few days later, it becomes a habit. Some boys and girls have the routine there.

5.3.6. Insufficient knowledge contributing to HIV risk behaviour

Most of the co-researchers could describe the four modes of HIV transmission, although they lacked detailed knowledge. Reproductive health and sexually transmitted infections (STIs), including HIV, are covered in the school curriculum in Nepal. However, as cited in an earlier study, cultural barriers to reproductive and sexual behaviour limit classroom interaction (Wasti et al., 2011). Insufficient knowledge among co-researchers who at least had secondary level education was an example of the impact of the socio-cultural perception on sexual behaviour in the education system. They perceived the mass media, such as radio and television, as the main source of their current knowledge of HIV rather than from the school.

Seth: that (modes of HIV transmission) is a well-known fact to everyone, isn't it? Direct sexual relation, from a pregnant woman to child, injective-drug users, blood transfusion.

Paul: Yes, they are the familiar 3-4 points heard regularly on the radio and TV.

Most of the co-researchers were aware of four modes of HIV transmission - unprotected sex, mother to newborns, contaminated syringe or piercing devices, and a blood transfusion. This means they were familiar that unprotected sex could transmit HIV but were not practising what they knew. They had the misconception that healthy-looking partner can not be HIV positive, posing a significant challenge to addressing condom use to prevent HIV.

Mass media can be a reliable channel to communicate most health messages in many countries, including Nepal. When reporting on HIV transmission, mass media in Nepal

is generally limited to the four modes of HIV transmission known by the co-researchers. The lack of detailed information about other modes of transmission among the co-researchers resulted from the nature of mass media messages designed to convey information to the general population.

Paul: I have never heard that it transmits from oral sex. It transmits from blood or blood materials contact, which does not occur in oral sex.

Donald: It does not transmit from anal sex as well.

Seth: This may not occur in oral and anal sex. There is no semen and vaginal fluid contact and no blood contact.

This limited knowledge increases Nepalese male migrant workers' vulnerability to HIV. For instance, MSM is one of the communities with the highest HIV risk and prevalence rate, and anal sex is a sexual behaviour with a high risk of HIV transmission. The co-researchers were ignorant of HIV transmission through oral and anal sex. They explained that blood, vaginal fluid, and semen are not shared with a partner during oral and anal sex and that HIV, therefore, cannot transmit during these sexual experiences. The reason for this belief may be that none of the co-researchers identified as MSM. They described sexual relations only in terms of vaginal sex.

A strategy that included accurate and detailed information targeting specific populations and their needs could help extend important HIV knowledge among the Nepalese male migrant workers. Strategies deployed in this study - the focus group discussions (FGDs) and the use of the internet - will assist in validating and extending the current knowledge.

Lack of current, accurate and detailed knowledge of socio-cultural norms and legal provisions for migrants in destination countries were other challenges for HIV prevention among Nepalese male migrant workers. Most Nepalese migrant workers lack pre-migration orientation about their work, its social context, and the legal provisions in the destination country. The co-researchers also had insufficient

knowledge of HIV and the HIV pandemic in the destination country. For instance, John and Blake worked in Malaysia for many years. However, they were ignorant about the incidence of HIV infection among female sex workers there.

John: Sex work is high in Malaysia, but I heard those [women] in Adda [(brothels] go through regular medical tests every 15 days. They are the medically-approved ones. Any woman is not allowed to do the thing there.

Blake: Certain areas are fixed for that in many countries. It is everywhere, like in our country. They go through regular medical tests.

Blake and John assumed that sexual relationships with sex workers in Malaysia were safe because they believed that all sex workers underwent regular medical tests. I encouraged them to conduct a Google search on HIV prevalence among sex workers in Malaysia. They found the results shocking: HIV prevalence among female sex workers was 17.1% in Kuala Lumpur and 14.5% in Pahang in 2016 (Ngadiman et al., 2016). Kuala Lumpur and Pahang are the two major destinations for Nepalese male migrant workers, including John and Blake. While they did not visit sex workers in Malaysia, they were aware of many of their co-workers who did.

John: Very few like me had a girlfriend there; others go to adda (brothels).

Blake: I never went to such a place, but some of my friends visited there (brothels).

The lack of pre-departure orientation about the socio-cultural and legal aspects of the destination country, ignorance of HIV prevalence, and more opportunities for casual sex contribute to increased HIV risk among Nepalese male migrant workers.. Casual sex is readily available in many countries despite the legal, cultural, and religious prohibitions. Strategies are needed to curb the spread of HIV caused by the lack of accurate, targeted and readily-accessible information and tools.

5.3.7. Demographic and socio-cultural impacts on consumption of HIV prevention

The society in which individuals grow up or live influences their sexual practices (Asamoah & Agardh, 2018). The surrounding social contexts impact their access to information, their level of knowledge, decision-making, and sexual practices (Lodge & Wegrich, 2016). Traditional norms and values in many societies are barriers to accessing HIV prevention information and purchasing and using condoms. Nepalese social norms prohibit open discussion about sexual matters, and this deprives the youth of Nepal of reproductive health and HIV prevention information. At the same time, the stigma related to premarital and extramarital sexual activity discourages young people from either seeking information about HIV and HIV prevention strategies or from buying or carrying a condom.

Demographic factors such as marital status and age directly impact an individual's access to condoms and other sexual and reproductive health information, especially in Nepal or the many destination countries where sexual relationships outside marriage are stigmatised or prohibited.

> Cody: It may be okay to buy a condom. You are married. What about me? If someone sees me buying or carrying a condom, what would they say.

In Nepal, even married men are hesitant to buy a condom because of social perception. Nepalese people generally believe that married couples would not use a condom. Marital status is also the key to accessing condoms in many destination countries.

> Paul: You are single there [migrant work/abroad]. You are not allowed to carry a condom or keep it in your room. The guard checks you for any prohibited things at the gate and occasionally checks your room. Where do you go to find a condom immediately in such a situation? It is not available everywhere, and you cannot carry it all the time. It will be trouble if the security guard finds it.

Even where Nepalese male migrant workers may be aware of HIV risk, unwanted pregnancy and other risks due to unprotected sex, access to condoms remains challenging because of the stigma of premarital or extramarital sex in Nepal and many destination countries. The co-researchers in this study were hesitant to buy a condom in their local area.

Blake: In a new place, we can buy easily but in the local area, even married men feel uncomfortable buying because people hardly use a condom with their wives.

In a small community dominated by traditional norms and values, most people know each other and are interested in knowing about others. Therefore, the co-researchers believed that buying a condom at a local pharmacy provided the opportunity for community members to doubt their character. The potential stigma discouraged young and unmarried people from buying a condom.

Paul: In most Muslim countries, any relation outside marriage is unacceptable and punishable. You are liable for punishment if you get caught involved in such activities.

Seth: Punishment differs in countries; you will face either lashing, deportation or imprisonment - one or more.

Religion, culture and law in Nepal and many destinations country discourage and, in many cases, prohibit casual sex. However, the co-researchers were aware of the reality of casual sex occurrences in Nepal and many destination countries. However, the prevalence of HIV and PLHIV in these countries suggests that cultural and legal restrictions may encourage unsafe sexual practices rather than prevent them.

Paul: We are scared to buy a condom, especially if Arabi [an Arabian/a local person) is in the shop. We may be in trouble if they ask about our marital status because we are alone despite being married in Nepal. People do not want to be in trouble.

Paul: Next is because of language. For example, there is medical, but an Arabian runs it; we cannot speak and do not know what they call a condom in their language. I do not know how to ask as well.

Besides the legal and cultural barriers to casual sex, there may be a language barrier for migrant workers in the destination country. Many co-researchers did not know the word for a condom in the local Arabi language. As well, questions or requests for personal details from a shopkeeper could cause trouble for the migrant workers or at least feel confronting. Thus, low language competency also contributes to unsafe sex practices in destination countries. The potential risk and consequences of being asked for ID cards or personal details in a country where extramarital sex is prohibited also discourage buying a condom.

Seth: One thing that came to my mind is that we need to show Pataka [ID Card] to buy it [condom]. I never bought a condom.

John: Yes. I never bought a condom there. However, as much I know from friends, they may ask for your ID.

Donald: There may always be a fear that they may be in legal trouble buying a condom. People do not want to risk buying and carrying a condom there.

Along with extramarital sex, abortion is also illegal in many destination countries. That legal provision increases the risk to those involved, especially women, making them liable for punishment. Thus, women must be very cautious in those countries.

Seth: Abortion takes place here, but it is illegal there. That is one more thing for people having many children there.

Paul: I never bought a condom there. However, sometimes the girls used to have it with them. They would have stolen from the supermarket or got from someone working in supermarkets.

Multiple demographic, social, cultural and legal factors clash with the desire for sex and sexual pleasure. Stigma and discrimination are two major problems that most HIV-

infected people face throughout the world, and they are significant barriers to HIV prevention. The potential stigma about engaging in premarital or extramarital relationships and discrimination against PLHIV discourages people from practising safe sex and seeking HIV prevention information, testing, treatment, and care (Wasti et al., 2011).

> Cody: One primary reason for HIV transmission is that HIV infected person does not expose their status. They could save others but are scared to go for a test, and the infected do not share HIV status. The infected person cannot speak like us because they fear potential sigma and discrimination after being exposed.

Many research studies show that unprotected casual sex is the dominant cause of HIV transmission globally, including in Nepal (NCASC, 2021; Aryal, 2017; Khanal & Karkee, 2012). However, the stigma, discrimination, and laws unintentionally lead to risky sexual behaviour and discourage people from discussing sexual matters with their partners.

> Paul: Not possible to talk about HIV and ask for an HIV test to partner at any cost. If she feels you doubt her, she leaves you immediately.
>
> Donald: If we ask your partner for an HIV test, she will think you doubt her character. If you say, I have a relationship with others; she will not accept you. In both cases, it spoils your relationship. So, it is wise to keep silent if you want to continue the relationship.

Custom and tradition mean that many Nepalese individuals, and their families, prefer to secure a partner who has not had previous relationships. Disclosure of previous relationships makes it difficult for an individual to find the desired spouse. Consequently, people choose to hide such relationships, even though they know the potential HIV risks to themselves and their partners arising from their failure to disclose.

5.3.8. Geopolitics, social life and peer influence

Several co-researchers cited loneliness and peer influence as the important factors for HIV risk behaviour among Nepalese migrant workers (Khanal & Karkee, 2012: Bam et al., 2013; Dahal et al., 2014; Mukharjee & Mail, 2013: Poudel et al., 2004). Multiple factors such as topography and sparse settlement with poor infrastructure development promote interdependency in most Nepalese societies. Unlike in modern and developed societies, living independently may not be possible in rural Nepal. Nepalese culture is integral to social gatherings, exchange of help in agricultural work, religious celebrations, and cultural occasions and ceremonies. During health crises, familial deaths, natural disasters, and cultural and family celebrations, the local neighbourhood's exchange of help and support is vital. Migrant workers carry this tradition and its values as they travel abroad. Co-workers and roommates are the ones upon whom migrant workers rely andshare any happiness and worries, including any health and other problems while abroad. The context both at home and in destination countries influenced Nepalese male migrant workers' decisions, including decisions about alcohol use and casual sex.

Seth: One thing is, there is *mahol* [environment]. The environment develops like this; we do not stay alone, live in a group and support each other. If one goes there [sex work], then he shares the story with friends, and there develops a situation; others go eventually. Suppose, in one room, we 6-7 workers stay, anyone, can go to such places [brothels] or do with a female co-worker. Others get encouraged or excited to go sometimes. You can say no for one day, second day, third day but finally must go one day with peers; otherwise, you become alone in the groups. At the same time, peer starts to tease you and also questions your manhood.

Blake: Boys in the Maldives are also like that. I found more Nepalese girls working than boys in the Maldives. There was a big park. Every Friday after 2 PM, many Nepalese migrant workers gather there. I saw young girls from 17/18 years to 40/45 years women. The boys share such stories and plan to target one girl for the week and the next girl next week. Boys target first, then go for introduction in the park. I found Nepali boys targeting Nepali girls and spoiled Nepalese girls mostly.

The influence of peers, being of sexually active age, conflicting feelings of loneliness and freedom while being away from home, and the ready availability of casual sex are some factors that can lead migrant workers to engage in casual sex. It is simply too emotionally or physically difficult for many of them, although they may prefer to avoid participating initially. Sharing experiences and contacts from co-workers or roommates encourages others to engage in casual sex. The desire for sex and loneliness while away from home and family encourage migrant workers to make contact with possible sexual partners and initiate relations/chats in their free time. Alcohol consumption is frequently cited as the catalyst for sharing sexual experiences, casual partners' details and contact. This also encourages to contact the girls.

Donald: When you go somewhere for that [sex], you share about the experience. We even may share contact with friends. Your friends cannot stop calling on the number when he is alone and free after work.

Cody: Little bit [gestures of drinking] affects as well. When you sit for a drink together, you share everything, even not hesitate to call.

The social and cultural life of Nepalese male migrant workers and the environment in which they live abroad further increase the challenges for HIV prevention among Nepalese male migrant workers.

5.3.9. Possible sexual abuse and HIV risk

Globally, sexual abuse or exploitation is a threat to many vulnerable groups, including young migrants. People with criminal or abusive intentions seek out and abuse vulnerable people to fulfil their sexual desires; migrant workers, especially young adults, are also a vulnerable group.

Seth: I experienced the situation 2-3 times; I had difficulty going out alone. Some people there [in Dubai] should not see a very young boy. Now I have a bit of a beard and moustache, but I was only 21 with no beard and moustache. Taxi drivers often asked me to go with them and asked for my mobile number and address. One time, I met an Arabian who was like that. I went there on a salesperson visa and worked 5-6 months as a salesperson. If there are no trolley boys in the

salesperson's job, the salesperson must help the customer take stuff down to the parking area. One day, when I went to load his stuff, one Arabian asked me to go for a trip with him and discuss things. I got scared and ran away from there [laugh], saying, “I am going, I have a duty, and I must go”. I said that and ran away from there.

Seth experienced potential sexual abuse, but fortunately, it did not happen. Many migrant workers have little knowledge of the local language, surrounding contexts and laws of their destination country. They are part of the vulnerable groups who can be exploited easily.

John: They [MSM] do not do anything to mature men with thick beards. But it is always a risk to young boys without a beard and like *Magar* and *Gurungs* [Mongolian Face].

Seth: Pakistanis are *Khattam* [worst]. Pathans [a community of Pakistani people] should not see young boys like us without a beard and moustache. They immediately ask for a phone number, even in a taxi. Many times they trouble me by asking for my mobile number.

Paul: In Qatar, I had heard a case like that; a Pakistani took a boy and killed him after doing that on his back [anal sex].

Though women may also be abusive, fortunately, Paul and John experienced a compassionate relationship with local women. However, it is not always safe to have a relationship with local women.

Paul: When I shared my relationship with a local woman with my friends, they made me scared to tell about potential risks. Then, I changed the company.

Sexual relations, whether smooth or abusive, may be risky for young and inexperienced migrant workers. If the abusers feel any risk from their activities, there may be an additional risk to the victims, even the migrant workers' lives.

Bruce: I heard women also do the same. They take boys to desert or some lonely place, made them do the thing [sex]) and kick them out somewhere on the way.

John: I heard they take to the seashore or lonely desert to do the thing. Someone with love and kindness drops you where they picked and gives you 1000/1500 Riyal. However, cruel returns leave you there [desert/lonely place] or may kill you.

Social or religious norms and legal provisions may incline abusers to crimes like sexual abuse and murder to avoid potential repercussions for the abuser. Not speaking the local language and ignorance of the possible legal consequences make it difficult for victims to seek legal redress. Further, there is a belief that legal systems in many countries are friendly to citizens over migrants.

John: If something happens and we register a case too, it does not work. In the case of girls, it does not work. They may say he abused me; he did this and that to me.

Paul: If we register a case, it may work. But we do not know anything about it there. In the case of girls, our case does not do anything. However, in the case of men, it may work. But we do not want to go through legal things as it may increase other risks.

Many countries encourage the recruitment of migrant workers to perform low-level work with low pay rates and facilities, which discriminate between locals and migrants. For example, in the significant destinations of Nepalese migrant workers, Arabic countries and Malaysia, employers prefer to hire temporary foreign contract-based migrants as they do not expect them to seek permanent settlement or citizenship rights. Many countries do not include migrants in their labour laws and provide limited freedoms and facilities (Jureidini, 2005). In such a situation, the countries' laws and policies play a role in the increased abuse and exploitation of migrant workers

5.4 Conclusion

Chapter five presented the themes from the Nepalese male migrant worker co-researchers' reflections on their lives and experiences of HIV, HIV risk and HIV

prevention. The chapter focused on the day-to-day experiences and stories of Nepalese male migrant workers disclosed in an informal participatory group discussion. The discussion provided detailed information about the scenarios in Nepal and destination countries, which put the migrant workers at risk of HIV. This was an important process in the research, as it allowed the researcher and participating co-researchers to understand the contexts and prepare a base for the most appropriate and efficacious HIV prevention strategies. In short, the chapter provided insight into the experiences and understandings of Nepalese male migrant workers and co-researchers about their situations and the major determinants for those that set a base for appropriate HIV prevention strategies. Chapter six will focus on internet and digital technology use among Nepalese male migrant workers, the co-creation process, and HIV prevention messages and strategies.

Chapter Six

Nepalese male migrant workers co-creating community HIV prevention for the internet

6.1 Introduction

In Chapter Five, co-researchers reflected on their lives, the primary step in the PAR process. The chapter provided an understanding of Nepalese male migrant co-researchers' lives in both their home and destination countries including insights into possible risk behaviours and contributing factors and their knowledge about, and perceptions of, public health messaging and interventions/action for the prevention of HIV transmission. The chapter built the foundation for the co-design phase of the research.

The co-creation of action was the next stage in the PAR process. This chapter presents themes related to co-creations focusing on the research questions of "How do Nepalese male migrant workers perceive current internet and digital technology-based HIV prevention?", and "How can Nepalese male migrant workers contribute to co-creation of HIV prevention?". This chapter also discusses the co-creation process, tools and themes in them.

This part of the PAR approach continued the established process of observation, reflection, planning and action. These underpinned the co-creation of internet-based tools, including sketches, audio, video messaging, and two PowerPoints about HIV prevention for male migrant men. The co-researchers also observed, reflected, and planned the process, put it into action, and continuously reviewed achievements throughout the research process. In the final FGD, the co-researchers reflected on their experiences and achievements, reviewed and assessed their success in achieving the

research objectives, and evaluated the significance of the participatory approach deployed in the study.

6.2 The scope of the internet on HIV prevention among Nepalese male migrant workers

Migrant workers and their families are avid users of technologies, such as the internet and smartphones, to communicate with each other or find required information online. This supports the growing role, even the reliance, on the internet and digital technology: they have become an integral part of people's lives and collaborative spaces in the 21st century (Ritzer et al., 2012). The collaborative or prosumer space has assisted billions of people globally, including Nepalese male migrant workers in many sectors, in activities such as the communication of health and other information and sharing personal moments and experiences. The most common platforms for Nepalese male migrant workers are Facebook, YouTube and chatting applications such as Facebook Messenger, Viber, IMO.

Til: What is the purpose of using the internet and smartphone-based applications?

Blake: I used the Internet things to pass the time and to talk to my family. I use Facebook to spend leisure and Messenger to chat with family and friends.

The internet and digital technology-based communication have replaced previous modes of communication such as telecommunication and postal services. Therefore, understanding how the co-researchers currently used these technologies was important to understand how they could leverage or influence HIV prevention strategies. The co-researchers widely used the internet and smartphones for entertainment, to utilise their free time, and to communicate with family and friends. Many of them spent time scrolling through Facebook and watching movies and songs on YouTube.

Bruce: Many migrant workers use Facebook only. They do not know much about other facilities online.

Seth: People there [migrant workers] have minimal knowledge of Internet things and smartphones. Many of them have Facebook IDs and passwords created by someone else. They use it for entertainment and chat.

Seth's story reminded me of an experience. When my younger brother worked in Gulf countries, he was not very experienced using technology. As a family member with greater skills in these areas, I remember creating email IDs and Facebook accounts for my brother, cousins and friends. My experience and Seth's story reflected the limited knowledge of, and skills in, the internet and digital technology use among Nepalese male migrant workers.

Co-researchers in this study had not spent much time searching for health information through government or NGO websites. Instead, they followed Nepalese online health news pages or channels on Facebook, which they would watch or read if they found exciting or necessary health information there.

Seth: I have liked [followed] *Swasthya Khabar* [Health News] and other online papers on Facebook. I watch health information there. I have hardly explored any health information online for me.

Bruce: I also did the same. I have followed some health news pages on Facebook. I watch if I feel something beneficial for my and my family members' health.

Most co-researchers stated that Facebook was the most popular and appropriate platform for communicating messages among Nepalese male migrant workers, indicating the trend in digital literacy usage amongst Nepalese male migrant workers. Consequently, the co-researchers determined that a social media and Web 2.0 based approach using Facebook and YouTube would be the most appropriate channels for health promotion and HIV prevention strategies targeting Nepalese male migrant workers.

One of the challenges to achieving the research outcomes was that the co-researchers believed, in the beginning, that HIV-related topics were not relevant to them as they did not see themselves at risk of acquiring HIV. However, they also were either reluctant or scared to watch any news about PLHIV. Although they were frightened by the potential risks, they avoided accessing information that reinforced their vulnerability to those risks.

> Cody: I do not watch HIV related news. I get scared thinking about HIV. Most of the news provides scary data, HIV risk situations and PLHIV experiences. I felt scared knowing them, so I stopped watching such news.
>
> Bruce: That's right. Sometimes it is good to be ignorant. Knowing about something sometimes gives you unnecessary tension. Better not to know those things.

Fear or anxiety and avoiding news sites that shared information on HIV meant that although co-researchers used social media sites such as Facebook, it was primarily for entertainment or sharing personal experiences. Based on their knowledge, the co-researchers recommended Facebook as a preferred collaborative platform for sharing information to reach more Nepalese male migrant workers over any other online or digital platform.

> Seth: We [migrant workers] all have a Facebook ID. Some of us may have more than one for different purposes and people [laughs]. If we share on Facebook, people in our circle see them, which they can share further. Therefore, health information reaches more people if it is shared on Facebook. However, people may hesitate to share HIV related posts, although they read or watch.
>
> Blake: Yes, the Facebook page may be an effective channel for communicating health information.

Seth and Blake agreed that information posted on Facebook might reach more Nepalese migrant workers. Although they were optimistic that most migrant workers would read or watch HIV-related material if it appeared on their Facebook wall, they

expressed doubts that the workers would share HIV-related material on the page. However, the co-researchers believed that if they could overcome the embarrassment and share important HIV prevention messages on Facebook, YouTube, or other digital resources, it would significantly help reach more migrant workers.

6.3 The internet exploration of HIV and new knowledge

In FGD 1, the co-researchers explored Nepalese male migrant men's knowledge of digital technologies, smartphone skills and preferred photo and video recording and editing applications. In FGD3, the co-researchers continued to explore to extend their knowledge and skills in digital technology use and HIV prevention materials available online. Despite their limited skills and lack of experience in seeking health information online, co-researchers seized the opportunity to explore and learn about multiple strategies and messages online. The co-researchers were divided into groups to explore and record significant sources of information and then share them in the participatory team. They used the opportunities provided through the FDG to share findings and support each other.

> Seth: …Let's work on a small group. It (Internet search) does not take much time if each group do search for one topic and shares it with others.
>
> Cody: Let's do it like this- one group search on Google, the next group search on YouTube, another search for any website or app. We are searching for what we have for HIV prevention in Nepal.

Internet spaces provide autonomous and readily-available platforms for sharing knowledge and information. The co-researchers' used these spaces to extend their knowledge of internet-based HIV prevention using the key terms "HIV", "HIV transmission", "HIV prevention", "Videos", "Apps", "migrant", "migrant workers". The participatory teams of co-researchers discovered multiple findings and a range of

information from their searches. For example, Bruce and Seth shared an application that calculates HIV risk based on each sexual relationship.

> Bruce: I found here the HIV risk calculator app. It calculates HIV risk based on your partner and sexual behaviour. There are options to select about your partner, type of sexual behaviour, and use of condom and provide you with a result. According to the application, there is no risk of HIV if we do regular sex with a female using a condom.

The application, the HIV risk calculator, helped the co-researchers to understand HIV risk levels from their previous sexual experiences. They calculated HIV risk in different scenarios such as vaginal, oral, or anal sex with one or more partners and with or without using a condom. One challenge was that the application was developed in the English language, making it difficult to understand for some co-researchers. Co-researchers believed that such applications would be more helpful for Nepalese migrant workers to know or calculate potential HIV risk from different sexual behaviours if produced in the Nepalese language. The co-researchers listed the HIV risk calculator app as a potential form of co-creation. Unfortunately, they could not co-create this app as it demanded a high degree of app development and in-depth knowledge of technology [programming and coding]. The co-researchers agreed that although it could be a useful application for many people, it was not readily accessible to Nepalese male migrant workers in its current form.

Another co-researcher group shared a video on appropriate condom use, which they watched together. The video highlighted how a condom might break from improper use, increasing the risk of transmission of HIV and other STIs. The co-researchers also expressed beliefs that condom use reduced physical or flesh contact and reduced sexual pleasure.

> Cody: We found a video on how to use a condom. Let's watch. It's interesting. After using a condom, it does not leave anyone or anything, even going into the water. [The co-researchers watched the video]

Bruce: What! I finished that too - pig, fish, everything.

The cartoon video was informative; however, as Donald said, it was more exaggerated in contents and presentation. In the video, the man [a cartoon] had sex with people but also animals. The cartoon video was designed to message that condoms prevent any sexually-transmitted infection. However, such false or exaggerated information may create negative impressions about healthy sexual relationships. The internet provides multiple sources of information, which is beneficial. It can provide a range of commentaries on condom use and HIV prevention. However, caution needs to be exercised about what messages are communicated. Some may be misleading or inaccurate, and it can be difficult for some groups to filter reliable sources to obtain the correct information.

The next group shared one YouTube video about potential sex networks and HIV risks presented engagingly. In the video, someone asks a man, “Have you ever tested for HIV?”

Seth: The boy replies, “I am not at risk; I have slept only with three.” The three girls with whom he slept appear there. One of them says, “I slept with nine”, the next girl says “six”, and the third says “ten”. Then, “Oh my God!”

As Seth reflected on the video and the question posed, he noted that the man did not perceive himself to be at risk of HIV, as he had a sexual relationship with “only three women”. His answer to the question - that he had not been tested because he had only had three sexual partners and so was not at risk - closely reflected the co-researchers’ misconceptions that they were not at risk by engaging in unprotected sex. They believed that their partners were healthy and trustworthy. However, perceptions changed dramatically when, in the video, the man’s three partners appeared and shared the number of their previous partners. One of them said, “I slept with nine”, the

next with six and the third with ten. The video did not stop there. The girls' previous partners appeared and shared about their previous partners. In a moment, there is a big crowd of people in that network. The co-researchers found it surprising, unexpected, and scary. It helped them recognise that the risk of HIV was not just directly related to their sexual partners but also their partners' partners.

> Paul: I had sex with Indonesian, Filipino, Qatari, Kazakhstani, and Sri Lankan When I was in Qatar.
>
> John: I did with a Malaysian girl while working there.
>
> Seth: I did not know; all of my flatmates had done with the girls, although I thought the girls were good until I returned home.

The co-researchers acknowledged that they had also been part of such networks while working abroad, highlighting the importance of including information about potentially broader sex networks and HIV risk in the materials they co-created.

The co-researchers' engagement with the internet and searching for information reinforced that an individual's skills and interests determined the effectiveness of obtaining information online. For example, Blake and Paul chose to read the information published in online documents. Bruce and Seth looked for apps, and other co-researchers watched YouTube videos or some available materials.

> Paul: I did a Google search and found simple information on HIV transmission and prevention that we discussed in our last meeting.
>
> Blake: I did not watch such cartoons. It was not a video. It was a documentary, audio-only. The documentary was about how HIV transmit and how we can prevent it. It provided further information about celebrities who became a victim of HIV. I understood that HIV might happen to anyone, even to players, TV hosts, actors, and many celebrities. Using a condom can prevent HIV. HIV infected people should not worry and hide the infection as they can survive more than 20 years. You should not quit hope and confidence for longer life after getting the infection.

The internet search FGD session also helped me understand that people have different skills and interests in online information, which must be considered when planning any digital interventions. There was also clear potential for online health information and HIV-prevention messages to extend users' knowledge and skills. However, it was also important to be mindful of the potential for misleading or inaccurate messages, or messages which could not always be understood because of language or other cultural differences.

One area of information that resonated with the co-researchers was the stories of HIV-infected celebrities, which helped the co-researchers understand the nature of the HIV epidemic: a strong message that HIV does not forgive any one individual or group engaging in risky behaviour. The other message co-researchers gained was that being HIV positive was not necessarily the end of life because PLHIV can live a relatively normal life with proper care and treatment. This knowledge helped to shape their decisions around health messaging about HIV, HIV prevention and the use of appropriate information resources and channels to share them. The co-researchers' reflections on their knowledge, skills, and exploration of HIV-prevention messages online focused on sharing concepts about appropriate HIV-prevention messages and strategies for Nepalese male migrant workers in the second half of FGD3.

6.4 How PAR assisted in the co-creation of the HIV prevention messages

The co-creation of the most appropriate actions deploying the co-researchers' skills, knowledge, and needs is important in PAR. The initial FGDs, until the first half of FGD3, were foundational in understanding the co-researchers' knowledge, ideas, and perceptions of HIV and digital technology use in HIV prevention. This greatly assisted in surfacing ideas about HIV prevention strategies that might be appropriate for migrant men.

Co-researchers brainstormed potential concepts about HIV prevention that could be shared online using digital technology in FGD3, which was the starting point for their co-creation. The co-researchers' developed a list of potential forms of co-creation, shown in figure 14 below, that provided them with the most appropriate strategies to deliver information about HIV prevention online, based on the research objective and methodology considering their knowledge, skills, and effectiveness of the co-creation.

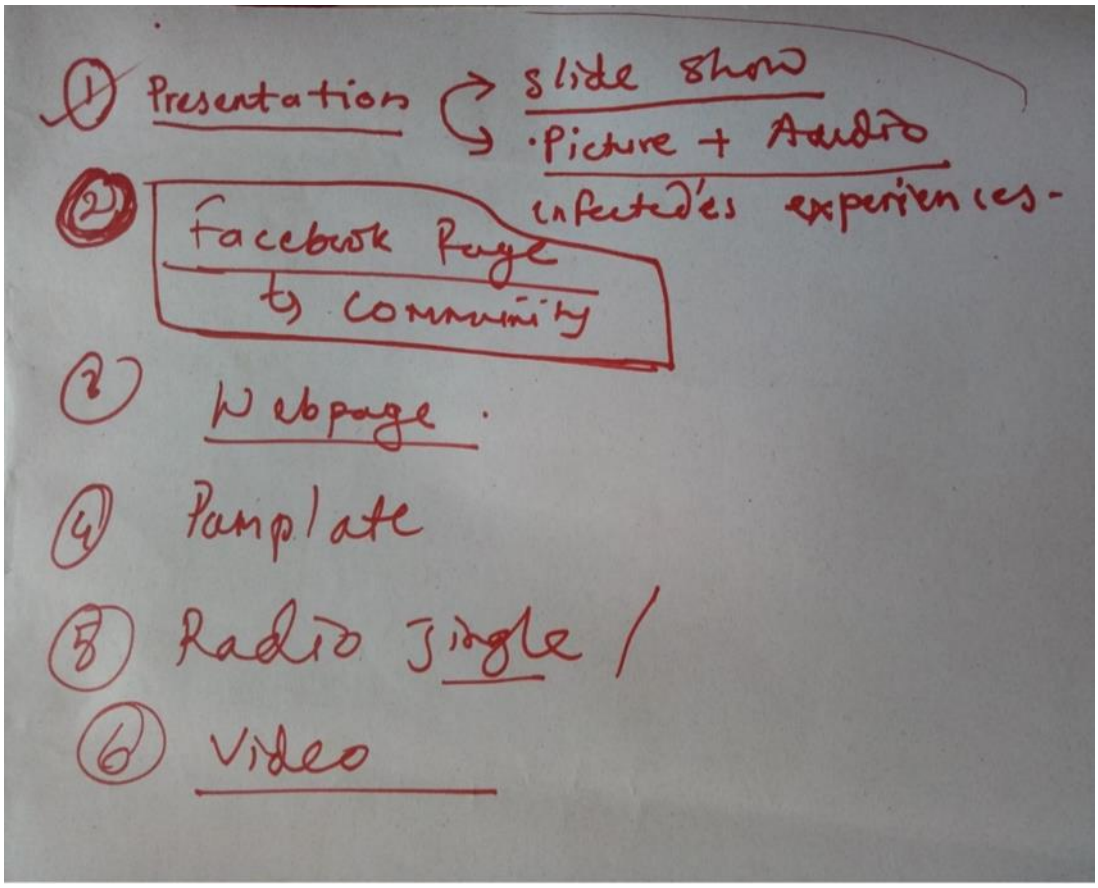

Figure 14. Potential forms of internet-based HIV prevention from FGD3.

The next crucial aspect of the research study was identifying the co-researchers' knowledge and skills related to the co-creation of online messaging, which was essential in deciding the possible forms of co-creation. Based on their skills and strengths assessment, the co-researchers agreed that the design of a web page, development of an app, interviewing PLHIV or producing high-quality videos requiring paid applications or software were not within their resources or abilities. Their

discussions supported the decision that many Nepalese migrant workers had little knowledge of the internet and mainly used popular online platforms like Facebook and YouTube. These factors significantly limited the viable options for co-created internet-based tools. The co-researchers decided to convey their HIV prevention message in a video and PowerPoint that reflected their knowledge, skills, and likelihood of reaching Nepalese male migrant workers.

PAR process and principles were deployed in the co-researchers' decision to contribute equally to co-creations rather than dividing themselves into sub-groups. This was important for team ownership in the research process and co-creation, which was equally important for their contribution and empowerment during the research process. Co-researchers' contributions varied based on their knowledge and skills. For example, Seth and Cody drew pictures that Donald, Blake and Bruce mostly coloured. Seth prepared a concept draft for the audio. The participatory team discussed and finalised the audio script. Donald typed it, and Bruce helped reading it for him. Seth and Cody contributed their voices for the audio. Donald and Paul contributed to mixing drawings and audio to create the video message. However, the whole team worked together in drawing, audio recording, and mixing them to develop the video *Surachhit hou and arulari pani surachhit huna sahayog garau* (Be safe and help others to be safe).

FGD6 moved to consolidate some of the ideas and concepts that had been shared previously. Initially, the co-researchers discussed the possibility of interviewing PLHIV to convey messages about the potential HIV risk following unprotected sex. They acknowledged that stories of PLHIV or PLHIV family members would provide a compelling message both to the general population and newly infected PLHIV. However, the co-researchers agreed that this option could not be pursued; the research objective and methodology aimed to co-create action from within the participatory team. Additionally, it would be against ethical principles since privacy was

a prime concern to avoid any potential stigma or discrimination arising from participation in the HIV research.

Seth: HIV infected people's interview is effective. Their story and experience can be a lesson to make people aware and prevent the stigma of PLHIV in society.

Cody: Yes, we can put experiences of infected peoples. If we find infected people to share, how they get infected, and what infected people must be careful about for longer life, it may save others. Similarly, we can use the infected person to motivate other infected people. The infected person can encourage others, saying I am living a healthy life with HIV for … years. If we find someone to motivate others, it can help to generate a favourable environment for PLHIV.

Based on an assessment of the co-researchers' skills and strengths, the co-researchers decided not to design a web page, create an app, interview PLHIV or develop high-quality videos requiring paid applications or software. There were some limitations in this PAR research regarding the use of skilled human resources outside the community. There was no PLHIV in the participatory group, and PAR and ethical approval did not permit to use of people from outside the participatory group. A few videos on PLHIV life and experiences were already on YouTube, which the co-researchers watched in FGD 5. In principle, the PAR emphasises collaboration with the community to study community context and help them to be empowered to bring change. Time and other limitations also contributed to re-considering ethical aspects and interviewing PLHIV outside the participatory group. This will be an area of future research. The arguments presented by the co-researchers supported the view that most Nepalese migrant workers have little internet knowledge, and most used social media like Facebook and YouTube. Therefore, it was important to focus on appropriate channels and forms of co-creation.

Seth: Let's open a Facebook Page. We can invite our Facebook friends to follow the page. We must have at least 10-20 friends working abroad in our friend list. We can deliver messages to them. If they find it useful, they will share in their circle. Slowly it will be a huge group.

Paul: Yes, it will be a proper strategy. We can deliver such messages to our circle. If they like, they will share further. People from their circle also start to follow our page.

Facebook was confirmed as an appropriate space to share information with Nepalese male migrant workers, and so the co-researchers created a Facebook page named *Swasthya Sachetana, Nepal* (Health Awareness, Nepal). The co-researchers were very optimistic about the utility of a Facebook page to share health information. They were also optimistic that their friends would accept their invitation to join the page. Unfortunately, very few people accepted our invitation at that time, and only 122 people have followed the page so far. The trend of people creating new Facebook pages, and sending an invitation to their friends to follow, maybe the reason for the low response. While it is disappointing, it is not surprising that the sheer number of Facebook pages being created means that not all can be followed that are issued to people who choose not to engage.

Additionally, the Facebook page created by the co-researchers has not been boosted, nor does it link to a website with content. Further investment of time, skills, and appropriate funding to make it more engaging and professional would attract and reach more people. However, the participatory team of co-researchers could not promote it more heavily during this study because of time and skills limitations.

The co-researchers were also very reluctant to share any HIV-related information, news, and videos on the Facebook Page themselves. Instead, the co-researchers sent news or information links to me, which I then shared on the page. The co-researchers remained reluctant to discuss and share HIV information or materials online because of their socio-cultural perceptions and the potential stigma related to HIV. Even before the conclusion of this research study, they ceased sharing information gained from the fieldwork. I continued to share helpful health information or news that I found online. It is clear that the creation of online space is not itself enough to reach the target

community. It requires a committed investment of time and skills, and this is even more challenging given that the co-researchers had insufficient skills and limited interest in continuing to support online content.

Along with the Facebook page, the co-researchers decided to co-create a video and PowerPoint to convey their message to the Nepalese male migrant worker community. The process was ongoing, deploying the PAR cycle of observation, reflection, planning, and action on the content and form until the co-creations were finalised.

> Cody: Visual form is more effective and memorable than audio. So, we can show in diagrams, putting a correct [√] sign on safe behaviour and incorrect [X] sign HIV risk behaviour.

The co-researchers believed that the audio-visual form is the most effective channel of conveying a message, even for those with hearing or visual difficulties. They agreed that the integration of audio and visual messages is helpful in conveying the creator's concept or message and that visual pictures have a more prolonged impact on people's minds. Hence, it was decided that an integrated approach would reach a wider population and more readily achieve the objectives of the created tools.

On the first day of the practical co-creation process, the co-researchers enthusiastically sketched depictions of different sexual behaviours, drawing male and female sexual organs and condoms to show HIV risks. The co-researchers prepared primary sketches of different behaviours which increase the risk of HIV, as shown in Figure 15 below. Correct (√) and incorrect (X) symbols were deployed to emphasise those behaviours which increase HIV transmission risk, even in people with reading and hearing difficulties.

Figure 15. Primary (first) sketches for the co-creation from FGD5.

The co-researchers further worked on their concept and developed refined sketches of male and female genitals having sex with one or multiple partners with or without condom to show safe and unsafe sexual practices. As discussed above, observation, action and reflection are the part of PAR process. The co-researchers faithfully deployed the process to the end of the research process and co-creation of internet-based tools. For instance, when the participatory team reflected on the co-created sketches, they realised using such pictures to convey messages in Nepalese contexts was inappropriate. The co-researchers observed that they could never own their co-creation, nor share or watch it with others, even with other community members. Consequently, from the second half of the FGD6, the co-researchers started working on representing four modes of HIV transmission, primarily focusing on HIV transmission in Nepalese male migrant workers through unprotected sex, as shown in pictures 16 below.

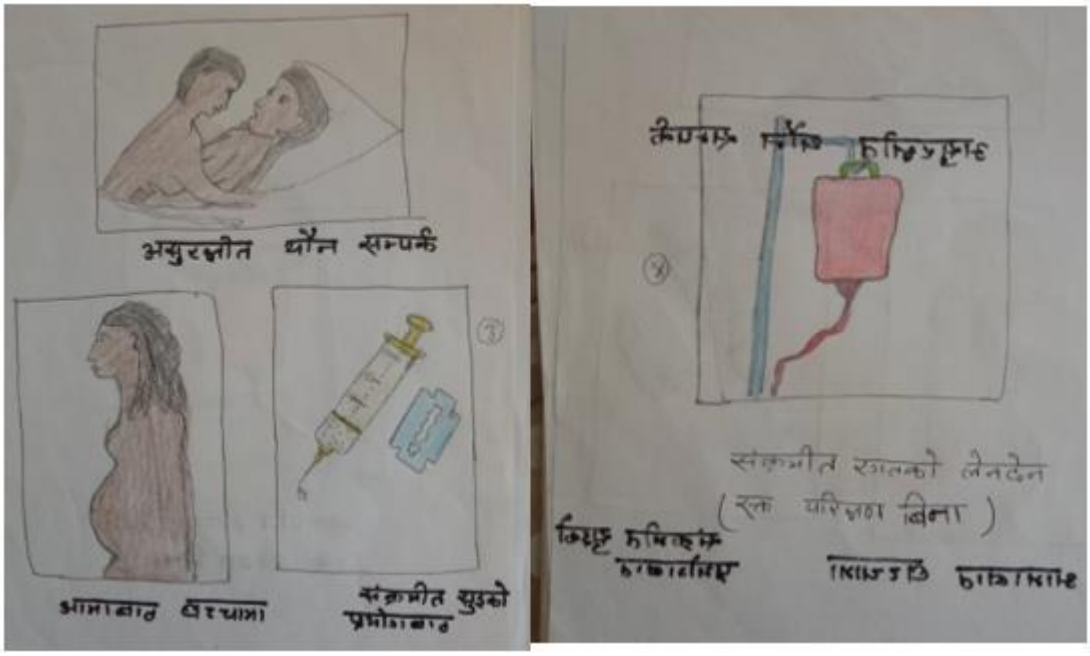

Figure 16 .Modes of HIV transmission.

Altogether, 20 drawings were co-created for the video messages focusing on the causes and consequences of unprotected sex between Nepalese male migrant workers and their partners. In the drawings, the co-researchers pictured the contexts they understood or experienced. They highlighted contexts such as availability of casual sex at home and in destination countries, alcohol consumption, and peer influence as main HIV risk factors.

Figure 17 Multiple factors assisting casual sex among Nepalese male migrant workers

Globally, sex is generally perceived as a private matter. Although premarital and extramarital sex has been a consistent part of human experience, the private nature of an individual's sexual life, history and networks often remain hidden. The co-researchers did not know each other's sexual behaviours before sharing their experiences in FGD4. The co-researchers' reflection on their previous experiences and the knowledge from the videos and the exploration of the internet helped to know the extensive sex networks that they presented in their co-creation.

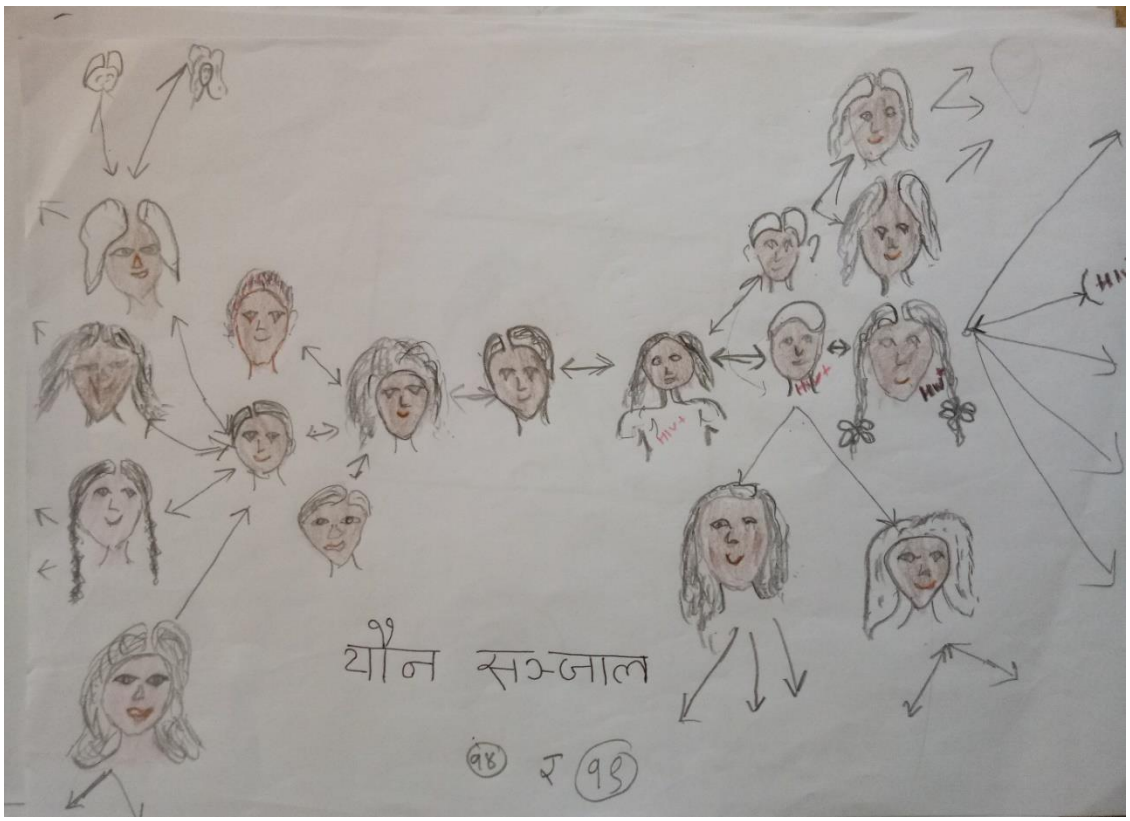

Figure 18 *Youn Sanjal* (Sex Network)

The co-researchers who, except Cody and Bruce, described themselves as “happily married”. None of them had ever checked their HIV status or that of their partners, despite their increased risk behaviours. It seemed the co-researchers’ partners or wives were unaware of their previous unprotected sexual practices, and in some cases, they may also have had such experiences. However, because of Nepal’s cultural and legal prohibitions, people’s sexual histories are not openly discussed and therefore remain hidden. Nepalese families, more generally society, disapprove of a groom or bride who is divorced or has had any previous relationship. Unless a person is formally divorced or is caught engaging in premarital or extramarital sexual relationships, people do not disclose these relationships because of the societal stigma, which creates additional barriers to getting the desired partner and living happily married life. This has reinforced the reluctance to share any details of casual sexual relationships, even with peers. As a result, a person’s sex network may be far more extensive than

the individual thought, and each incidence of unprotected casual sex may put people at risk of acquiring HIV and other STDs.

It was a positive aspect of the co-creation experience that the co-researchers became more aware of the traditional beliefs and norms about sexual relationships and their association with HIV risks. They committed to sharing their knowledge with other male migrant workers to help them become aware of potential sex networks and HIV risk through having unprotected casual sex. By dispelling myths about HIV, the co-researchers hoped to encourage more people early diagnosis diagnoses and treatment, leading to living a long and healthy life.

The co-researchers developed a short audio-visual presentation (2 minutes 35 seconds duration), mixing twenty drawings (Figure 15-17 above) and audio prepared by them. Seth and Cody contributed voices for the audio. The video discussed multiple HIV risk contexts and behaviours, the nature of HIV and potential sex networks, and the emphasis on consistent condom use to protect oneself and one's partners. The co-researchers introduced HIV as a "dangerous virus" and an "immunity power destroyer" in the video. Then, it highlighted the modes of HIV transmission. Unlike many other infectious viruses, HIV does not transmit through casual contact, such as shaking hands, hugging, high-fiving, or similar types of physical contact. Nor is it acquired via infected insects or pets or food and water. Instead, people become HIV-positive due to contact with infected blood, semen, or vaginal fluids. This can occur through unprotected sex with someone who has HIV, transfusion of infected blood, sharing drug needles with someone who is infected, or transmission from a mother to her baby during pregnancy, birth, or breastfeeding.

> Seth: HIV is a dangerous virus. Immunity power destroyer. It is an infection found only in humans that can be treated, not cured. Once it happens it can't be cured. HIV infection mainly transmits through unsafe sexual relations, contaminated syringes or other skin-piercing tools, infected blood, infected mother to baby etc.

The video then moved to the Nepalese migrant workers' context, explaining the long periods abroad; the improvement in the workers' economic position; habits of excessive alcohol use; and peer pressure as the major influences that increase the HIV risk through casual unprotected sex. Improved economic status is shown as a challenge that contributes to increased alcohol consumption and the attraction of local women and sex workers to them.

> Cody: While returning home from abroad, an improvement in economic status, local women's attraction to Lahure [returnee migrant workers], and alcohol use for entertainment and availability of sex workers increase HIV risk to oneself and partners.

This video further highlights the social-cultural norms and values that prohibit, if only in theory, the premarital or extramarital sexual relationships, which contribute to the high-risk practice of engaging in unprotected sex. The deeply-rooted stigma in society related to premarital or extramarital relationships discourages adopting safer sexual practices. For instance, condoms are available for free at local health centres; however, people are reluctant to access them because of the stigma. One of the objectives of the video was to make people aware of people's basic biological need for sex - and this is seen as normal and healthy - but there are significant socio-cultural and legal barriers to adopting safer sex practices.

> Cody: Among many causes, unsafe sexual relation is the major cause of HIV infection. Although a condom is readily available, people are found to put their health at serious risk.

The nature of HIV was the next focus of the video message. There can be a window of many weeks following infection where HIV may not be detected, even by a medical test. Even where a positive result has been received, PLHIV may look healthy, maybe

physically attractive, and be asymptomatic for years. At the commencement of this study, the co-researchers also believed that they were not at HIV risk of having unsafe sex when they did so with a healthy-looking, beautiful partner. Participation in the research provided them with new knowledge regarding the nature of HIV, which they included in the video message.

> Seth: It is hard to know who is HIV-infected or not because an infected person can live like a healthy person for years. Therefore, better to limit sexual relations between husband and wife or within a trustful partner or always use condoms.

Many earlier HIV prevention interventions emphasised abstinence or remaining faithful to a partner. In contrast, the video developed by the co-researchers acknowledges that partners may have had a relationship with others before meeting, or when they had been separated for many years as a consequence of one or both participating in migrant work. The video emphasises consistent condom use and HIV testing for unprotected sex.

> Cody: Use a condom in every sexual relation because the sex partner you trust might have done unsafe sex before or in your absence. Similarly, while staying abroad or in Nepal, you also might have put unsafe relations. Therefore, ensure HIV negative status before engaging in unprotected sex with your spouse.

Based on the co-researchers' experience and their newly-acquired knowledge about sex networks and the HIV risk in each unprotected sexual experience in Nepal or elsewhere, the video ends with strong advice that male migrant workers be cautious. It notes that even a small mistake or minor carelessness in the excitement of the moment could significantly impact them and their family. The social stigma and discrimination,

the costs and challenges of treatment and care, and other financial difficulties related to being HIV positive might impact PLHIV and their family life in Nepal.

Seth: Never forget to use a condom because our sex network can be far more extensive than imagined.

Cody: Save your own or family life from being ruined by a small mistake in excitement or carelessness.

The video itself was designed simply with rough sketches drawn by co-researchers. Initially, the co-researchers had planned to develop a second, higher-quality video; however, their limited skills in the required technology and the absence of the time needed to acquire these skills precluded the development. However, the video that was produced made health promotion messaging about HIV more accessible to Nepalese male migrant workers, particularly those who had difficulty reading and writing. The participatory team believed that such messages would allow members of the target community to understand their context and the risks of their previous sexual behaviour and encourage the adoption of HIV-prevention practices.

The research also produced two PowerPoint (PPT) presentations that encouraged audiences to reflect on and self-assess their sexual behaviours. Although multiple social-cultural and legal factors may mean that individual people are reluctant to share information about their sexual behaviours with others, this does not mean that they do not participate in such experiences. The participatory team assumed that although people can try to hide their activities from the world, they cannot run away from the facts. Reflection and understanding of the potential HIV risks to them and their partners and the impact on the broader family may encourage adopting safe sexual practices.

The first PowerPoint, named *Youn Bebahar and HIV Jokhim* (Sexual behaviour and HIV risk), contained 15 slides with a message on each slide. Figure 19 below presents

the first and second slides, encouraging audiences to reflect or re-assess their current views on sexual relationships.

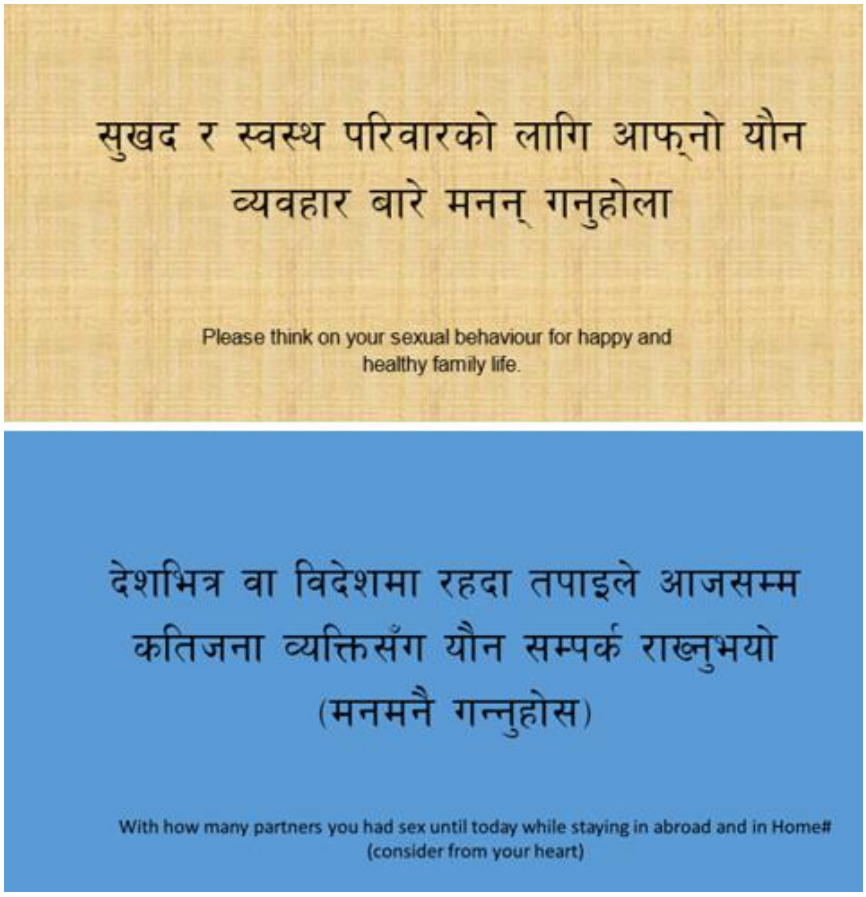

Figure 19 Slides one and two from PPT- *Youn Bebahar and HIV Jokhim* (Sexual behaviour and HIV risk)

The information above is straightforward and designed to encourage the audience to reflect on their actions. Many scholars argue that people act unconsciously on many occasions, and frequent reminders may encourage people to adopt healthy habits (Thaler & Sunstein, 2009). Therefore, messages like those in the first two slides could encourage people to think and act more carefully while deciding on unprotected casual sex.

The following slides encourage the audience to consider HIV and various risk contexts and behaviours, along with information about potential sex networks and the potential impact of a careless sexual act on the individual's and family's lives, as shown in figure 20 below. As shown in figure 18 above, each message was presented in one slide.

Please think on your sexual behaviour for happy and healthy family life.

With how many persons you had sex in abroad and in Home (think from your heart)

Did your entire sex partners have relation only with you? (Think)

If they were not limited only with you.

With how many and what kind of persons your sex partners might have had sexual relation (guess)

Where, with how many and what type of people his/her sex partners might have had sex earlier (Think on it)

If any one of them were HIV infected...

Now, you think yourself about the risk of HIV as well as other Sexually Transmitted Diseases (STDs) from unsafe sexual relation.

Your single unsafe sexual relation can transmit HIV and STDs infection to you and your wife/partner or not (think on it).

It may be possible to cure other STDS however if you get HIV infection, what will happen?

Therefore, before having sex with new partners always think about your partner's background or behaviours.

If you have ever had unsafe sex knowingly or unknowingly, do HIV test in time and live confidently.

Keep yourself safe from HIV infection and help others to be Safe as well

Use condom compulsorily in every sexual relation.

Condom, Your only safety against HIV and STDS

Always use it [Condom]

Figure 20 Consolidated list of messages in PowerPoint Presentation 1 –

Each message above is presented in separate slides in the Nepali language

The following PowerPoint, named *HIV barema bujhau ra yeslai roktham garau* (Know about HIV and prevent it), consists of nine slides containing the co-researchers' messages, accompanied by related pictures and the data available online. The PowerPoint began with a brief introduction of HIV and global and Nepalese data about the HIV epidemic, as shown in figure 21 below.

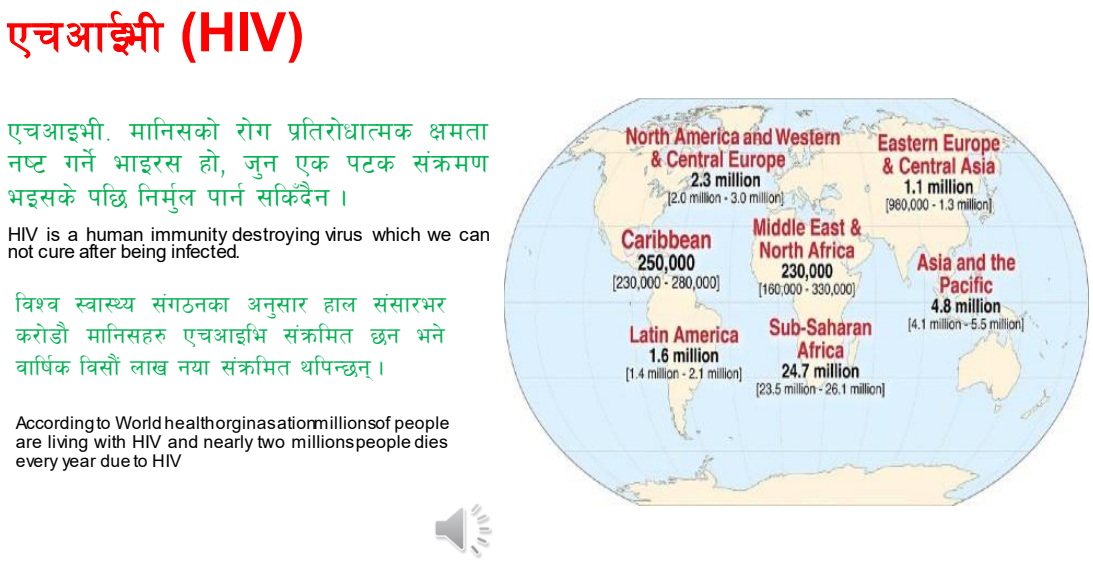

Figure 21 *HIV barema bujhau ra yeslai roktham garau* (Know about HIV and prevent it) PPT 2, Slide 1

The second slide provided information on the modes of HIV transmission, focusing on safe sexual practice, along with relevant data from Nepal. The following slides included major precautions for HIV prevention and encouraged the audience to be careful while engaging in casual sex or transfusing blood. The PPT ends with a request to adopt safe sexual practices and be united against HIV. The PPT slides contain information with pictures. Figure 22 below consolidates information presented on snips of the nine slides.

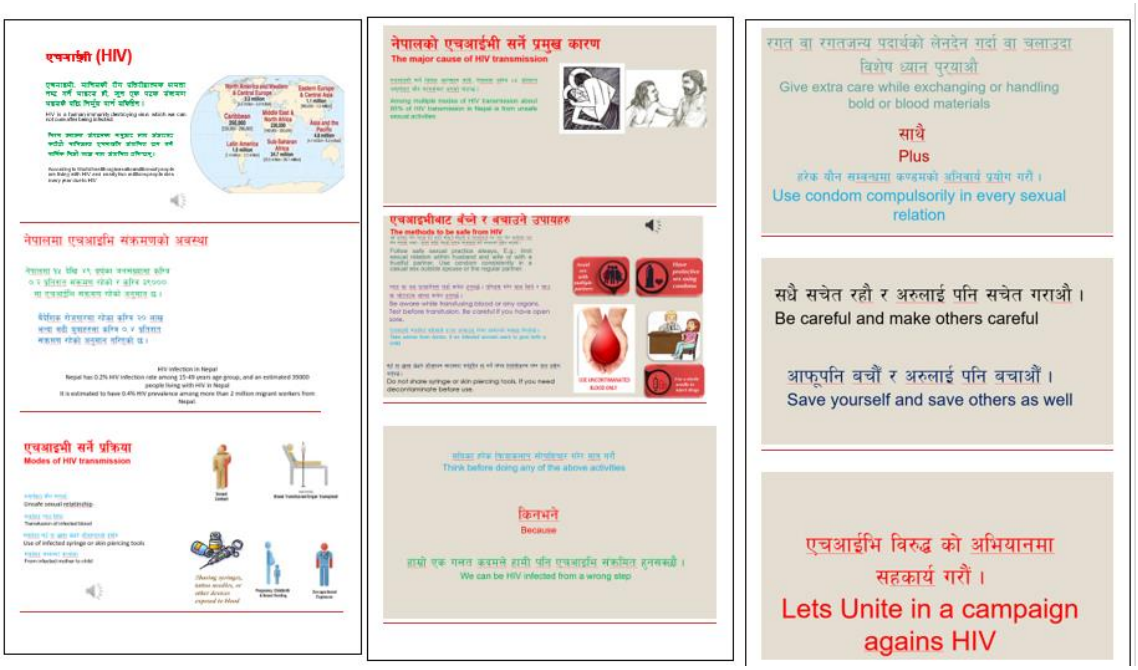

Figure 22 PPT 2 consolidated slide snips.

The PPT presents the messages in slides in Nepali language only, with pictures as shown above.

The co-researchers had limited time to complete the internet-based tool/health promotion messaging meant that the primary returned to New Zealand with the work the co-researchers had been able to complete.

6.5 Looking back to the PAR process and co-creation of HIV prevention

Reflection was an integral part of this participatory research and a step that was consistently practised throughout the PAR process to assist in the understanding and development of the co-researchers' knowledge, beliefs and skills around the context of HIV messaging and Nepalese migrant men (Kemmis et al., 2014; Loewenson et al., 2014; Wallerstein & Duran, 2006). This also enabled the co-researchers to share their knowledge with the group and be experts in their own lives.

Blake: Should I speak anyway, although I do not know?

Bruce: We will speak and discuss like today. We share what we know like we did today.

Seth: It comes automatically; we will speak what we know. Today, we were unknown about the research; however, we spoke something on each topic when he [Til, the primary researcher] gave some information. Like this, we will speak and work together in the next meeting.

The conversation above is the beauty of PAR that allowed co-researchers to assist each other in the research. Rather than waiting for my answer, Bruce and Seth's responses encouraged Blake to participate in the discussion. Further, it initiated the supportive and collaborative PAR process, which was the key to ensuring that the research was completed smoothly.

PAR advocates sharing power, roles, and responsibilities among co-researchers and deploys a democratic decision-making process. PAR also expects supportive and responsible co-researchers to provide the necessary time and effort to reflect on their acquired knowledge and use it to bring positive change to themselves and their communities. The Nepalese male migrant worker co-researchers were enthusiastic about their role and responsibilities. As the primary researcher, I sincerely appreciated the co-researchers' desire to support the work further even after completing the fieldwork.

Donald: How it becomes easier for you and us, let's plan like that. This research should be adequate for you and HIV prevention.

Blake: Later [after completion of fieldwork], we will be available over the phone and messenger group if you need anything more.

The crucial aspect of this participatory research was the friendly, intimate, and strongly supportive relationships between co-researchers and the primary researcher. The multiple group interactions allowed the participatory team to understand and support

each other, which can be difficult in other research methodologies. The research was a social process as it emphasised teamwork, sharing, caring, and encouraging each other to address an important community issue.

For the co-researchers, the research was a journey within themselves, through reflection on experiences and shared stories to understand HIV risk behaviours and contexts and be empowered with widely investigated or self-generated knowledge co-created action. Reflections within the group brought previous experiences to mind, and it helped them realise and evaluate their deeds and perceptions informed by current contexts and newly-acquired knowledge.

> Seth: We may not share our own experiences, but we may realise our risky behaviours. This encourages HIV tests and the use of safety measures in future.
>
> Bruce: When we know this [HIV] transmits while doing these things, we may realise that I also did that thing. We may be in tension if I am infected or not. We may be conscious and may inform our friends to be careful in future.

It is always challenging for a researcher to figure out whether the participants shared real-life experiences or information in detail or not with others in the group. This is more challenging when you someone for the first time. However, PAR approach creates informal and supporting space. Further, the participants as co-researchers engage multiple FGs in an informal atmosphere with each other. That gradually increased intimacy and trust to share more information that I could see during the FGs. For instance, at first, they were more nervous and formal; however, after FGD2, they started to behave as if they had been close friends for a long time. The statements from the FGD2 were important in terms of the co-researchers' reflections on their lives and their enthusiasm about the potential benefits of participating in the research. Many people, including us, may not consider and apply our knowledge and skills in many

cases. Although we know what we should not do – including, for instance, engaging in unprotected casual sex – we do not always act on that knowledge.

Additionally, the knowledge may fade over time, so we stop reflecting on potential risks or harm. This participatory research supported the co-researchers to be conscious of their perceptions and actions, which is a primary step in their empowerment. At the end of the fieldwork, Seth's reflection was encouraging and reflected the research achievement.

> Seth: May I say some more things? Now, it has been clear that this virus transmits blood-related things. What does this virus do? I want to make clear what I learned from the discussions. Generally, the HIV infection that we get is not a disease. HIV is a virus that makes our body unable to digest or resist very common diseases or infections. HIV infected people get the infection for a longer time and die from that. Therefore, it is a very dangerous virus that destroys our immunity and makes us prone to an infection or disease.

The reflection session allowed the co-researchers to revisit their experiences, participation, and co-creation contributions during the study and its significance. The co-researchers were optimistic about getting appropriate HIV prevention programs targeted to Nepalese male migrant workers. The co-researchers acknowledged the PAR methodology as a practical approach to support collaboration and bringing together marginalised people’s knowledge, skills, experiences, and voices to the mainstream. They enjoyed each stage, including the reflection session at the end.

Community participation and reflection on their contexts, co-design and co-creation of action were agreed upon as the most appropriate action for a community issue because it could be an effective process to bring change to the community. The research was an opportunity for the co-researchers to understand and evaluate their personal and community contexts, individual and community beliefs and behaviours, and use the knowledge and skills gained to address an important community issue.

Seth: We did so many things here. Now, we know that these sorts of situations might come to us or anyone who goes for migrant work. Many migrant workers may be unaware of these contexts. We can share them via the internet and create an online space to exchange in the community. We know we cannot make aware everyone, but we can initiate it. We aim to start awareness at a small level- to one, two, two, and eight.

The journey toward empowerment was from ignorance to knowledge and the validation and extension of their current knowledge. The significance of the PAR process and the co-creation of actions to bring about change to community perceptions and HIV risk behaviours were being reflected in Seth's statement.

Seth: I think we can change behaviour because there is a difference between ignorance and knowledge before and after knowing about something. For example, I did not know that HIV transmits from oral, and anal sex; a healthy-looking person can be HIV infected. After knowing that, I will be more careful. People may be careless as they do not know about HIV. When they know, it indeed hits on their mind. Most people know about it; however, they do not care much. When it comes in front of their eyes, again and again, it makes a difference. For example, we hear about road accidents; however, we may not care much about it. However, if we see an accident in front of us, it makes a difference, at least for some days. When they see about it frequently, they hesitate to go there or take safety measures. If he knows HIV transmits like this and it may cause these sorts of problems, people may be careful to avoid the infection.

The co-researchers discussed how internet-based HIV prevention strategies had significant potential in HIV prevention and health promotion in contexts where people may not be able to engage in face-to-face interventions. It is particularly useful to deliver health information to globally-dispersed migrant workers.

Donald: Today, there is a high development of media in Nepal and more in other countries. Like Nepal, other countries also have high development in Information technology. In this situation, we can make them aware and safe developing various internet-based strategies. For example, we cannot do much. However, I have 20 friends working abroad. They are working in very high-risk countries like Gulf countries. We can make an internet-based program targeting them. At present, everyone uses Facebook and YouTube abroad. We can share such awareness videos on YouTube and Facebook. We can share

awareness articles, interviews, and videos, creating a Facebook page. We can send messages/links to our friends. We can provide information and make them aware using the internet.

The co-researchers found the audio-visual materials available online can be more appropriate to reach more people and convey messages. They cited digital display boards in crucial places like airport transits, waiting rooms, major city centres, workplaces and accommodation spaces for migrant workers as an effective strategy for publicising HIV prevention measures. The co-researchers agreed that frequent reminders through online or digital displays could help to make people more conscious of their activities and behaviours and encourage them to reflect on the attendant risks and adopt safe practices.

Paul: One more thing, those going abroad have to wait place in the waiting room. You can see many advertisements broadcasting there on television. We can show videos on sex education, HIV, and the importance of safe sex and condom.

However, although the internet increased the accessibility of health promotion messages, the level of skills in the use of the internet by certain groups was perceived as a challenge to the successful implementation of technology-based HIV prevention measures. The co-researchers believed that many Nepalese migrant workers have limited access to the internet and little online information experience. For instance, according to the co-researchers, many labour camps have relatively limited internet access, and mobile phones are not permitted at work. I had also experienced slow internet many times when I talked with my brother in Qatar. Data packs are costly, and people generally use their data to maintain contact with family.

John: There are many Nepali who do not watch on the internet. Many of them lack the skills to use the internet; expensive and hard to afford with little pay.

Despite the challenge of accessing the internet and limited skills to do so, the co-researchers agreed that the internet offered the greatest potential for migrant workers to receive health messages. The co-researchers explored the most effective and accessible online platforms. They concluded that Facebook, Facebook pages, messenger groups and YouTube channels could be the ones to reach to Nepalese male migrant workers community. They initiated it by opening a Facebook Page and messenger group, inviting their friends to follow the page, and sharing health information, including HIV prevention, on the page. They believe that this will also help those who do not have access to the media platform as the co-workers who have access to the information or message will share it to others while having a chat in their free time. They noted that an internet-based strategy would benefit avid internet users directly. However, delivering online information that was genuinely engaging – exciting or funny – could encourage them to share with peers. Consequently, the co-researchers emphasised using Facebook to deliver information, as it is the most popular and most used space among Nepalese male migrant workers.

Seth: This is very beneficial for those who watch and take it positively.

Blake: If we find something funny or interesting, we share it with our friends. Therefore, there is a higher chance of sharing or discussing such videos with our group.

Cody: Cartoons and videos are more effective. We can forget what we read; however, we do not forget what we watch. The main thing is we easily remember which movement/step follows which. We can forget lines; we can remember summery from beginning to end.

The participatory team believed that the information presented engagingly or attractively would catch people's attention more quickly. They believed it would tempt the target group to watch the information and retain it in their memories for an extended period. This engagement factor may be one of the reasons many people like to watch movies and other videos and remember them for many years. Thus, co-researchers preferred to use videos over other forms of media such as pamphlets, posters, articles

or audios. The co-researchers believed that if a video could be created that presented a context with which the people viewing it could identify, it could take them to their past experiences and help them consider and assess their present contexts. An individual's literacy level and language competence heavily affect their ability to read and understand articles and pamphlets. However, a lack of literacy does not significantly impede an audience's capacity to understand information which requires only the ability and willingness to listen and watch.

> Blake: Pamphlets, posters, or articles in English are difficult to understand. Such materials in Nepali are also challenging to read and understand for illiterate or people with vision and reading difficulty. However, we can also understand video by watching its movements and gestures. If the video is in your language, reflecting your context, it touches your heart and remains in your memory for a more extended period.

Determining the most appropriate content and form of co-creation is crucial to influencing people. For instance, while it may be boring for some to read long articles or pamphlets, many people find watching videos more accessible. Thus, the co-researchers agreed that health promotion video messages that reflected the target community contexts might have a greater impact than others.

> Cody: If we upload a video on YouTube, people have to search and watch. But if you share on Facebook, people from your friend list see it. It pops on their friends' Facebook walls if they like or comment.
>
> Roy: This is correct. On Facebook, there is a higher chance of reaching more people.

The co-researchers agreed that a prominent online channel as a shared space for migrant workers to share what they found helpful to others could be an effective way to convey health promotion messages and techniques, including HIV prevention. Facebook was selected as an appropriate medium to reach the target audience.

Co-researchers' participation in this study allowed them to explore their current knowledge and broaden it through online search. As a result of this activity, co-researchers began to explore and discuss reproductive health, sexual behaviour and HIV for the first time. Having this safe space provided them with the opportunity to understand multiple aspects of HIV- modes of transmission, preventive measures, and the co-creation of HIV prevention information.

> Seth: In the previous meeting, we discussed problems. Now we discussed prevention. We learnt such things. It reminded some earlier known things and added some more.
>
> Cody: When you fear asking about anyone, HIV risk calculation can be supportive. We can prevent risk after knowing about it. Risk calculator, and HIV prevention messages are effective given that we cannot speak openly.

The co-researchers agreed that participating in the research study significantly reduced the embarrassment of discussing issues related to sex, reproductive health, and the practice of using condoms. Participation also helped them understand the risk of HIV and the importance of condoms as a prevention strategy. The new knowledge also encouraged them to buy condoms to protect themselves and their partners from possible HIV infection.

The co-researchers believed that they could positively change people’s perceptions of HIV and PLHIV. With limited knowledge about multiple modes of HIV transmission, most Nepalese people believe that HIV results from sexual promiscuity. Since a positive HIV status means that a person may be the subject of stigma, humiliation, discrimination, hatred, and even exclusion, the co-researchers agreed that an awareness-raising program was essential along with HIV prevention programs. The co-researchers recognised that they could contribute to raising HIV awareness and HIV prevention strategies among people within their networks.

Seth: if someone knew about HIV status, they might feel terrible. Therefore, we can create something that increases the confidence of infected people. We discussed many things about HIV, transmission and prevention. If we can put something that increases confidence among infected people, it will be more effective. We can help to change people's perception of PLHIV in our society.

Donald: We need to work to raise confidence. If infected people take medicine regularly, they can live longer than other ordinary people. If we can put such a message on the internet, it will be very effective in increasing confidence.

The participatory team realised that although there is no cure, new treatments mean that people can live with undetectable HIV viral loads and live to old age. Regular treatment and appropriate care can be effective for viral suppression so that they may not transmit HIV, even via unprotected sex. It is, however, important to recognise that the risk of acquiring other STIs remains. The participatory team emphasised the importance of delivering detailed information about HIV, targeting the general population to help mitigate the social stigma and discrimination toward PLHIV.

Paul: We could have searched photos online; however, they do not represent our originality, and they might have been used somewhere already. We drew and made based on our skills. Similarly, we could include someone with higher skills in our team. We tried our best to give simple messages based on our skills.

Originality and ownership are essential aspects of PAR research. The co-researchers may have limited technical knowledge. Hiring skilful people to assist them or convert co-researchers' concepts into higher quality co-creation could be helpful. However, PAR encourages and focuses on community-generated action using locally-available tools. The co-researchers recognised that they could use quality pictures and other online resources and hire someone to produce quality videos and other co-creations. However, this would lack the necessary ownership and originality in their co-creations. Therefore, they did what they could do for their community with their existing skills and

knowledge and the additional skills and knowledge acquired through the research study process.

6.6 Conclusion

Chapter six began with themes related to Nepalese male migrant workers' knowledge of and skills in using the internet and digital technology. It further presented themes related to PAR as an appropriate methodology for assisting the co-coresearchers in co-creating HIV prevention strategies and materials. Then, the chapter discussed the physical co-creations and messages contained in them. At the end of the study, the co-researchers reflected on PAR methodology, the significance of the co-creation and their experience in and of the study. In short, the chapter described how PAR methodology can assist in providing a space for issues in a marginalised community to be raised and discussed, and how members of such a community – in this case Nepalese male migrant workers – can contribute to addressing important community issues such as HIV.

Chapter Seven

Discussion of Research Findings and Conclusion

7.1 Introduction

Chapter seven presents the key findings of this participatory research into HIV prevention targeting migrant workers and other HIV risk communities. The chapter begins with an overview of the research and key findings, followed by the methodological implications, limitations, and recommendations for HIV prevention intervention for policymakers and future researchers. In the end, the chapter provides a concluding summary of this research.

7.2 Overview of the study

The research deployed Critical Theory underpinned by Alvin Tofler's Prosumer perspectives on the internet and digital technology space. The Participatory Action Research (PAR) methodology was employed to address the research question: *"How can Nepalese male migrant workers contribute to the co-creation of internet-based HIV prevention measures?* The following three sub-questions supported exploring in more depth the central above research question, process, and objectives:

1. What are the experiences of Nepalese male migrant workers living abroad regarding internet use and HIV risk behaviours?
2. What individual, social, and economic factors contribute to HIV risk behaviour among Nepalese male migrant workers?
3. How can Nepalese male migrant workers be empowered through the co-creation of internet-based HIV prevention intervention?

The research aimed to provide a space for marginalised Nepalese male migrant workers, placing their views, experiences, and skills at the centre. Using the purposive sampling technique, seven Nepalese male migrant workers were recruited as co-researchers. The co-researchers engaged in sharing personal experiences, experiences as migrant workers, and HIV risk contexts and behaviours. They also explored the internet and digital technology use and the co-creation of HIV prevention. The research deployed the PAR cycle of forming a research team, relation-building, reflections of experiences and stories, planning actions, co-creation of actions, reflections, and evaluation. PAR does not follow a rigid process. It overlaps and moves back and forth along a linear process. While going through all those steps, the participants, as co-researchers, and their views, opinion, skills and decisions were positioned at the centre.

The FGD reflected the importance of the PAR process when working towards co-designing a health promotion strategy/intervention for Nepali migrant men. FGD3 was the first step in group/team building, and this included sharing stories, jokes and a game. The FGD also included a sharing-based video recording and editing session. Understanding the co-researchers' knowledge of and skills in using smartphones and related applications assisted in setting the scene and planning further. The session was helpful in validating and extending current knowledge and skills in technology use. FGD4 focussed on understanding the context of HIV prevention in the co-researchers' lives. Co-researchers reflected on their lives as migrant workers and the HIV risks associated with that, which assisted in understanding the co-researchers' HIV risk behaviours, knowledge and attitudes towards HIV prevention. Through sharing their stories and experiences, the co-researchers became more aware of their multiple HIV risk behaviours, contexts, and underlying factors related to HIV risk contexts and behaviours.

During FGD3, the co-researchers began, through practice and reflection, to explore what knowledge of HIV prevention was available online and through what media. Online searching for information initiated the co-creation phase, providing knowledge both about HIV and also multiple internet-based HIV prevention strategies. The co-researchers shared their thoughts about potential forms of co-creation, discussed them as a group, and made decisions about what they thought would be the most appropriate forms of co-creation. The co-researchers' knowledge, skills, and co-creation effectiveness were crucial to making decisions about creating an online strategy for HIV prevention.

Practice and reflection were an integral part of FGD3. Reflection on the actions planned and taken is vital to assess progress and understand the appropriateness of an action. Reflection, planning, action, and further reflection are part of the PAR cycle deployed by the co-researchers in the study and often assisted in the co-researchers making better and more practical action plans. For example, the co-researchers initially planned to use various sexual behaviours to increase HIV risk or help HIV prevention in the video message and practice. However, following reflection and discussion, they agreed that it was inappropriate in the Nepalese context, even though it may be appropriate in other societies. They replaced the initial drawings (Figure 15 above) with drawings showing modes of HIV transmission and HIV risk contexts and associated preventive measures.

FGD6 continued the co-creation process of an HIV messaging strategy by sharing their knowledge and skills. The co-researchers created additional drawings, scripts for audio messages and PowerPoints (PPT). They also practised, reflected and acted further on the PPTs, video and audio messages.

FGD7 continued to focus on the PAR cycle of reflection, planning, action and further reflection of the co-creations. By FGD8, internet-based tools' co-creation was almost ready; the co-researchers mixed audio messages and drawings and developed a video

message that reflected the Nepalese male migrant workers' HIV risk behaviour, the context in both the home and destination countries and possible associated preventive measures. Reflection on the substance of the PPTs and content editing took place in the FGD8 to develop the final versions. FGD9 was the last session and focused on the final review and consequent amendments to the co-creations. This FGD also included a session for the co-researchers' reflections on their participation in the study, the developed messages, and the significance of the co-creation. The reflection also focused on how PAR encouraged the empowerment of the co-researchers through self-generated knowledge and co-creation.

The fieldwork for data collection was completed and collated in FGD9 with the co-researchers- generated HIV prevention information and internet-based tools. Then, the primary researcher returned to the University in New Zealand with the generated information and the co-creation. Thematic data analysis (as discussed in chapter 4) was deployed to study the data to inform multiple findings discussed in the following section.

7.3 Discussion of research findings

This section summarises and interprets the research findings in relation to the previous research and knowledge discussed in the literature review chapter three. The research methodology and outcomes are unique and significant in the Nepalese context as they put the marginalised Nepalese male migrant workers and their voices at the centre. The Nepalese male migrant workers community who are regarded as a cause of HIV transmission in Nepal studies their day to day life to understand their HIV risk behaviour and context and co-create an action which is a significant achievement of this study. It is hoped that this approach will contribute to the body of knowledge on

HIV prevention among Nepalese male migrant workers and other communities in Nepal and similar contexts at the global level.

The use of PAR methodology and the deployment of the focus group method to discuss sensitive, stigmatised health issues within the Nepalese socio-cultural context is an original achievement of this study. PAR methodology provided an opportunity for the co-researchers to reflect on their knowledge about and experiences of HIV risk contexts and behaviours. Few studies have focused on the migrant workers' life and their knowledge and experiences of HIV and HIV risk contexts and behaviours (Bam et al., 2014; Dahal et al., 2014; Joshi et al., 2012; Nepal, 2007). However, this study focused on the voices and experiences of a particular community to explore a deeper understanding of their contexts and perspectives and their involvement in finding solutions. The reflections on experiences and stories shared by the co-researchers empowered each other to understand the underlying causes of low condom use among Nepalese male migrant workers.

Further, their participation enabled them to co-create HIV prevention strategies and audience-appropriate messages. The Critical Theory approach and PAR methodology were innovative approaches to HIV prevention in Nepal. It delivered a message to the Government and institutions working on HIV that marginalised community members can become valuable partners and that passive consumers can become imaginative, thoughtful co-creators. The research also contributed to the development of Nepalese male migrant workers' co-designed videos and two PPTs for HIV prevention appropriate to their contexts.

The research also provided two significant inputs in Nepal's health promotion and HIV prevention. First, providing a space to share thoughts and experiences of a community issue and collaborate with target communities such as Nepalese male migrant workers to provide insight into their unique lifestyles and needs. The co-researchers' observations and reflections of their day-to-day experiences at home and in destination

countries provided them with a deeper understanding of their lives and communities and how their contexts impacted their lives. This was a significant achievement of this research and assisted in planning actions to move forward. Second, providing a space and the necessary assistance enables marginalised communities, such as Nepalese male migrant workers, to be empowered with self-generated knowledge, skills, and actions. The actions co-created by the community members represented their community contexts. They provided the most appropriate solution to the complex socio-cultural and legal context of the society and community they are experiencing in their home country and overseas. It also enabled the co-researchers to develop internet-based HIV prevention messages appropriate to their socio-cultural and other contexts.

The research is also original because Nepalese migrant men contributed to the entire research process, including the decision to participate, choice of time, venue, tools and forms for co-creation; review and reflection of the process; and co-creation of messages and internet-based tools. It challenged the traditional notions of research by empowering the marginalised consumer to become the prosumer, or co-creator, of HIV prevention for their community.

The study supported earlier research showing that few Nepali migrant workers understood the risks and causes of HIV infection in their destination countries. Joshi et al. (2014) found that only about one-fifth (20%) of Nepalese migrant workers receive pre-departure training in Nepal before working abroad. The co-researchers in this study also lacked pre-departure training or orientation. The lack of information about the destination country, society, and work resulted in the absence of detailed knowledge about essential health information including the prevalence of HIV in the community generally and among local sex workers and how to access condoms in the destination countries.

Previous researchers have found significant rates of casual sex and inconsistent or no condom use among Nepalese male migrant workers (Bam et al., 2013; Dahal et al.,

2014; Joshi et al., 2014). This study contributed to a more nuanced understanding of Nepalese male migrant workers' knowledge about HIV, HIV risk behaviours and contexts in home and destination countries, and possible causes of inconsistent condom use among Nepalese migrant workers. The study provided insight into how socio-cultural and legal factors intended to prevent casual sex practices and HIV transmission in fact contribute to unprotected sex in the home and destination countries. The impacts of society, culture, and laws on the low access to and use of condoms were identified, which had not been explored in detail in earlier studies. The study highlighted how demographic factors such as age and marital status, individual factors such as education or awareness about HIV and HIV prevention, and perceptions about condom use and the effect on sexual pleasure also impacted inconsistent condom use among Nepalese male migrant workers. This supports earlier studies that found that although condoms are promoted as protecting people against HIV during sex, there is substantial evidence that they are often not used properly.

There are many barriers to condom use (Sanders et al., 2012). Cultural and social norms, and legal provisions regarding sex, impact individual factors (Neupane et al., 2012; Khanal & Karkee, 2012; Wasti et al., 2009). They adversely affect an individual's rights to know and adopt safe sex practices and assist in generating misconceptions among young adults both in Nepal and other countries. The policies and rules of many destination countries and companies are intended to discourage casual sex by declaring it illegal and liable for punishment. This was overlooked by many earlier researchers (Dahal et al., 2014; Joshi et al., 2014). However, the same research also found that the policies and rules also contributed to the prevalence of unprotected sex since the policies and rules cannot control human sexual needs and desires. This can be more challenging with long separations from a spouse (Dahal et al., 2014).

This research study uncovered multiple challenges for both the prosumption of HIV prevention information services and access and use of the Internet in Nepal and most

destination countries. The findings from this study proposed that the boundary between producer and consumer of HIV prevention is a challenge to safe behaviours and should be reconsidered to promote Nepalese male migrant workers' control over their own sexual lives and HIV prevention more generally. Further, current HIV prevention strategies and programs in Nepal and in destination countries lack acknowledgement of Nepalese male migrant workers' contexts and needs, and fail to address the social, cultural, and legal factors related to HIV-prevention practices in Nepal. Consequently, the research findings take a strong position on the positive community outcomes of incorporating Nepalese male migrant workers in HIV prevention strategies, such as by creating a safe space for them to voice their concerns and contribute to actions for a solution by participating in the co-design and implementation of HIV preventions. The methodology deployed in this study provided an opportunity to explore and understand existing HIV prevention strategies and their lack of inclusion in migrant workers' contexts. This further transformed the role of the individual and group from being a mere consumer to an active partnership, working together to address their issue. The self-reflection aspects of the PAR strategy empowered the co-researchers with self-generated knowledge and actions that boosted collaboration and the confidence to address similar community issues in the future.

The Constitution of Nepal guarantees universal access to essential health services as a fundamental right. However, the reality is that access to high-quality services is a privilege since much Nepalese living in remote areas or economically weak contexts (Sharma et al., 2018; Trägård & Shrestha, 2010). While there are many HIV campaigns conducted by international agencies, governments, and NGOs in Nepal, this study has demonstrated that Nepalese male migrant workers' lives are unique and vary across different countries and socio-cultural and workplace contexts. The co-researchers' reflections of their experiences and behaviours concerning migrant work, sexual relationships, condom use, HIV prevention and internet use were the foundation for the research to understand and co-create action. It would be almost impossible to design

an effective co-creation for the co-researchers without understanding their local contexts as Nepalese male migrant workers, especially for an outsider.

Previous researchers have cited loneliness, alcohol consumption, and peer influence as major factors contributing to the high rate of unprotected casual sex (Khanal & Karkee, 2013; Bam et al., 2012; Mukharjee & Mail, 2014). Perhaps they were highlighting extrinsic factors impacting HIV prevention. However, this study found that intrinsic factors and individual perceptions about condoms and their effect on sexual pleasure were dominant in the prevalence of casual unprotected sex. Further, this study also highlighted social, cultural, and legal factors that contribute to unprotected sex, limiting access to HIV-prevention information and the availability and ease of purchasing condoms.

Many researchers cited gaps in health promotion and HIV-prevention interventions in Nepal (T. Paudel et al., 2016; Simkhada, Regmi, Van Teijlingen, & Aryal, 2017). The study found that Nepal's available HIV prevention strategies were inappropriate because access was limited to within the country, using local channels. On the other hand, for migrant workers in destination countries, their single status low competency in the local language, and local community social norms, values, and laws also hindered Nepalese male migrant workers' access to HIV prevention information and services. As well, most information available online is in English or a language other than the Nepali language. This was a significant disadvantage to Nepalese male migrant workers since many had low language skills and limited competency in technology.

The concept of prosumerism in the digital and online space for HIV prevention among Nepalese male migrant workers is an important contribution to this study. Tofler's prosumer theory perceives every individual as a prosumer, although modernisation and industrialisation theoretically divide them into prosumers or consumers (Toffler, 1980; Bhalla, 2011). However, Bhalla (2011) argues that there is no pure production or pure

consumption in any sectors, including health promotion and HIV prevention. However, the distinction between producers and consumers remains dominant in almost every sector, including HIV-prevention interventions. Current HIV-prevention interventions in Nepal and many destination countries adopt a traditional approach. Such interventions fail to include community voices and the unique characteristics and needs of many communities, including Nepalese male migrant workers, who are hard to access due to the more extended periods of absence in the country. Prosumerism as a concept has been advanced with the development of internet based technologies. The internet has created a space for value co-creation (Ritzer et al., 2012). This research study deployed a discussion of prosumerism, which is in its early stage of development in health,to give a new dimension to HIV-prevention strategies for Nepalese male migrant workers.

The National Health Policy 1991 Nepal aims to promote healthy citizens by increasing access to health education and health promotion, encouraging them to utilise the best health services for productive, happy, and longer lives (Karki, 2018). Earlier researchers had criticised policy-driven interventions for adopting a purely “medical” approach rather than promoting health around collaboration and empowerment through information and education (Sharma et al., 2015). The research identified that this gap contributed to the failure to appropriately understand, include, and address target community issues. Additionally, health promotion and HIV prevention interventions have largely failed so far to benefit from the opportunities in the technology-generated space of the 21st century. There is a digital divide among people within a region, country, society, and community. Some people cannot afford them, and others who can afford them have limited knowledge and skills (Ramsetty & Adams, 2020). However, this study aimed to challenge current health promotion norms by proposing that there is great potential in technology. It worked with vulnerable communities such as Nepalese male migrant workers, deploying an empowerment-based participatory approach and placing their life, health, experience, skills, and action at the centre.

The study found that individual factors such as age and marital status are key influences impacting access to condoms. Marital status and age are essential factors for engaging in sexual relationships in many countries, including Nepal. However, the reality is that many contextual factors, including socio-culture and economy and laws, spark an increasing vulnerability to HIV. For instance, their status as migrant workers in the destination countries adversely impacts their access to necessary information and facilities. On the other hand, the improved economic status of returnee migrant workers attracts local women and sex workers. This increases casual sex behaviours that are often unprotected because the migrant workers have limited knowledge of the risk of contracting HIV and limited access to the necessary preventive measures. The religious and cultural values in Nepalese society, and many destination countries, reduce their opportunity to access the knowledge that may mean they observe safer sex practices. All of these contexts and issues contribute to the situation where migrant workers feel unable to share their experiences and thus receive support either at home or in many destination countries.

Cultural factors are complex. They shape people's identities, influence individuals' and communities' beliefs and health behaviours, and search for preventive and curative services (Neupane, Khanal, Sharma, & Aro, 2012; Wasti et al., 2011). Nepalese male migrant workers influenced by societal norms hesitated to seek HIV prevention strategies or act on them because of the possible stigma and discrimination. During the data analysis process in this study, the co-researchers never used direct language to denote sex, condoms, prostitution, brothels, or other terms associated with sexual practices. Instead, they used euphemisms such as "this thing", "that thing" for sex, "cap" or "cover" for a condom, "the place" or "adda" (Nepalese term to the office) for brothels, or the place where sex work is available. The difficulty for these Nepalese male migrant workers to talk about or even search for information at home or in the destination country clearly expresses their societal norms. Thus, the research experience and resulting data reinforced the need to focus on changing people's

perceptions about sex, HIV, and sexual and reproductive health to be more comfortable discussing these matters and searching for HIV related information and prevention tools.

The Nepalese male migrant workers who spend most of their time abroad are a vulnerable minority of the population in destination countries. Many of them are deprived of space to express themselves and exchange their experiences as migrant workers and returnee migrants in Nepal. The migrant workers who became co-researchers in this study had worked in multiple countries and consequently had varied experiences and perspectives about both host and home countries regarding freedom to engage in sexual behaviour. Some of them experienced more freedom abroad, whereas others found greater freedom in Nepal with a new economic status which allowed them to spend money at a level which attracted local women. Both at home and abroad, perceptions and realities of greater "freedom" increased the opportunities for casual sex and the acquisition of HIV.

An earlier study (Joshi et al., 2014) cited that about 91% of its participants were aware of HIV transmission through sexual behaviour; 95% were aware of the risks of sexual relations without a condom, and 93% aware that sexual relations with multiple partners could cause an increased risk of HIV infection. Similar statistics were cited by other researchers (Dahal et al., 2014; Khanal & Karkee, 2012). However, this level of awareness was not present among the co-researchers in this study. These co-researchers had insufficient knowledge, or even misinformation, about HIV transmission; this had not been identified in these earlier studies. For instance, in this research study, the co-researchers initially had the belief that HIV does not transmit through oral and anal sex since there is no contact with blood or blood-related materials in those practices. The co-researchers also believed that neat, clean and healthy-looking partners would not be HIV positive, a point also identified by other researchers (Khanal & Karkee, 2012; Mukharjee && Mail, 2014; Bam et al., 2013). The

co-researchers also believed that the migrant work promoted by the Nepal Government's policy and programmes and the related, prolonged family separation were the root cause of engagement in casual sex. Dahal et al. (2014) found that the longer migrant workers remained abroad, separated from a spouse, the greater the chance and number of casual sexual contacts. In this study, it was perceived by the co-researchers that family separation contributing to casual sexual activity was a key contributor to increased HIV vulnerability for migrant workers and their spouses, which needed to be addressed at the government and policy level.

Sexual pleasure, even in a consensual relationship, was identified as a dominant risk factor for HIV and other STI transmissions (Boyce et al., 2006). This finding is also reflected in the present study's finding that, for the co-researchers, satisfying their sexual needs was an essential component of their mental wellbeing and demanded similar consideration to that of the importance of protection from disease. As cited by Boyce et al., (2006), the finding suggests that positive approaches toward sexual practices have an important place in HIV prevention.

The role of the internet and digital technology is crucial to health promotion in the 21st century, being a significant source of information, entertainment, and partnership for health and wellbeing for billions of users (Kristina et al., 2019). These technologies have increased the speed and ease of access to news and information and more opportunities to influence and collaborate with people worldwide for a common interest. One positive use of the internet is to guide users' behaviour in the digital environment through the co-creation of specific content (Schneider et al., 2020; Weinmann et al., 2016). However, the study found that HIV prevention strategies in Nepal make limited use of available technologies.

A technology-generated space could be a major channel to reach millions of globally dispersed Nepalese male migrant workers with important health messages. Expanding the technological knowledge and skills among Nepalese male migrant workers and

then using those technologies to improve HIV prevention could be an appropriate approach for the workers' contexts. The success of output from an internet-based HIV prevention approach depends on the relevance of the materials to the community it seeks to reach. For example, this study found that the available materials did not reflect their contexts and were challenging to understand since they were not in the Nepali language. The question facing materials developers to address HIV messaging to Nepalese male migrant workers living and working in more than 132 countries is how well those materials reflect and address their lives and needs (MOLESS, 2020).

Internet and digital technologies are the dominating means of communication and information globally. Nepal telecommunication reported that approximately 91% of Nepalese had internet access by June 2021 (NTA, 2021). The co-researchers also described themselves as avid internet and digital technology users. Therefore, the use of internet-based HIV prevention will be crucial to reach out to hard-to-reach communities such as globally dispersed Nepalese male migrant workers and their families. Of the available online technologies, it was agreed by the social researchers that a social media application such as Facebook was the most likely to reach many Nepalese male migrant workers. The frequent display of informative videos and other visual and audio information on the Facebook wall was identified as a suitable strategy to make people recognise their perceptions, behaviours and possible misconceptions. The co-researchers also agreed that advertisement through YouTube, chatting applications, and hoarding boards at crucial locations such as parks, city centres, waiting rooms at airports or other public transport stations may grab their attention and make them reflect on their sexual behaviours, including recent or upcoming interactions with potential sexual partners. They noted that although the internet and digital technology generated space which Nepalese male migrant workers primarily used for communication and entertainment and to forge new social and sexual relationships, it could also be used effectively to deliver crucial health messages, including those for HIV prevention.

The study confirmed that multiple factors such as psychological, sociocultural, political, and policy-driven elements are barriers to health promotion and HIV prevention in Nepal. Raingruber (2014) cited that a comprehensive approach targeting these aspects was a critically important component of an effective health promotion strategy. The co-researchers agreed that the gap in the HIV prevention interventions in Nepal was a significant factor in HIV prevalence and noted that the absence of relevant and targeted responses to the barriers needed to be appropriately addressed to improve HIV prevention.

Dissemination in this PAR study occurred through the efforts of the co-researchers who took the information and skills back to their community. The co-researchers decided to share what they knew or learnedwith their co-workers or peers' groups. During the -up group calls in the messenger group created during the fieldwork, they shared that they are more confident and comfortable chatting about sexual behaviour, HIV, and condom, which they have been doing on different occasions. Further, the co-researchers opened a Facebook page to share important health messages, including HIV prevention. They sent invitations to their Facebook friends to follow the page. Similar to other Participatory research, the study aimed to increase awareness and control of the community members' own sexual behaviour and HIV risk, followed by the co-researchers, then encouraged their nears ones. They planned during the study to share the research findings and contributeto HIV prevention in a geometric series of 1, 2, 4, 8, 16…. The co-researchers shared that they are now adopting safe sexual practices and encouraging their co-workers or peers to do so, which is an achievement for the study.

7.4 Limitations of the study

The student research was designed with a small sample size using a participatory and action-oriented methodology to provide a space for Nepalese male migrant worker co-researchers to be empowered with self-generated knowledge, skills and action. The research recruited seven returnee male migrant workers as co-researchers which is a very small percentage of the target population of Nepalese male migrant workers. However, it should be noted that this study deployed the PAR methodology and Focus Group Discussion (FGD) method, which recommends participation by a small number of co-researchers. PAR aims to build mutual relationships and generate knowledge and actions as the goal of the research (Kemmis et al., 2014; Lowenson et al., 2014; Olshansky et al., 2005).

FGD is a social interaction process including group interviews or activities and information-gathering or data generation (MacDonald, 2012). The ideal number of participants in FGs in participatory research settings is 5-8 (Krueger & Casey, 2002), which is crucial in providing an equal space, opportunities, and support, especially to contradictory or minority voices (MacDonald, 2012). Increasing the number of participants may lead to issues in the provision of sufficient intellectual and emotional space for contributors and difficulties in managing discussions, let alone reaching consensus, from a starting point of opposing ideas. Establishing the co-researcher team with the seven participants using PAR and FDG methodologies in the nine focus group discussions, meant that each member had the opportunity to contribute to multiple sessions that included relationship building, information and data generation, co-creation, and immediate and ongoing reflections on the generated data. There could be more than a focus group that could not happen due to multiple factors such as time, cost, and participants availability.

PAR emphasises providing a space for powerless or marginalised peoples' voices and conveying their experiences to respond appropriately to shared community issues. PAR findings represent the authenticity, credibility and reflection of community voices and must be acknowledged at their level rather than generalising the research findings (Creswell & Miller, 2000). The nature of the study meant that it lacked the larger voice of the broader community. However, this was powerfully offset because it provided a far sharper and deeper understanding of Nepalese male migrant workers' lives at home and abroad in terms of HIV prevention.

Approximately 30% of households in Nepal have at least one migrant worker (CBS, 2012; Bhattarai et al., 2020), and nearly 50% of households in Nepal have at least a migrant returnee in Nepal (WHO, 2012). However, finding participants interested in and appropriate for this research project was challenging. Of fifteen participants at FGD 1 and FGD 2 (two information meetings), only eight agreed to contribute, and one withdrew after FGD4. Also, the co-researcher group represented the voices of Nepalese male migrant workers who worked or are working in a range of destination countries.

The study focused on the co-researchers' day-to-day activities, eliciting basic information and modest co-creations in an informal setting. PAR is a democratic process where the research participants are empowered to take charge of research methods, including decisions about time, place, and venue. The role of the primary researcher using this methodology is to facilitate them. The small participatory team deployed a cycle of reflection, planning, action and further reflection in very informal environments such as a peers' gathering or a coffee talk. However, this does not adversely impact the research findings, which were crucial to understanding the knowledge levels, available skills, and developing ideas. The video and PPTs, the research outputs, examined and represented the Nepalese male migrant co-workers' voices and needs. Time, budget and other limitations determined that only a single

PAR spiral could be completed in this doctoral research. Multi-level action and reflection with multiple focus groups of a larger sample population of Nepalese male migrant workers in different countries or occupations may provide a deeper understanding before implementing to broader target populations.

PAR principles emphasise participation at the community level to bring change, rather than imposing the perception and guidance of institutions or outsiders (Baum et al., 2006). Despite the time and budget pressure, the detailed parameters of the study were considered through the ethical approval process of both the AUT Ethical Committee and the Nepal Health Research Council (NHRC). As discussed in section 4.7.1, the primary researcher consulted with scholars working at multiple levels on HIV in the region and received their perceptions, advice, and feedback. However, the co-researchers' decisions, knowledge and skills remained firmly at the centre of this participatory research. The co-researcher may have limited knowledge or skills, and taking help from an outside stakeholder or scholar may help to co-create more effective action, which could not happen as PAR emphasises on authenticity and community ownership than the higher quality in co-creation or action

Some may question the efficacy of co-researchers' full and autonomous participation in HIV research by deploying the focus group discussion method. This is a challenge that most research faces regardless of the topic, whether the methodology is qualitative or quantitative, or whether the data is gathered by observation, participation or questionnaire survey. One risk is that participants may filter the issues or experiences or discussions they wish to share during the research. There also may be dominance by one or more participants in group discussions. As a participatory researcher, it was crucial to ensure the co-researchers' full participation, safeguarding their rights, privacy and opportunity to share or engage in every activity. The information provided at the beginning of co-researcher recruitment and the written consent process were targeted to protect each participant's rights, privacy, and adoption of democratic practices.

Additionally, the primary researcher and the facilitator encouraged co-researchers to take turns in all activities and protect each other's rights and privacy. I upheld the protection of their privacy even in research findings and publications and adopted an appropriate PAR strategy to develop a trustful and secure environment.

I was also mindful of limitations related to my subjectivity and influence in the study as the primary researcher. As a family member of a migrant worker from the Kaski district, I had my knowledge, perceptions, and understandings of migrant work, workers' lives, society, culture, and laws. I was careful to remain neutral in the FGDs, limiting myself to posing questions to the participants. This also promoted others' voices so that I did not dominate the conversation. I was aware of the potential stigma toward co-researchers participating in research about HIV-related sexual practices in Nepal. I tried to guide the research process in the most ethically-appropriate way to protect the co-researchers. However, the co-researchers were also informed adults with their understandings of their society and how to mitigate potential risks while participating in the research. A facilitator was recruited from within the participatory team to conduct the FGDs following PAR principles in a co-researchers-safe and friendly space to assure confidentiality and privacy.

Every research study and project, including government or INGO funded and supported multi-year projects, has limitations, and this doctoral research was no exception in that regard. However, the research ensured and obtained and practised an ethically-approved process. Every detail of the proposed study, including its possible risks was discussed with potential participants, and written consent was obtained from those who signed on as co-researchers. Further, the primary researcher consulted with stakeholders and appropriate human resources from NGOs working in the area and collaboratively worked with doctoral supervisors with decades of experience on the research topic and the selected methodology in similar contexts. Further, as a PAR student researcher and member of the co-researchers' community,

with the consequent cultural, social, legal and linguistic competencies and understandings, my focus was to ensure rigour throughout the research process and presentation of its findings.

7.5 Methodological implications

The primary objectives of this research were to understand the underlying reasons for high HIV-risk sexual behaviours among Nepalese male migrant workers from their perspective and to co-create internet-based HIV prevention methods. Thus, as the primary researcher, I chose a Critical Theory perspective that challenges the current situation and strives for change informed by the findings of the completed research study. Critical Theory is historically associated with Horkheimer, Adorno and Marcuse from Frankfurt School (Asghar, 2013). Horkheimer, a co-founder of Critical Theory, defined it as seeking "human emancipation to liberate human beings from circumstances that enslave them" (Horkheimer, 1982, pg. 244). Smith (1993, p. 77) cited Critical Theory as a theoretical perspective "designed not just to explain reality but to change it". In contrast to other theories, Critical Theory challenges power relations in society, which may be in race, class, gender, economy, and other factors, and strives for a balanced and democratic society (Asghar, 2013). Thus, as research-based on Critical Theory, this study provided a space for the co-researchers to explore and challenge current social realities on HIV prevention among Nepalese male migrant workers and identify and propose action(s) for improvements (Silverman, 2013).

Under the broad spectrum of Critical Theory, the study of Alvin Toffler's prosumers perspective on the internet and digital technology space was deployed in the co-creation of HIV prevention in this study. Toffler's prosumerism assumes that human beings are prosumers by nature and that there is no pure separated production or consumption process (Toffler, 1980; Ritzer, 2012). However, after industrialisation and

modernisation, the socio-cultural and economic development divided society into two separate entities - producer and consumer (Toffler, 1980). This has been found in many areas, including health promotion and HIV prevention globally, including in Nepal is typically an expert-driven, top-down activity. Thus, the Critical Theory underpinning the prosumer perspective here focuses on empowering marginalised Nepalese migrant workers to be the prosumers of HIV prevention rather than passive consumers. As prosumers of health promotion and HIV prevention, the community members will be able to express their voices and needs, encompass them at the policy level and co-create thecommunity-owned interventions fit to address the community contexts and needs.

Critical Theory and Prosumerism justified the selection of Participatory Action Research methodology in this study. The principles of PAR methodology were deployed in the research through the collaboration with the marginalised Nepalese male migrant worker community, bringing their voices into the space and their actions for change. The research provided space for Nepalese male migrant workers to express their day-to-day experiences as the relevant sources of knowledge to respond to the HIV epidemic in the community (Cahill, 2007). PAR methodology and context-based PAR tools assisted in exploring Nepalese male migrant worker co-researchers' knowledge and experience in HIV risk behaviours, HIV prevention and digital technology use. The study placed the co-researchers' participation, voices, skills, and actions at its centre, as PAR accepts that community members are the experts on their issues (Kesby et al., 2007).

The PAR spiral of observation, reflection, planning, and action was a crucial strategy for the prosumption of HIV prevention in the study (Kemmis et al., 2014). The informal, participant-centred and collaborative space generated in the study assisted the Nepalese male migrant worker co-researchers in extending their knowledge about and skills in internet use and internet-based HIV prevention. Further, it provided an

opportunity for the co-researchers to share concepts, discuss ideas, plan activities, and co-create HIV-prevention messages targeting Nepalese male migrant workers. The PAR methodology also provided the co-researchers with insight into the current HIV-prevention interventions and identified the gaps. In turn, this led to a deep understanding of the significance of participant-centred space to promote the consideration of the contexts for co-creation of actions appropriate to the community's perspectives and needs. As a PAR researcher this was my first such study and the learning curve was steep, providing a basis for further development in my future PAR practice.

7.6 Recommendations of this study

The research findings provide insights into the multiple gaps present at different levels of HIV prevention in Nepal, especially regarding Nepalese male migrant workers. The study has detailed findings to recommend to the Nepalese Government and its policymakers, NGOs working on HIV, and future researchers into HIV prevention.

7.6.1 Recommendations for the Government and policymakers

Nepal has consolidated the National Guidelines on Strategic Information of HIV Response in Nepal 2017 (NCASC, 2017). However, the Guidelines did not consider the use of the internet and digital technologies to address HIV prevention in Nepal. The lack of vision and relevant guidelines about the internet and digital technology-based HIV prevention is a challenge for stakeholders working in the sector. Earlier researchers cited that only 20% of Nepalese male migrant workers have any kind of pre-departure orientation (Joshi et al., 2014). The research also found that Nepalese migrant workers lack important information regarding their work, workplace and surroundings, and relevant laws regarding migrant workers and sexual behaviours. Consequently, it is recommended that the Nepalese Government commits to a pre-

departure orientation advice and training process, including work-related basic information and skills, to help migrant workers start their careers confidently from the first day at work in a destination country. Further, basic orientation in using the internet and smartphones to access critical information and setting up important health applications, authoritative news channels, and emergency contacts would assist migrant workers to feel more secure and access current, essential health and other useful information.

The study confirmed that social-cultural norms and laws about premarital and extramarital sex increased the incidence of engaging in unprotected sex and vulnerability to HIV among young adults and unmarried people. Programs to reform social-cultural perceptions and behaviours are vital for HIV prevention. For instance, the traditional concept that healthy people were not perceptible to the risk of HIV must be publicly eschewed as false. Policies and programs designed to raise awareness would be helpful in changing people's perceptions about sex, condom use and potential HIV risk, even with seemingly healthy-looking partners. Additionally, while the inclusion of reproductive health and HIV information in the school curriculum would likely increase awareness in the coming generations, this study highlights that simply incorporating relevant, current information into the curriculum may not be enough to encourage a change in behaviours. Successful implementation of change would require a reorientation of teachers and the availability of necessary materials for them to be comfortable discussing sexual and reproductive health and the information necessary for HIV prevention in young adults.

7.6.2 Recommendation for NGOs working on HIV

There is a national-to-local level structure working to address the HIV epidemic in Nepal that includes government institutions and hundreds of NGOs. However, national records and earlier studies cited them as being targeted almost exclusively at key at-risk populations like MSM, MSW, TG, FSW, and IDUs within Nepal and in the

destination countries. Migrant workers, perceived as a major channel for the HIV epidemic both globally and in Nepal, have been studied in comparison with the general population and have insufficient knowledge about HIV and HIV prevention. National records cited access to information and HIV testing as very low among Nepalese male migrant workers (NCASC, 2020). Therefore, it is recommended that HIV prevention programs continue to focus on general populations since they are potential migrant workers and their spouses, as well as sex workers or their clients, MSMs, and IDUs, to halt the transmission of HIV and achieve SGDs goal by 2030.

During this research, it was difficult for the co-researchers to discuss sex, condoms and HIV openly. Regular programs on those topics targeting the public would provide opportunities for knowledge to be more readily available, especially among younger people. This could also gradually reduce hesitation and embarrassment when the topics are discussed. Further, inadequate and incorrect information, and fear in searching for HIV prevention information and tools, predominates in Nepalese society. For this reason, the more public discussion recommended could extend knowledge and open up possibilities for the adoption of HIV prevention.

The findings of this study also lead to a recommendation for collaboration with local people before conducting an HIV prevention campaign. Such initiatives will help those proposing campaigns understand the targeted community's existing perceptions and needs and co-design and implement programs in the most appropriate way for the community. Where the community owns the program and its achievements, there is encouragement for their participation in such programs. This has potential as a great initiative, making the community responsible and supporting bringing positive change in the society.

The study recommends a qualitative and participatory approach to understand social contexts and needs and ways to bring changes from the community members themselves, rather than to continue with 'outsiders' knowledge or perceptions being

dominant and a lack of innovation in terms of technology and health promotion in the 21st century. PAR principles are effective in addressing community issues through community collaboration. The research completed a PAR spiral of observation, reflection, planning, and action. However, it could not be extended through multiple groups and rounds because of time, budget, and other limitations. A multiple-level PAR cycle across many communities or groups is likely to be more costly and time-consuming. However, it could provide stronger and more detailed insights into community contexts and needs and help create a broad-based task force to address HIV and other community issues using the participatory approach. As understood by the study's co-researchers, PAR is a process of expanding knowledge and skills in a geometric sequence of 1, 2, 4, 8, 16 and so on. Although this study benefits a comparatively small number of community members, it will benefit them throughout their lives. It may assist in transferring the knowledge and skills gained to others through the geometric series.

7.6.3 Recommendations for future researchers

This research was conducted with limited time and resources. The study could include only one group of seven community members as co-researchers. However, the study provided a profound insight into their lives and experiences at home and in destination countries. It further explored and confirmed the multiple factors contributing to the current HIV prevention issues that both are obvious and which have been cited in earlier research, along with other underlying factors. I would advocate for more researchers to undertake further, more expanded, and multiple cycles of PAR in relation to HIV prevention and across multiple locations. This would provide even more detailed knowledge of the contexts, challenges and opportunities to halt HIV.

Additional co-creation of HIV-prevention messages would have added to this study. However, as a self-funded student researcher with limited time and resources, working with returnee migrant worker co-researchers who spent a short time at home,

anextension of fieldwork time was impossible. Furthermore, such digital cocreation is likely to require partnership with other disciplines specialising in communications and social media. Despite having a busy schedule with families, relatives, and household work, the co-researchers' dedication was both admirable and highly appreciated by me. This study included participants from major destination countries. The research fieldwork and data collection required to expand the research into other destination countries will be costly and time-consuming. However, it will provide multiple voices from each destination country to understand and explain their specific contexts and to co-design action accordingly. Research with the necessary financial, technical, and human resources in major destination countries is recommended to better understand how to ameliorate and respond to the HIV epidemic among Nepalese migrant workers with an emphasis on a digital informed future health promotion.

The study experimented with PAR methodology and focus group discussion about HIV transmission through sexual relations in Nepal and destination countries. It was an innovative approach in the Nepalese context. The successful completion of this study indicated the significance and efficacy of PAR methodology and FGDs to understand community perceptions and experiences leading to collaborative action, even on a highly stigmatised issue in Nepal. I would recommend the PAR approach for studying any health research, including HIV, to gain a deeper understanding of the target community contexts and needs and co-design a sustainable action to bring change.

7.7 Research conclusion

The finding of this research provides two major insights. First, providing a space and collaboration with target communities such as Nepalese male migrant workers provide insight into their unique lifestyle and needs. Second, marginalised and vulnerable communities such as Nepalese male migrant workers can be empowered by providing

space and necessary assistance to co-create internet-based HIV prevention fits to their socio-cultural and other contexts. Further, careful examination of people's day to day activities provides a deeper understanding of their life and various factors related to them. The addition of information or knowledge on individual, demographic, socio-cultural, economic, legal and other contextual factors related to the HIV epidemic that was overlooked or missed earlier was the actual contribution of this study to the body of HIV prevention knowledge.

The lives of Nepalese male migrant workers are unique, beyond understanding the general Nepalese population or any outsider. Unlike previous research, which repeatedly cited loneliness, alcohol consumption and peer influence as the major factors for unprotected casual sex, this study's findings indicate that individual perceptions about condoms and sexual pleasure are dominant factors for casual unprotected sex. Further, social, cultural, and legal factors largely serve only to limit access to HIV prevention information and suppress the purchase and use of condoms.

The co-researchers' reflections on their existing perceptions and behaviours about migrant work, sexual relationships, condom use, HIV prevention, and internet use were the foundation of this research. It was almost impossible to design a co-creation for the co-researchers without understanding this basic information, even more challenging for an outsider. Furthermore, the co-creations devised by the Nepalese male migrant worker co-researchers were an original contribution designed to promote a change in their current context. Despite their straightforward content and presentation, community co-created internet-based tools or actions will have a significant impact. They are likely to be more encouraging for others to adopt and share with peers.

In summary, the study has exposed significant gaps in current knowledge and HIV prevention approaches and interventions and how they have failed to address the specific needs of Nepalese male migrant workers. It highlighted the importance of collaboration with target community members to understand their contexts and needs

and co-create appropriate and relevant strategies and actions. The research findings provide an original contribution to HIV prevention knowledge and approach in Nepal through the co-creation of an online HIV prevention strategy and internet-based tools designed by and for Nepalese male migrant workers.

References

Acharya, D., Thomas, M., & Cann, R. (2018). Nepalese school students' views about sexual health knowledge and understanding. *Educational Research, 60*(4), 445-458. doi:10.1080/00131881.2018.1525304

Adhikari, J., & Hobley, M. (2015). 'Everyone is leaving. Who will sow our fields?'the livelihood effects on women of male migration from Khotang and Udaypur districts, Nepal, to the gulf countries and Malaysia. *HIMALAYA, the Journal of the Association for Nepal and Himalayan Studies, 35*(1), 11-23.

Adhikari, N., Adhikari, S., & Sulemane, N. I. (2018). Premarital sexual behaviour among higher secondary students in Pokhara Sub-Metropolitan City Nepal. *Sexual health, 15*(5), 403-407. doi:https://doi.org/10.1071/SH17210

Adhikari, S. R. (2013). Choices of health care financing schemes for resource poor country: An analysis of Nepal's experiences. *Health, 5*(08), 1295.

Adhikary, P., Sheppard, Z. A., Keen, S., & Van Teijlingen, E. (2018). Health and well-being of Nepalese migrant workers abroad. *International Journal of Migration, Health and Social Care, 14*(1), 96-105. doi:10.1108/IJMHSC-12-2015-0052

Adibi, S. (2015). *Mobile health: a technology road map*(Vol. 5). Retrieved from https://www.researchgate.net/

Ahmed, S. (2004). Microcredit in Bangladesh: achievements and challenges. *Microfinance Gateway. Retrieved March, 3*, 2020. Retrieved from https://d1wqtxts1xzle7.cloudfront.net/

Alderete, M. V. (2017). Examining the ICT access effect on socioeconomic development: the moderating role of ICT use and skills. *Information Technology for Development, 23*(1), 42-58. doi:10.1080/02681102.2016.1238807

Allen, D. E. (2002). Toward a theory of consumer choice as sociohistorically shaped practical experience: The fits-like-a-glove (FLAG) framework. *Journal of consumer research, 28*(4), 515-532. doi:10.1086/338202

Anglewicz, P. (2012). Migration, marital change, and HIV infection in Malawi. *Demography, 49*(1), 239-265. doi:10.1007/s13524-011-0072-x

Ansell, N., Robson, E., Hajdu, F., & Van Blerk, L. (2012). Learning from young people about their lives: using participatory methods to research the impacts of AIDS in southern Africa. *Children's Geographies, 10*(2), 169-186. doi:10.1080/14733285.2012.667918

Aragón, A. O., & Castillo-Burguete, M. T. (2015). Introduction to practices. *The Sage handbook of action research*, 13-16. Retrieved from https://books.google.co.nz/

Arps, E. (2014, November). *The use of internet and mobile phone based health promotion interventions in youth populations.* Paper presented at the Health Promotion Forum, Auckland.

Aryal, R. P. (2017a). Migration and HIV in Nepal. *Janapriya Journal of Interdisciplinary Studies, 5*, 102-113.

Asamoah, B. O., & Agardh, A. (2018). Individual-and Family-Level Determinants of Risky Sexual Behavior Among Swedish-and Foreign-Born Young Adults 18–30 Years of Age, Residing in Skåne, Sweden. *Archives of sexual behavior, 47*(2), 517-528.

Asghar, J. (2013). Critical paradigm: A preamble for novice researchers. *Life Science Journal, 10*(4), 3121-3127.

Bailey, J. V., Pavlou, M., Copas, A., McCarthy, O., Carswell, K., Rait, G., . . . French, R. (2013). The Sexunzipped trial: optimizing the design of online randomized controlled trials. *Journal of medical Internet research, 15*(12), e278. doi:10.2196/jmir.2668

Bam, K., Thapa, R., Newman, M. S., Bhatt, L. P., & Bhatta, S. K. (2013). Sexual behavior and condom use among seasonal Dalit migrant laborers to India from Far West, Nepal: a qualitative study. *PLoS One, 8*(9), e74903.

Bandura, A. (1989). Human agency in social cognitive theory. *American psychologist, 44*(9), 1175. doi:10.1037/0003-066X.44.9.1175

Bandura, A. (1994). Social cognitive theory and exercise of control over HIV infection. In *Preventing AIDS* (pp. 25-59): Springer.

Bania, R. (2014). Traditional Healing Practices in Rural Nepal. *Journal of Patan Academy of Health Sciences, 1*(1), 52-53.

Bashford, A., & Levine, P. (2010). *The Oxford handbook of the history of eugenics*: OUP USA.

Bauer-Wu, S., Lhundup, T., Tidwell, T., Lhadon, T., Silva, C. O.-d., Dolma, J., . . . Yeshi, T. (2014). Tibetan Medicine for Cancer: An Overview and Review of Case Studies. *Integrative Cancer Therapies, 13*(6), 502-512. doi:10.1177/1534735414549624

Bauer, G., Davies, J. K., Pelikan, J., Noack, H., Broesskamp, U., & Hill, C. (2003). Advancing a theoretical model for public health and health promotion indicator development: proposal from the EUHPID consortium. *European Journal of Public Health, 13*(suppl_3), 107-113. doi:10.1093/eurpub/13.suppl_3.107

Baum, F. (2008). The Commission on the Social Determinants of Health: reinventing health promotion for the twenty-first century? *Critical Public Health, 18*(4), 457-466.

Baum, F. (2016). *The new public health* (4 ed.): Oxford University Press.

Baum, F., MacDougall, C., & Smith, D. (2006). Participatory action research. *Journal of Epidemiology & Community Health, 60*(10), 854-857.

Baum, F., Newman, L., & Biedrzycki, K. (2012). Vicious cycles: digital technologies and determinants of health in Australia. *Health Promotion International, 29*(2), 349-360. doi:10.1093/heapro/das062

Baumeister, R. F., & Vohs, K. D. (2004). Sexual economics: Sex as female resource for social exchange in heterosexual interactions. *Personality and Social Psychology Review, 8*(4), 339-363.

Beer, D. (2009). Power through the algorithm? Participatory web cultures and the technological unconscious. *new media & society, 11*(6), 985-1002. doi:10.1177/1461444809336551

Behera, M. R., & Intarak, R. (2018). HIV Risk among Labor Migrants: An in-Depth Study of the Literature. *Indian Journal of Public Health Research & Development, 9*(12), 107-115.

Bergner, M. (2013). *Developing Nepal's hydroelectric resources: policy alternatives*. Charlottesville, VA: Frank Batten School of Leadership and Public Policy, University of Virginia.

Berridge, V. (2010). Historical and policy approaches. In Y. Coombes & M. Thorogood (Eds.), *Evaluating Health Promotion: Practice and Methods* (3rd. ed.). Oxford: Oxford University Press.

Bhalla, G. (2011). *Collaboration and co-creation : new platforms for marketing and innovation*: New York : Springer, c2011.

Bhattarai, K., Yousef, M., Greife, A., & Naraharisetti, S. (2020). Influence of Topography on Sustainable Land Management: An Analysis of Socioeconomic and Ecodemographic Conditions of Nepal. *Agriculture, 10*(6), 224.

Blas, M. M., Alva, I. E., Carcamo, C. P., Cabello, R., Goodreau, S. M., Kimball, A. M., & Kurth, A. E. (2010). Effect of an online video-based intervention to increase HIV testing in men who have sex with men in Peru. *PLoS One, 5*(5), e10448. doi:10.1371/journal.pone.0010448

Bohman, J. (2005). Critical theory. Retrieved from https://plato.stanford.edu/

Boulos, M. N. K., Hetherington, L., & Wheeler, S. (2007). Second Life: an overview of the potential of 3-D virtual worlds in medical and health education. *Health Information & Libraries Journal, 24*(4), 233-245.

Boyce, W., Doherty-Poirier, M., MacKinnon, D., Fortin, C., Saab, H., King, M., & Gallupe, O. (2006). Sexual health of Canadian youth: Findings from the Canadian youth, sexual health and HIV/AIDS study. *Canadian Journal of Human Sexuality, 15*(2), 59.

Brandsen, T., Steen, T., & Verschuere, B. (2018). *Co-production and co-creation: Engaging citizens in public services*: Taylor & Francis.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101. doi:10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. London: Sage.

Braveman, P., Egerter, S., & Williams, D. R. (2011). The social determinants of health: coming of age. *Annual Review Of Public Health, 32*, 381-398. Retrieved from https://www.annualreviews.org/

Bredenkamp, C., Evans, T., Lagrada, L., Langenbrunner, J., Nachuk, S., & Palu, T. (2015). Emerging challenges in implementing universal health coverage in Asia. *Social science & medicine, 145*, 243-248.

Budd, J., Miller, B. S., Manning, E. M., Lampos, V., Zhuang, M., Edelstein, M., . . . Keegan, N. (2020). Digital technologies in the public-health response to COVID-19. *Nature medicine*, 1-10.

Bull, S. (2010). *Technology-based health promotion*: Sage.

Bustreo, F., & Tanner, M. (2020). How do we reimagine health in a digital age? *Bulletin of the World Health Organization, 98*(4), 232. doi:10.2471/BLT.19.235358

Cahill, C. (2007). Doing research with young people: Participatory research and the rituals of collective work. *Children's Geographies, 5*(3), 297-312. doi:10.1080/14733280701445895

Cahill, C. (2010). Participatory data analysis. In S. Kindon, R. Pain, & M. Kesby (Eds.), *participatory action research approaches and methods* (Vol. 2, pp. 181-187). New York, NY: Routledge.

Cahill, H., Coffey, J., & Beadle, S. (2015). Performative pedagogy: Poststructural theory as a tool to engage in identity work within a youth-led HIV prevention program. *Handbook of Children and Youth Studies*, 301-314.

Cahill, S., O'Shea, E., & Pierce, M. (2012). Future dementia care in Ireland: sharing the evidence to mobilise action. Retrieved from https://health.old.gov.ie/

Campbell, C., Cornish, F., Gibbs, A., & Scott, K. (2010). Heeding the push from below: How do social movements persuade the rich to listen to the poor? *Journal of health psychology, 15*(7), 962-971.

Catalani, C., Philbrick, W., Fraser, H., Mechael, P., & Israelski, D. M. (2013). mHealth for HIV treatment & prevention: a systematic review of the literature. *The open AIDS journal, 7*, 17. doi:10.2174/1874613620130812003

CBS. (2012). *National Population and Housing Census 2011 (National Report)*. Kathmandu, Nepal: Central Bureau of Stastitics

Retrieved from https://cbs.gov.np/

CBS. (2022). *National Census 2021- Primary Results*. Retrieved from Kathmandu: https://censusnepal.cbs.gov.np/

Centola, D. (2013). Social media and the science of health behavior. *Circulation, 127*(21), 2135-2144.

Chambers, R. (2008). *PRA, PLA and pluralism: Practice and theory* (H. Bradbury Ed. 3rd ed.). London, UK: sage.

Chand, P. B., & Kharel, R. (2015). Politics of Primary Health Care in Nepal. *Health for all: the journey of Universal Health Coverage. Hyderabad (IN): BMJ Publishing Group*.

Chen, P. G., Diaz, N., Lucas, G., & Rosenthal, M. S. (2010). Dissemination of results in community-based participatory research. *American journal of preventive medicine, 39*(4), 372-378.

Chiasson, M. A., Hirshfield, S., & Rietmeijer, C. (2010). HIV prevention and care in the digital age. *JAIDS Journal of Acquired Immune Deficiency Syndromes, 55*, S94-S97.

Chib, A. (2013). The promise and peril of mHealth in developing countries. *Mobile Media & Communication, 1*(1), 69-75. doi:10.1177/2050157912459502

CIA. (2021). The world factbook: Nepal. Retrieved from https://www.cia.gov/. Retrieved 08 February 2021, from Central Intelligence Agency (CIA) https://www.cia.gov/

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*: routledge.

Comstock, D. E. (1982). Power in organizations: toward a critical theory. *Pacific sociological review, 25*(2), 139-162. doi:10.2307/1388721

Conn, C., Modderman, K., & Nayar, S. (2017a). Strengthening participation by young women sex workers in HIV programs: reflections on a study from Bangkok,

Thailand. *International journal of women's health, 9*, 619-623. doi:10.2147/IJWH.S141996

Conn, C., Nayar, S., Lubis, D., Maibvisira, C., & Modderman, K. (2017). Vulnerable Youth as Prosumers in HIV Prevention: Studies Using Participatory Action Research. *JMIR public health and surveillance, 3*(3).

Cornelius, L. J., Erekaha, S. C., Okundaye, J. N., & Sam-Agudu, N. A. (2018). A socio-ecological examination of treatment access, uptake and adherence issues encountered by HIV-positive women in rural North-Central Nigeria. *Journal of evidence-informed social work, 15*(1), 38-51. doi:10.1080/23761407.2017.1397580

Cornwall, A., & Jewkes, R. (1995). What is participatory research? *Social science & medicine, 41*(12), 1667-1676. doi:10.1016/0277-9536(95)00127-S

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice, 39*(3), 124-130. doi:10.1207/s15430421tip3903_2

Crotty, M. (2020). *The foundations of social research: Meaning and perspective in the research process*: Routledge.

Cueto, M. (2004). The origins of primary health care and selective primary health care. *American journal of public health, 94*(11), 1864-1874. doi:10.2105/ajph.94.11.1864

Cullen, K. W., Thompson, D., Boushey, C., Konzelmann, K., & Chen, T.-A. (2013). Evaluation of a web-based program promoting healthy eating and physical activity for adolescents: teen choice: food and fitness. *Health education research, 28*(4), 704-714. doi:doi.org/10.1093/her/cyt059

Cusack, C., Cohen, B., Mignone, J., Chartier, M. J., & Lutfiyya, Z. (2018). Participatory action as a research method with public health nurses. *Journal of Advanced Nursing, 74*(7), 1544-1553. doi:10.1111/jan.13555

Dahal, S., Pokharel, P. K., & Yadav, B. K. (2014). Sexual behaviour and perceived risk of HIV/AIDS among returnee labour migrants from overseas in Nepal. *Health Science Journal, 7*(2), 11.

Davies, C. (1988). The health visitor as mother's friend: a woman's place in public health, 1900–14. *Social History of Medicine, 1*(1), 39-59. doi:10.1093/shm/1.1.39

Dayer, L., Heldenbrand, S., Anderson, P., Gubbins, P. O., & Martin, B. C. (2013). Smartphone medication adherence apps: potential benefits to patients and providers. *Journal of the American Pharmacists Association, 53*(2), 172-181.

Dolan, P., Hallsworth, M., Halpern, D., King, D., Metcalfe, R., & Vlaev, I. (2012). Influencing behaviour: The mindspace way. *Journal of Economic Psychology, 33*(1), 264-277. doi:10.1016/j.joep.2011.10.009

Dwivedi, A. V. (2018). Adultery (Hinduism). Retrieved from https://www.researchgate.net/

Easterly, W. (2003). IMF and World Bank structural adjustment programs and poverty. In *Managing currency crises in emerging markets* (pp. 361-392): University of Chicago Press.

Edwards, L., Thomas, C., Gregory, A., Yardley, L., O'Cathain, A., Montgomery, A. A., & Salisbury, C. (2014). Are people with chronic diseases interested in using telehealth? A cross-sectional postal survey. *Journal of medical Internet research, 16*(5), e123.

Efron, S. E., & Ravid, R. (2018). *Writing the literature review: A Practical Guide*: Guilford Publications.

Elliott, P. W. (2013). *Participatory action research: Challenges, complications, and opportunities*: Centre for the Study of Co-operatives, University of Saskatchewan.

Fielding, J. E. (1999). Public health in the twentieth century: advances and challenges. *Annual Review Of Public Health, 20*, xiii-xxx. Retrieved from http://search.ebscohost.com/

Fischer, E., & Arnold, S. J. (1990). More than a labor of love: Gender roles and Christmas gift shopping. *Journal of consumer research, 17*(3), 333-345. doi:10.1086/208561

Flicker, S., Maley, O., Ridgley, A., Biscope, S., Lombardo, C., & Skinner, H. A. (2008). e-PAR: Using technology and participatory action research to engage youth in health promotion. *Action Research, 6*(3), 285-303. doi:10.1177/1476750307083711

Foster, J. W., Chiang, F., Burgos, R. I., Cáceres, R. E., Tejada, C. M., Almonte, A. T., . . . Heath, A. (2012). Community-based participatory research and the challenges of qualitative analysis enacted by lay, nurse, and academic researchers. *Research in nursing & health, 35*(5), 550-559. doi:10.1002/nur.21494

Frisby, W., Reid, C. J., Millar, S., & Hoeber, L. (2005). Putting "participatory" into participatory forms of action research. *Journal of sport management, 19*(4), 367-386. doi:10.1123/jsm.19.4.367

Fry, D., & Zask, A. (2017). Applying the Ottawa Charter to inform health promotion programme design. *Health Promotion International, 32*(5), 901-912.

Fuchs, C. (2014). Theorising and analysing digital labour: From global value chains to modes of production. *The Political Economy of Communication, 1*(2). Retrieved from http://www.polecom.org

Garha, M. (2016). Health care in Nepal: An observational perspective. *Journal of Nursing Education and Practice, 7*(1), 114.

Gautam, D., & Chhetri, T. B. (2016). Waste management: new challenge after the recent earthquake in Nepal. *Current Science, 110*(3), 285.

Ghimire, A., Rajbanshi, A., Gurung, G., Adhikari, J., & Thieme, S. (2011). Nepal migration year book 2010. Retrieved from https://boris.unibe.ch/id/eprint/119361

Ghimire, N. R. (2009). Farmer participation in agricultural development in Nepal: A case study. *Journal of Agricultural, Food and Environmental Sciences, 3*(1), 1-12. Retrieved from https://www.researchgate.net/

Gibbon, M. (2002). Doing a doctorate using a participatory action research framework in the context of community health. *Qualitative Health Research, 12*(4), 546-558. doi:10.1177/104973202129120061

Gillis, A., & Jackson, W. (2002). *Research for nurses: Methods and interpretation*: FA Davis Company.

Glassman, M., & Erdem, G. (2014). Participatory action research and its meanings: Vivencia, praxis, conscientization. *Adult education quarterly, 64*(3), 206-221. doi:10.1177/0741713614523667

Gopichandran, V. (2015). Faith healing and faith in healing. *Indian journal of medical ethics, 12*(4), 238-240. doi:10.20529/ijme.2015.063

Grant, B. M., & Giddings, L. S. (2002). Making sense of methodologies: A paradigm framework for the novice researcher. *Contemporary nurse, 13*(1), 10-28.

Griffin, M. A., Parker, S. K., & Neal, A. (2008). Is behavioral engagement a distinct and useful construct? *Industrial and Organizational Psychology, 1*(1), 48-51. Retrieved from https://www.cambridge.org/

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research, 2*(163-194), 105. Retrieved from https://miguelangelmartinez.net/

Gurung, G. (2018). 2015 Earthquake as Driver of Labour Migration. *Initiating Dialogue on Post-Disaster Reconstruction (Edited volume)*, 59-72. Retrieved from https://sawtee.org/publications/Chap-4.pdf

Hall, B. L. (1997). LOOKING BACK, LOOKING FORWARD: REFLECTIONS ON THE ORIGINS OF THE INTERNATIONAL PARTICPATORY RESEARCH NETWORK AND THE PARTICIPATORY RESEARCH GROUP IN TORONTO, CANADA. *IDENTIFIERS Guatemala; Transformative Learning*, 75. Retrieved from https://files.eric.ed.gov/

Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the Internet. *Communication research, 35*(5), 602-621. doi:10.1177/0093650208321782

Hernández-Rincón, E. H., Lamus-Lemus, F., Carratalá-Munuera, C., & Orozco-Beltrán, D. (2017). Diálogo de saberes: propuesta para identificar, comprender y abordar temas críticos de la salud de la población. *Revista Salud Uninorte, 33*(2), 242-251.

Herr, K., & Anderson, G. L. (2005). The continuum of positionality in action research. *The action research dissertation: A guide for students and faculty*, 29-48. doi:10.4135/9781452226644.n3

Hill, S., Merchant, R., & Ungar, L. (2013). Lessons learned about public health from online crowd surveillance. *Big Data, 1*(3), 160-167.

Horkheimer, M. (1982). *Critical theory: Selected essays* (Vol. 1). New York, USA: Contimum.

Hussain, M. A., Elyas, T., & Nasseef, O. A. (2013). Research paradigms: A slippery slope for fresh researchers. *Life Science Journal, 10*(4), 2374-2381. Retrieved from https://www.lifesciencesite.com/

ILO. (2017). *Nepal Labour Market Update*. Retrieved from

ILO. (2020). *Impact of COVID-19 on Nepali Migrant Workers: Protecting Nepali Migrant Workers during the Health and Economic Crisis*. Retrieved from https://www.ilo.org

IOM. (2020). *World Migration Report 2020*. Retrieved from https://publications.iom.int/system/files/pdf/wmr_2020.pdf

Jackson, S. F., Perkins, F., Khandor, E., Cordwell, L., Hamann, S., & Buasai, S. (2006). Integrated health promotion strategies: a contribution to tackling current and future health challenges. *Health Promotion International, 21*(suppl_1), 75-83. doi:10.1093/heapro/dal054

Jaquet, S., Kohler, T., & Schwilch, G. (2019). Labour migration in the middle hills of Nepal: Consequences on land management strategies. *Sustainability, 11*(5), 1349. doi:10.3390/su11051349

Jesson, J., Matheson, L., & Lacey, F. M. (2011). *Doing your literature review: Traditional and systematic techniques*: Sage.

Jha, H. B. (2013). Economic Impact of 'People's War' in Nepal: A study. Retrieved from https://www.vifindia.org/

Johnson, E. J., Shu, S. B., Dellaert, B. G., Fox, C., Goldstein, D. G., Häubl, G., . . . Schkade, D. (2012). Beyond nudges: Tools of a choice architecture. *Marketing Letters, 23*(2), 487-504. doi:doi.org/10.1007/s11002-012-9186-1

Johnson, J. (2021). Worldwide digital population as of January 2021. Retrieved from https://www.statista.com/statistics/617136/digital-population-worldwide/

Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J. (2015). The health belief model as an explanatory framework in communication research: exploring parallel, serial, and moderated mediation. *Health communication, 30*(6), 566-576. doi:10.1080/10410236.2013.873363

Jönsson, A. M., & Örnebring, H. (2011). User-generated content and the news: Empowerment of citizens or interactive illusion? *Journalism Practice, 5*(2), 127-144. doi:10.1080/17512786.2010.501155

Josefsson, U. (2005). Coping with illness online: The case of patients' online communities. *The Information Society, 21*(2), 133-141. doi:10.1080/01972240590925357

Joshi, S., Prescott, G. J., Simkhada, P., Sharma, N., & Bhurtyal, Y. M. (2014). Knowledge and risk perceptions about HIV/AIDS among nepalese migrants in Gulf countries: a cross-sectional study. *Health Science Journal, 8*(3), 350.

Jureidini, R. (2005). Migrant workers and xenophobia in the Middle East. In *Racism and Public Policy* (pp. 48-71): Springer.

Justice, J. (1986). *Policies, plans, & people: culture and health development in Nepal*: Univ of California Press.

Kaehler, N., Adhikar, B., Raut, S., Marahatta, S. B., & Chapman, R. S. (2015). Perceived stigma towards leprosy among community members living close to Nonsomboon leprosy Colony in Thailand. *PLoS One, 10*(6), e0129086.

Karkee, R., & Jha, N. (2010). Primary health care development: where is Nepal after 30 years of Alma Ata Declaration? *Journal of the Nepal Medical Association, 49*(178).

Karki, B. K. (2018). Policies and Practices of Health Promotion in Nepal. *KMC Research Journal, 2*(2), 107-118.

Kemmis, S. (2008). Critical theory and participatory action research. *The SAGE handbook of action research: Participative inquiry and practice, 2*(2008), 121-138.

Kemmis, S., & McTaggart, R. (2005). Participatory action research: Communicative action and the pubic sphere. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 559-603). Thousands Oaks, CA: Sage Publication.

Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*: Springer Science & Business Media.

Kesternich, I., Siflinger, B., Smith, J. P., & Winter, J. K. (2014). The effects of World War II on economic and health outcomes across Europe. *Review of Economics and Statistics, 96*(1), 103-118. doi:10.1162/REST_a_00353

Khadka, C., & Vacik, H. (2012). Comparing a top-down and bottom-up approach in the identification of criteria and indicators for sustainable community forest management in Nepal. *Forestry: An International Journal of Forest Research, 85*(1), 145-158. doi:10.1093/forestry/cpr068

Khanal, V., & Karkee, R. (2012). Epidemiological Review on Factors Determining Prevalence of HIV among Migrant Males of Nepal. *The Internet Journal of Epidemiology, 10*(2), 1-8.

Khanduri, C. B. (1997). *A re-discovered history of Gorkhas*: Gyan Sagar Publications.

Kickbusch, I. (2012). 21st century determinants of health and wellbeing: a new challenge for health promotion. In: Sage Publications Sage UK: London, England.

Kidd, S. A., & Kral, M. J. (2005). Practicing participatory action research. *Journal of counseling psychology, 52*(2), 187. doi:10.1037/0022-0167.52.2.187

Kindon, S., Pain, R., & Kesby, M. (2007). *Participatory action research approaches and methods: Connecting people, participation and place* (Vol. 22): Routledge.

King, D. L., Haagsma, M. C., Delfabbro, P. H., Gradisar, M., & Griffiths, M. D. (2013). Toward a consensus definition of pathological video-gaming: A systematic review of psychometric assessment tools. *Clinical psychology review, 33*(3), 331-342. doi:10.1016/j.cpr.2013.01.002

Kippax, S. (2018). A journey to HIV prevention research: From social psychology to social health via multidisciplinarity. *Journal of health psychology, 23*(3), 442-456.

Koch, T., & Kralik, D. (2009). *Participatory action research in health care*: John Wiley & Sons.

Kotler, P. (2010). The prosumer movement. In *Prosumer Revisited* (pp. 51-60): Springer.

Kreuter, M. W., & McClure, S. M. (2004). The role of culture in health communication. *Annu. Rev. Public Health, 25*, 439-455.

Kristina, S. A., Ekasari, M. P., & Wati, M. R. (2019). Internet use for searching information on Health and Medicine: An Exploratory study among Indonesian customers. *Research Journal of Pharmacy and Technology, 12*(12), 5927-5931.

Krueger, R. A., & Casey, M. A. (2002). Designing and conducting focus group interviews. In: St Paul, MN, October.

Kumar, K., Kumar, N., & Shah, R. (2020). Role of IoT to avoid spreading of COVID-19. *International Journal of Intelligent Networks, 1*, 32-35.

Kunwar, L. S. (2020). Foreign Labour Migration and Governance in Nepal. *Journal of Population and Development, 1*(1), 115-129. doi:10.3126/jpd.v1i1.33110

Kurth, A. E., Spielberg, F., Cleland, C. M., Lambdin, B., Bangsberg, D. R., Frick, P. A., . . . Lockhart, D. (2014). Computerized counseling reduces HIV-1 viral load and sexual transmission risk: findings from a randomized controlled trial. *Journal of acquired immune deficiency syndromes (1999), 65*(5), 611.

Langlois, S., Goudreau, J., & Lalonde, L. (2014). Scientific rigour and innovations in participatory action research investigating workplace learning in continuing interprofessional education. *Journal of interprofessional care, 28*(3), 226-231. doi:10.3109/13561820.2014.885003

Laranjo, L. (2016). Social Media and Health Behavior Change. In S. Syed-Abdul, E. Gabarron, & A. Lau (Eds.), *Participatory Health Though Social Media* (pp. 83-111). doi:10.1016/B978-0-12-809269-9.00006-2

Lather, P. (1991). Deconstructing/deconstructive inquiry: The politics of knowing and being known. *Educational Theory, 41*(2), 153-173. doi:10.1111/j.1741-5446.1991.00153.x

Laukka, E., Rantakokko, P., & Suhonen, M. (2019). Consumer-led health-related online sources and their impact on consumers: an integrative review of the literature. *Health informatics journal, 25*(2), 247-266. doi:10.1177/1460458217704254

Lee, H., & Pollitzer, E. (2016). *Gender in science and innovation as component of inclusive socioeconomic growth*: Portia Limited.

Lee, K., Koivusalo, M., Labonte, R., Ollila, E., Schrecker, T., Schuftan, C., & Woodward, D. (2007). Globalization, global governance and the social determinants of health: A review of the linkages and agenda for action.

Lehdonvirta, M., Nagashima, Y., Lehdonvirta, V., & Baba, A. (2012). The stoic male: How avatar gender affects help-seeking behavior in an online game. *Games and culture, 7*(1), 29-47. doi:10.1177/1555412012440307

Lember, V., Brandsen, T., & Tõnurist, P. (2019). The potential impacts of digital technologies on co-production and co-creation. *Public Management Review, 21*(11), 1665-1686. doi:10.1080/14719037.2019.1619807

Lester, R. T., Ritvo, P., Mills, E. J., Kariri, A., Karanja, S., Chung, M. H., . . . Najafzadeh, M. (2010). Effects of a mobile phone short message service on antiretroviral treatment adherence in Kenya (WelTel Kenya1): a randomised trial. *The Lancet, 376*(9755), 1838-1845.

Lodge, M., & Wegrich, K. (2016). The rationality paradox of nudge: Rational tools of government in a world of bounded rationality. *Law & Policy, 38*(3), 250-267.

Loewenson, R., Laurell, A. C., Hogstedt, C., D'Ambruoso, L., & Shroff, Z. (2014). *Participatory action research in health systems: a methods reader*: TARSC, AHPSR, WHO, IDRC Canada, Equinet.

Lozano, R., Fullman, N., Mumford, J. E., Knight, M., Barthelemy, C. M., Abbafati, C., . . . Abedi, A. (2020). Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet, 396*(10258), 1250-1284. doi:10.1016/S0140-6736(20)30750-9

Lubis, D. S. (2018). *Creating space for young men who have sex with men (YMSM) to develop ideas on using the internet for HIV prevention.* Auckland University of Technology, Retrieved from http://orapp.aut.ac.nz/

Lupton, D. (2014a). Critical Perspectives on Digital Health Technologies. *Sociology compass, 8*(12), 1344-1359. doi:10.1111/soc4.12226

Lupton, D. (2014b). Health promotion in the digital era: a critical commentary. *Health Promotion International, 30*(1), 174-183.

MacDonald, C. (2012). Understanding participatory action research: A qualitative research methodology option. *The Canadian Journal of Action Research, 13*(2), 34-50. doi:10.33524/cjar.v13i2.37

MacDougall, H. (2007). Reinventing public health: a new perspective on the health of Canadians and its international impact. *Journal of Epidemiology & Community Health, 61*(11), 955-959. doi:10.1136/jech.2006.046912

Maibvisira, C. (2019). *"Sex… is a good thing": Creating a space for the voices of young Zimbabweans to shape school-based HIV prevention-orientated sexuality education.* Auckland University of Technology, Retrieved from https://openrepository.aut.ac.nz/

Mann, J., & Hung, L. (2019). Co-research with people living with dementia for change. *Action Research, 17*(4), 573-590. doi:10.1177/1476750318787005

Marasini, B. (2020). Health System Development in Nepal. *JNMA: Journal of the Nepal Medical Association, 58*(221), 65. doi:10.31729/jnma.4839

Marasini, B. R. (2003). Health and hospital development in Nepal: past and present. *J Nep Med Assoc, 42*(149), 306-311.

McCouat, M., & Peile, C. (1995). The micro politics of qualitative research traditions. *Qualitative research: Beyond the boundaries*, 2-16.

McIntyre, L. L. (2008). Parent training for young children with developmental disabilities: Randomized controlled trial. *American Journal on Mental Retardation, 113*(5), 356-368. doi:10.1352/2008.113:356-368

McLaren, P. (2000). Paulo Freire's pedagogy of possibility. *Freireian pedagogy, praxis, and possibilities: Projects for the new millennium, 1*(19), 1-22.

McQueen, D. V. (2008). Self-reflections on health promotion in the UK and the USA. *Public health, 122*(10), 1035-1037.

McTaggart, R. (1991). Principles for participatory action research. *Adult education quarterly, 41*(3), 168-187. doi:10.1177/0001848191041003003

McTaggart, R. (1997). *Participatory action research: International contexts and consequences*: Suny Press.

Mehta, R., & Belk, R. W. (1991). Artifacts, identity, and transition: Favorite possessions of Indians and Indian immigrants to the United States. *Journal of consumer research, 17*(4), 398-411.

Michie, S., West, R., Campbell, R., Brown, J., & Gainforth, H. (2014). *ABC of behaviour change theories*: Silverback Publishing.

Miller, R. L., & Brewer, J. D. (2003). *The AZ of social research: a dictionary of key social science research concepts*: Sage.

Miorandi, D., Sicari, S., De Pellegrini, F., & Chlamtac, I. (2012). Internet of things: Vision, applications and research challenges. *Ad hoc networks, 10*(7), 1497-1516. doi:10.1016/j.adhoc.2012.02.016

Mishra, S. R., Khanal, P., Karki, D. K., Kallestrup, P., & Enemark, U. (2015). National health insurance policy in Nepal: challenges for implementation. *Global health action, 8*(1), 28763.

MoH. (2017). *National e-Health Strategy 2017*. Retrieved from https://www.mohp.gov.np/

MoHNZ. (2016). *New Zealand Health Strategy 2016*. Wellington, NZ: Ministry of Health New Zealand Retrieved from https://www.health.govt.nz/

MoHP. (1991). *National Health Policy Nepal 1991*. Kathmandu Nepal: Government of Nepal, Ministory of Health and Population

Mold, A., & Berridge, V. (2013). The history of health promotion. *Health promotion theory*, 3-19.

Muessig, K. E., Nekkanti, M., Bauermeister, J., Bull, S., & Hightow-Weidman, L. B. (2015). A systematic review of recent smartphone, Internet and Web 2.0 interventions to address the HIV continuum of care. *Current HIV/AIDS Reports, 12*(1), 173-190.

Mukherjee, K., & Mail, I. (2014). Knowledge, attitude, practices and access to care for HIV/AIDS among Nepali migrants in Mumbai. *Health, 2*(1).

NACO. (2019). *HIV Facts & Figure*. Retrieved from http://naco.gov.in/

Naidoo, J., & Wills, J. (2016). *Foundations for Health Promotion-E-Book*: Elsevier Health Sciences.

Narayanaswamy, V. (1981). Origin and development of ayurveda:(a brief history). *Ancient science of life, 1*(1), 1.

Navarro, Z. (2006). In search of a cultural interpretation of power: The contribution of Pierre Bourdieu. Retrieved from https://opendocs.ids.ac.uk/

NCASC. (2013). *National Guideline on Monitoring and Evaluation of HIV Response in Nepal, 2012*. Kathmandu: National Centre for AIDS and STD Control Retrieved from https://healtheducationresources.unesco.org/

NCASC. (2017). *Nepal HIVison 2020: Fast-Track ending the AIDS epidemic as a public health threat, by 2010*. Retrieved from https://reliefweb.int/

NCASC. (2017a). *National Consolidated Guidelines on Strategic information of HIV Response in Nepal*. Kathmandu, Nepal: National Centre for AIDS and STD Control Retrieved from https://.moph.gov.np

NCASC. (2020). *HIV Epidemic Update of Nepal, World AIDs Day 2020 : Fact Sheet 1*. Retrieved from http://www.ncasc.gov.np/WAD2020/Factsheet-2020-S.pdf

NCASC. (2021). *World AIDS Day Fact Sheet 2021*. Retrieved from www.ncasc.gov.np

Neupane, D., Khanal, V., Sharma, S., & Aro, A. (2012). Perceived discrimination among people living with HIV in Nepal. *J Nepal Health Res Counc, 10*(21), 136-140. Retrieved from http://citeseerx.ist.psu.edu/

Ngadiman, S., Suleiman, A., & Chandrasekaran, S. (2016). Global AIDS Response Progress Report 2016. *Malaysia. Kuala Lumpur: Ministry of Health Malaysia*.

Nicholson, E. (2013). *Collective action and the transformation of occupational therapy practice.* Auckland University of Technology, Retrieved from https://openrepository.aut.ac.nz/

O'Sullivan, G., Hocking, C., & Spence, D. (2014). Action research: Changing history for people living with dementia in New Zealand. *Action Research, 12*(1), 19-35. doi:10.1177/1476750313509417

Oinas-Kukkonen, H. (2010). Behavior change support systems: A research model and agenda. *International Conference on persuasive technology*, 4-14. doi:10.1007/978-3-642-13226-1_3

Olshansky, E., Sacco, D., Braxter, B., Dodge, P., Hughes, E., Ondeck, M., . . . Upvall, M. J. (2005). Participatory action research to understand and reduce health disparities. *Nursing Outlook, 53*(3), 121-126. doi:10.1016/j.outlook.2005.03.002

Palmer, V. J., Weavell, W., Callander, R., Piper, D., Richard, L., Maher, L., . . . Gunn, J. (2019). The Participatory Zeitgeist: an explanatory theoretical model of change in an era of coproduction and codesign in healthcare improvement. *Medical humanities, 45*(3), 247-257. doi:10.1136/medhum-2017-011398

Pandey, K. R. (2018). From health for all to universal health coverage: Alma Ata is still relevant. *Globalization and health, 14*(1), 1-5. doi:10.1186/s12992-018-0381-6

Paudel, R., Upadhyaya, T., & Pahari, D. P. (2012). People's perspective on access to health care services in a rural district of Nepal. *Journal of the Nepal Medical Association, 52*(185).

Paudel, T., Singh, N., Banjara, M. R., Kafle, S. P., Ghimire, Y. C., Pokharel, B. R., . . . Pendse, R. N. (2016). Epidemiology of HIV, programmatic progress and gaps in last 10 years in Nepal. *Journal of virus eradication, 2*(4), 35-40.

Pokharel, R., & Silwal, P. R. (2018). Social health insurance in Nepal: A health system departure toward the universal health coverage. *International Journal of Health Planning and Management, 33*(3), 573-580. doi:10.1002/hpm.2530

Pokhrel, P., Regmi, S., & Piedade, E. (2008). HIV/AIDS prevention in the Nepalese context. *Evaluation & the health professions, 31*(2), 198-210.

Potra, S. (2016). Developing Consumer Value Co-creation Strategies for the Online Environment. *Proceedings of the European Conference on Management, Leadership & Governance*, 280-289. Retrieved from https://ezproxy.aut.ac.nz

Potra, S., Izvercian, M., & Larisa Ivascu, L. I. (2014). A Prosumer-Oriented Value Co-Creation Strategic Model for Corporate Performance. *Proceedings of the European Conference on Management, Leadership & Governance*, 262-269. Retrieved from https://ezproxy.aut.ac.nz/

Poudel, K. C., Jimba, M., Okumura, J., Sharma, M., Tandukar, K. P., & Wakai, S. (2004). Migration in far western Nepal: a time bomb for a future HIV/AIDS epidemic? *Tropical doctor, 34*(1), 30-31.

Pradhan, G. (2009). Nepal's Civil War and Its Economic Costs. *Journal of International & Global Studies, 1*(1).

Prochaska, J. O., DiClemente, C. C., Velicer, W. F., & Rossi, J. S. (1992). Criticisms and concerns of the transtheoretical model in light of recent research. *British journal of addiction, 87*(6), 825-828. doi:10.1111/j.1360-0443.1992.tb01973.x

Rahman, M. A. (2008). Some trends in the praxis of participatory action research. *The SAGE handbook of action research: Participative inquiry and practice*, 49-62. Retrieved from https://books.google.co.nz/

Rai, B. (2008). *HIV and AIDS: related Stigma and Discrimination in Nepal*: Royal tropical institute (KIT).

Rai, S. K., Rai, G., Hirai, K., Abe, A., & Ohno, Y. (2001). The health system in Nepal—an introduction. *Environmental health and preventive medicine, 6*(1), 1-8.

Raingruber, B. (2014). *Contemporary health promotion in nursing practice*. Burlington, USA: Jones & Bartlett Publishers.

Raingruber, B. (2014b). Health promotion theories. *Contemporary health promotion in nursing practice, 53*, 53-94. Retrieved from https://books.google.co.nz/

Raingruber, B. (2016). *Contemporary Health Promotion in Nursing Practice*. Sudbury, UNITED STATES: Jones & Bartlett Learning, LLC.

Rajkarnikar, P. J. (2017). *The Impacts of Foreign Labor Migration of Men on Women's Empowerment in Nepal.* University of Massachusetts Libraries,

Ramsetty, A., & Adams, C. (2020). Impact of the digital divide in the age of COVID-19. *Journal of the American Medical Informatics Association, 27*(7), 1147-1148.

Ranabhat, C. L., Kim, C.-B., Singh, A., Acharya, D., Pathak, K., Sharma, B., & Mishra, S. R. (2019). Challenges and opportunities towards the road of universal health coverage (UHC) in Nepal: a systematic review. *Archives of Public Health, 77*(1), 5.

Ranabhat, C. L., Subedi, R., & Karn, S. (2020). Status and determinants of enrollment and dropout of health insurance in Nepal: an explorative study. *Cost Effectiveness and Resource Allocation, 18*(1), 1-13. Retrieved from https://link.springer.com

Reason, P., & Bradbury, H. (2007). *The SAGE Handbook of Action Research: Participative Inquiry and Practice*: SAGE.

Regmi, P. R., Van Teijlingen, E., Simkhada, P., & Acharya, D. R. (2010). Barriers to sexual health services for young people in Nepal. *Journal of health, population, and nutrition, 28*(6), 619-627.

Rifkin, S. B. (2018). Alma Ata after 40 years: Primary Health Care and Health for All-from consensus to complexity. *BMJ global health, 3*(Suppl 3), e001188-e001188. doi:10.1136/bmjgh-2018-001188

Rippe, J. M. (2013). *Lifestyle medicine*: CRC Press.

Ritzer, G. (2019). Contemporary capitalism and the 'new'prosumer. *The Oxford handbook of consumption*, 75-94. Retrieved from https://books.google.co.nz/

Ritzer, G., Dean, P., & Jurgenson, N. (2012). The Coming of Age of the Prosumer. *American Behavioral Scientist, 56*(4), 379-398. doi:10.1177/0002764211429368

Roden, J. (2004). Revisiting the Health Belief Model: nurses applying it to young families and their health promotion needs. *Nursing & health sciences, 6*(1), 1-10. doi:10.1111/j.1442-2018.2003.00167.x

Rodríguez, L. F., & Brown, T. M. (2009). From voice to agency: Guiding principles for participatory action research with youth. *New directions for youth development, 2009*(123), 19-34. doi:10.1002/yd.312

Rothstein, W. G. (2003). *Public health and the risk factor: A history of an uneven medical revolution* (Vol. 3): The University of Rochester Press.

Ryan, P. (2009). Integrated theory of health behavior change: background and intervention development. *Clinical nurse specialist CNS, 23*(3), 161. doi:10.1097/NUR.0b013e3181a42373

Sah, B. N. (2019). Remittance and Economic Development of Nepal. *Patan Pragya, 5*(1), 196-208. doi:10.3126/pragya.v5i1.30475

Sahay, S., & Mehendale, S. (2011). Engaging community to support HIV prevention research. *Eastern journal of medicine: EJM, 16*(2), 168. Retrieved from https://www.ncbi.nlm.nih.gov/

Sanders, S. A., Yarber, W. L., Kaufman, E. L., Crosby, R. A., Graham, C. A., & Milhausen, R. R. (2012). Condom use errors and problems: a global view. *Sexual health, 9*(1), 81-95. doi:10.1071/SH11095

Santillana, M., Zhang, D. W., Althouse, B. M., & Ayers, J. W. (2014). What can digital disease detection learn from (an external revision to) Google Flu Trends? *American journal of preventive medicine, 47*(3), 341-347. doi:10.1016/j.amepre.2014.05.020

Sarasohn-Kahn, J. (2008). The wisdom of patients: Health care meets online social media. In: California HealthCare Foundation Oakland, CA.

Saunders, M., Lewis, P., & Thornhill, A. (2012). Research methods for business students (6. utg.). *Harlow: Pearson*.

Schneider, D., Klumpe, J., Adam, M., & Benlian, A. (2020). Nudging users into digital service solutions. *Electronic Markets, 30*(4), 863-881.

Seran, S., & Izvercian, M. (2014). Prosumer engagement in innovation strategies. *Management Decision*.

Shah, N. J. (2016). Migration, HIV and Technical Education in Nepal. *Journal of Training and Development, 2*, 88-93.

Shankar, P. R., Paudel, R., & Giri, B. R. (2006). Healing traditions in Nepal. *J Am Assoc Integr Med*. Retrieved from https://citeseerx.ist.psu.edu/

Sharma, D. B., Gupta, V., Saxena, K., Shah, U. M., & Singh, U. S. (2020). Role of Faith healers: A barrier or a support system to medical care-a cross sectional study. *Journal of family medicine and primary care, 9*(8), 4298. doi:10.4103/jfmpc.jfmpc_868_20

Sharma, J., Aryal, A., & Thapa, G. K. (2018). Envisioning a high-quality health system in Nepal: if not now, when? *The Lancet Global Health, 6*(11), e1146-e1148.

Sharma, S., Pandey, S., Pathak, D., & Sijapati-Basnett, B. (2014). *State of migration in Nepal*: Centre for the Study of Labour and Mobility Kathmandu.

Sharma, S. R., & Matheson, A. (2016). Systems thinking in 21st century: a call to health promoters. *Health Prospect, 15*(2), 1-2.

Shrafritz, J., & Ott, J. S. (1992). Organizational culture and leadership: A dynamic view. *San Fran cisco: Jossey-Bass*.

Shrestha, B. G. (2008). The end of monarchy in Nepal and its delicate journey towards a republic. *Contributions to Nepalese Studies, 35*(1), 63. Retrieved from http://himalaya.socanth.cam.ac.uk/

Sijapati, B., & Limbu, A. (2017). *Governing labour migration in Nepal: An analysis of existing policies and institutional mechanisms* (2nd ed.): Himal Books.

Silverman, D. (2013). *Doing qualitative research: A practical handbook*: Sage.

Simkhada, P. P., Regmi, P. R., Van Teijlingen, E., & Aryal, N. (2017). Identifying the gaps in Nepalese migrant workers' health and well-being: a review of the literature. *Journal of travel medicine, 24*(4).

Simoni, J. M., Kutner, B. A., & Horvath, K. J. (2015). Opportunities and challenges of digital technology for HIV treatment and prevention. *Current HIV/AIDS Reports, 12*(4), 437-440.

Smith, L. T. (2021). *Decolonizing methodologies: Research and indigenous peoples*: Zed Books Ltd.

Smith, M., Morita, H., Mateo, K. F., Nye, A., Hutchinson, C., & Cohall, A. T. (2014). Development of a culturally relevant consumer health information website for Harlem, New York. *Health promotion practice, 15*(5), 664-674. doi:10.1177/1524839914530401

Smith, R. (1993). Potentials for empowerment in critical education research. *The Australian Educational Researcher, 20*(2), 75-93. doi:10.1007/BF03219544

Sparks, M. (2013). The changing contexts of health promotion. *28*(2), 153-156. doi:https://doi.org/10.1093/heapro/dat034

Srivastava, P., & Hopwood, N. (2009). A practical iterative framework for qualitative data analysis. *International journal of qualitative methods, 8*(1), 76-84. doi:10.1177/160940690900800107

Stalgaitis, C., & Glick, S. N. (2014). The use of web-based diaries in sexual risk behaviour research: a systematic review. *Sexually transmitted infections, 90*(5), 374-381.

Stepan, N. L. (2013). *Eradication: ridding the world of diseases forever?* London, UK: Reaktion Books.

Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American journal of health promotion, 10*(4), 282-298. doi:10.4278/0890-1171-10.4.282

Subedi, M. S. (2003). Healer choice in medically pluralistic cultural settings: An overview of Nepali medical pluralism.

Sullivan, P. S., Grey, J. A., & Rosser, B. S. (2013). Emerging technologies for HIV prevention for MSM: what we've learned, and ways forward. *Journal of acquired immune deficiency syndromes (1999), 63*(0 1), S102.

Surowiecki, J. (2005). *The wisdom of crowds*. London: Anchor.

Tait, R. J., & Christensen, H. (2010). Internet-based interventions for young people with problematic substance use: a systematic review. *Medical Journal of Australia, 192*, S15-S21. doi:10.5694/j.1326-5377.2010.tb03687.x

Tapscott, D., & Williams, A. D. (2008). *Wikinomics: How mass collaboration changes everything*. New York: Penguin.

Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth, and happiness*: Penguin.

Thapa, S., Bista, N., Hannes, K., Buve, A., Vermandere, M., & Mathei, C. (2016a). Vulnerability of wives of Nepalese labor migrants to HIV infection: integrating quantitative and qualitative evidence. *Women & health, 56*(7), 745-766.

Thapa, S., Pathak, S., Leppin, A., Buve, A., Hannes, K., Kandel, G., & Mathei, C. (2016). Factors associated with condom use for HIV prevention among Nepalese labor migrant couples. *AIDS Education and Prevention, 28*(2), 180-190.

Thapa, S., Thapa, D. K., Buve, A., Hannes, K., Nepal, C., & Mathei, C. (2017). HIV-related risk behaviors among labor migrants, their wives and the general population in Nepal. *Journal of community health, 42*(2), 260-268.

Thornton, S. (1996). *Club cultures: Music, media, and subcultural capital*: Wesleyan University Press.

Toffler, A. (1980). *The third wave* (Vol. 484). New York, USA: Bantam Books

Tountas, Y. (2009). The historical origins of the basic concepts of health promotion and education: the role of ancient Greek philosophy and medicine. *Health Promotion International, 24*(2), 185-192.

Trägård, A., & Shrestha, I. B. (2010). System-wide effects of Global Fund investments in Nepal. *Health policy and planning, 25*(suppl_1), i58-i62.

Tranter, P. J. (2010). Speed kills: The complex links between transport, lack of time and urban health. *Journal of urban health, 87*(2), 155-166.

UNAIDS. (2014). The gap report 2014: migrants. *Geneva, Switzerland*. Retrieved from https://www.unaids.org/

UNAIDS. (2014a). *Fast-Track strategy to end the AIDS epidemic by 2030.* Retrieved from https://www.unaids.org/

UNAIDS. (2016). *Prevention Gap Report*. Retrieved from Geneva:

UNAIDS. (2018). *Country Progress Report Nepal*. Retrieved from https://www.unaids.org/

UNAIDS. (2019a). Communities at the Centre: Defending Rights, Breaking Barriers, Reaching People with HIV Services. Global AIDS Update 2019. In: Geneva: UNAIDS.

UNAIDS. (2020). *AIDSinfo: Country Factsheets*. Retrieved from http://aidsinfo.unaids.org/

UNAIDS. (2020a). Country Factsheet: India. Retrieved from https://www.unaids.org/

UNAIDS. (2021a). *Global Commitments, Local Action: After 40 years of AIDS, charting a course to end pandemic*. Retrieved from https://www.unaids.org

UNAIDS. (2021b). *Confronting Inequalities: Lessons for pandemic responses from 40 years of AIDS*. Retrieved from http://www.unaids.org

UNDP. (2013). Nepal: Millenium Development Goals Progress report 2013. Retrieved from https://www.np.undp.org/

UNDP. (2020). *Human Development Report/Nepal*. Retrieved from http://hdr.undp.org/

UNICEF. (1996). The 1950s: era of the mass disease campaign. *Fifty years for*. Retrieved from https://www.unicef.org/

v Teijlingen, E., Simkhada, P., Stephens, J., Simkhada, B., Rogers, S., & Sharma, S. (2012). Making the best use of all resources: developing a health promotion intervention in rural Nepal. *Health Renaissance, 10*(3), 229-235.

Vaidya, A., & Pradhan, B. (2008). Community participation in health: A brief review and the experience of Kathmandu Medical College with the Duwakot community. *Kathmandu University Medical Journal, 6*(4), 526-532. doi:10.3126/kumj.v6i4.1750

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of marketing, 68*(1), 1-17. doi:10.1509/jmkg.68.1.1.24036

Vaughn, N. A., Jacoby, S. F., Williams, T., Guerra, T., Thomas, N. A., & Richmond, T. S. (2013). Digital animation as a method to disseminate research findings to the community using a community-based participatory approach. *American Journal of Community Psychology, 51*(1-2), 30-42.

Walker, P., Whittaker, C., Watson, O., Baguelin, M., Ainslie, K., Bhatia, S., . . . Cattarino, L. (2020). Report 12: The global impact of COVID-19 and strategies for mitigation and suppression.

Wallendorf, M., & Arnould, E. J. (1991). "We Gather Together": Consumption Rituals of Thanksgiving Day. *Journal of consumer research, 18*(1), 13-31. doi:10.1086/209237

Wallerstein, N. B., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health promotion practice, 7*(3), 312-323. doi:10.1177/1524839906289376

Warren, J. (2007). *Service user and carer participation in social work*: Learning Matters.

Wasti, S. P., Randall, J., Simkhada, P., & Van Teijlingen, E. (2011). In what way do Nepalese cultural factors affect adherence to antiretroviral treatment in Nepal? *Health Science Journal, 5*(1), 37-47.

Wasti, S. P., Simkhada, P., Randall, J., & van Teijlingen, E. (2009). Issues and challenges of HIV/AIDS prevention and treatment programme in Nepal. *Global Journal of Health Science, 1*(2), 62-72. Retrieved from http://eprints.bournemouth.ac.uk/

Watson, M., & Shove, E. (2008). Product, competence, project and practice: DIY and the dynamics of craft consumption. *Journal of Consumer Culture, 8*(1), 69-89. doi:10.1177/1469540507085726

WB. (1993). *World Development Report 1993: Investing in Health, Volume1*: The World Bank.

Weine, S. M., & Kashuba, A. B. (2012). Labor migration and HIV risk: a systematic review of the literature. *AIDS and Behavior, 16*(6), 1605-1621.

Weinmann, M., Schneider, C., & Brocke, J. v. (2016). Digital Nudging. *Business & Information Systems Engineering, 58*(6), 433-436. doi:10.1007/s12599-016-0453-1

Whitacre, R., Agarwal, S., & Moon, S. (2021). *20th century disease eradication programs & their legacies for health systems*. Retrieved from

Whitehead, D. (2004). Health promotion and health education: advancing the concepts. *Journal of Advanced Nursing, 47*(3), 311-320. doi:10.1111/j.1365-2648.2004.03095.x

WHO. (1978). *Primary health care: report of the International Conference on primary health care, Alma-Ata, USSR, 6-12 September 1978*: World Health Organization.

WHO. (1986). *The Ottwa Charter for Health Promotion, 1986*. Retrieved from https://www.euro.who.int/

WHO. (1998). *Health promotion glossary*.

WHO. (2002). *The World Health Report 2002: Reducing Risks, Promoting Healthy Life*. Retrieved from https://apps.who.int/

WHO. (2008). *Closing the gap in a generation: health equity through action on the social determinants of health: final report of the commission on social determinants of health*: World Health Organization.

WHO. (2009). *Milestones in health promotion: Statements from global conferences* (6161115336). Retrieved from

WHO. (2015). *Tracking universal health coverage: first global monitoring report*: World Health Organization.

WHO. (2018). *Health promotion and disease prevention through population-based interventions, including action to address social determinants and health inequity*. Retrieved from http://www. emro. who. int/aboutwho/public-health-functions/health-promotion-disease-prevention. html.[Stand: 02.09. 2017]

WHO. (2021). WHO Coronavirus Disease (COVID-19) Dashboard. Retrieved from https://covid19.who.int/. Retrieved 10/10/2020, from World health Organization https://covid19.who.int/

WHO Commission on Social Determinants of Health. (2008). *Closing the gap in a generation: health equity through action on the social determinants of health: Commission on Social Determinants of Health final report*. Geneva, Switzerland: World Health Organization.

Whyte, W. F., Greenwood, D. J., & Lazes, P. (1991). Participatory action research: Through practice to science in social research. *Participatory action research, 32*(5), 19-55. doi:10.4135/9781412985383.n2

Wilson, S. (2020). Pandemic leadership: Lessons from New Zealand's approach to COVID-19. *Leadership*, 1742715020929151.

Worboys, M. (2000). *Spreading germs: disease theories and medical practice in Britain, 1865-1900*: Cambridge University Press.

Xie, C., Bagozzi, R. P., & Troye, S. V. (2008). Trying to prosume: toward a theory of consumers as co-creators of value. *J. of the Acad. Mark. Sci., 36*, 109-122. doi:10.1007/s11747-007-0060-2

Xie, C., Bagozzi, R. P., & Troye, S. V. (2008). Trying to prosume: toward a theory of consumers as co-creators of value. *Journal of the Academy of marketing Science, 36*(1), 109-122.

Yadav, S. N. (2018). Risk of HIV among the seasonal Labour Migrants of Nepal. *Online Journal of Public Health Informatics, 10*(1).

Yang, X., Derlega, V. J., & Luo, H. (2007). Migration, behaviour change and HIV/STD risks in China. *AIDS care, 19*(2), 282-288. doi:10.1080/09540120600909414

Ybarra, M. L., DuBois, L. Z., Parsons, J. T., Prescott, T. L., & Mustanski, B. (2014). Online focus groups as an HIV prevention program for gay, bisexual, and queer adolescent males. *AIDS Education and Prevention, 26*(6), 554-564. doi:10.1521/aeap.2014.26.6.554

Zickuhr, K. (2013). Who's not online and why. Retrieved from https://www.pewresearch.org/

Appendix

Appendix A. Participant Information Sheet

Date of Information Sheet Produced: 21 June 2017

Project Title:

Creating space for Nepalese male migrant workers from Nepal to co-create Internet-based HIV prevention

An invitation

Namaste/Kio Ora/Hello Everyone,

My name is Til Bahadur Chhetri, a PhD student at AUT University, New Zealand. This is my PhD project, and I am the primary researcher of this project. Other members of this project are my PhD supervisors, Dr Cath Conn and Dr Tineke Water from AUT University. I would like to invite you to participate in this research on 'creating a space for Nepalese male migrant to co-create internet-based HIV prevention'. Your participation in this research is voluntary, and it is your choice if you would like to take part or not, and you can terminate your participation any time before the completion of the research project.

What is the research purpose of this research?

The research is a part of my (Til's) PhD project. This project aims to collaborate with you (Nepalese male migrant workers) to develop internet-based HIV prevention. In this research, research team will share knowledge on HIV/AIDS, experience as a migrant worker and skills on using internet and smartphone and will develop HIV prevention program which may be in the form of videos, photographs, drawings, apps or any suitable form as selected by our research team.

How was I identified and why am I being invited to participate in this research?

You are a Nepalese male migrant worker from Kaski District, Nepal. Your age is over 18 years old. You have experience as a migrant worker for more than six months.

You are a regular internet and smartphone user. In this regard, you are the potential participant who can contribute in this research. Therefore, I have invited you to participate via an advertisement on my Facebook page, local Media, as well as using word of mouth through your peer networks.

How do I agree to participate in this research?

You can provide your decision though email, text messaging or phone call to me within one week from this information meeting or you get the information sheet. Then, you will provide written consent to primary researcher before first FGD.

What will happen in this research?

- You are invited to participate in an information meeting in which I provide information sheet and provide detail information on research methodology, method, research objectives, and your role in detail and answer your research related questions.
- Among you all who participate in this information meeting, I will recruit up to 8 people who will first give your written consent and form a research team. Then, we will participate in about 7 Focus Group Discussions (FGDs). Each FGD will be about 2 hours.
- In the first FGD, we will participate in icebreaker(s) such as games and in sharing based participatory video recording and editing workshops to develop friendly, mutual, and supportive relationships. In second and third FGDs, we will share stories on migrant work experience, knowledge of HIV/AIDS and internet use, and internet search and presentation. In sixth to nineth FGDs we will participate in concept generation, practice, and presentation to co-create internet based tool(s) for HIV prevention among Nepalese male migrant workers.
- The research is a collaboration between researcher and research participants.You will share role and responsibilities in data collection, analysis and co-creation process in this research. We will reflect on generated information and the process in each FGD, and I will do the final analysis and develop my PhD thesis.

What are the discomforts and risks?

I hope that you will enjoy your role in the project. In FGDs, we may share stories of Nepalese male migrant workers' HIV risky sexual practices and condom use to understand HIV risk factors, safer sex practice and HIV prevention strategy. You may feel discomfort to participate in such discussions. In the initial stage, we may not be fully familiar with each other and may feel uncomfortable participating freely. At the same time, you might feel difficult to develop concepts and co-create internet-based HIV prevention strategy.

In FGD method, you may risk losing your privacy through your co-participants who may disclose your personal information and experiences shared in the discussion. Therefore, I request you not to share any your personal experiences and identifier in any discussions.

How will these discomforts and risks be alleviated?

To avoid discomfort and risks, we will share time, create online groups for sharing in transition period between FGDs, participate in interesting icebreakers, and share based participatory video workshops to be familiar with each other. We will select suitable and safe space for focus group discussion. If you feel uncomfortable with any question or topic, you will have the right not to answer or turn off the audio recorder or not participate in the discussion. We will have written consent and verbal commitment for not to share who said what outside the team and play a responsible role. We should be careful while any personal information and identifier in FGD. If required, I

will arranges free counselling and HIV testing service for you.

What are the benefits?

You will get a space to understand the underlying factors that may put migrant workers at high-risk of HIV. Then, you will get a space to contribute to co-create artefact(s) as a tool for internet based HIV prevention to halt HIV infection among Nepalese male migrant workers. This research will help me to complete my PhD project as well as will extend my knowledge on Nepalese migrant workers situation, and the use of internet and smartphone for HIV prevention.

How will my privacy be protected?

All information will remain strictly confidential and any people outside the research team will not know who said what in the discussion. You will be presented using code or pseudonym and your personal information will be removed from any analysis and publications. You can decide what to share and how to share.

How much time will it all take?

You will participate in 7 focus group discussion in about oneand half monthperiod. Each discussion will be about 2 hours.

What are the costs of participating in this research?

You will not pay any cost to participate in this research. We will provide a small reimbursement for your transportation fare and snacks for each participation.

What opportunity do I have to consider this invitation?

You will get two weeks from when you participate in information meeting and/or read information sheet.

Will I receive feedback on the results of this research?

You will participate and reflect on information generation and analysis and co-creation of internet based tool(s). Further, you can choose the option to receive summary of research findings on the consent form to get final report. I will provide a copy of the summary of research findings and feedback.

What do I do if I have concerns about this research?

For concerns regarding the nature of this research, you can contact to the Project Supervisor, Dr. Cath Conn, at cath.conn@aut.ac.nz, +64 921 9999 ext. 7407/ 7910 OR

For concerns regarding the conduct of this research, you can contact to Executive Secretary of AUTEC, Kate O'Connor, ethics@aut.ac.nz, +64 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are can contact the research team as follows:

Contact Details:

Til Chhetri (primary researcher)

Phone: +977-9846257128

Email: savenature13@gmail.com

Project Supervisors Contact Details:

Dr Cath Conn (primary supervisor)

Email: cath.conn@aut.ac.nz
Phone: +64 9219999 ext. 7407

Dr. Tineke Water (co-supervisor)
Email: tineke.water@aut.ac.nz
Phone: +64 9219999 ext. 7335

Approved by the Auckland University of Technology Ethics Committee on *10 July 2017*, AUTEC Reference number17/212.

सहभागी जानकारी पत्र (Participant Information Sheet)

मितिः ७ असार २०७४ (21 June, 2017)

शीर्षक: नेपाली पुरुष प्रवासी कामदारहरुका लागि इन्टरेटमा आधारित एचआइभी रोकथाम को कायक्रम विकासको लागि स्थान सृजना

निमन्त्रणा (An Invitation)

नमस्कार,

मेरो नाम तिल वहादुर क्षेत्री, AUT University New Zealand, मा विद्यावारिधि (PhD) को विद्यायार्थी हो । यो मेरो विध्यावारिधि परियोजना हो र म यस परियोजनाको मुख्य अनुसन्धानकर्ता हो। यस परियोजनाका अन्य सदस्यहरु मेरा

विध्यावारिधि सुपरिवेक्षकहरु डाक्टर क्याथ कोन र डाक्टर टिनिका वाटर हुनुहुन्छ । तपाईहरुलाइ मेरो "नेपाली परुष प्रवासी श्रमिकहरु का लागि इन्टरनेटमा आधारित एचआइभि रोकथामको सह-निर्माण गर्नका लागि स्थान सिर्जना" अध्ययनमा सहभागी हुनको लागि निमन्त्रणा गर्दछु । यस अनुसन्धानमा तपाइको सहभागिता स्वेच्छिक रहनेछ, यसमा भाग लिने नलिने तपाइको रोजाइ हो र अनुसन्धान सकिनु पूर्व तपाइले आफ्नो सहभागिता जुनसुकै समयमा पनि रद्द गर्न सक्नुहुनेछ ।

यस अध्ययनको उद्देस्य के हो?

यो अध्ययन मेरो (तिल को) विध्यावारिधी अध्ययनको एउटा भाग हो । यस अध्ययनको उद्देस्य तपाइ (नेपाली पुरुष प्रवासी कामदार) हरु सँग सहकार्य गरी इन्टरनेट मा आधारित ज्स्रु रोकथाम निर्माण गनु हो । तपाइलाइ अध्ययनमा सह अनुसन्धानकर्ता को रुपमा नियुक्त गरिनेछ । त्यसपछि हामी, अनुसन्धान समूह, एचआइभी/एडस् को वारेमा हाम्रा ज्ञानहरु प्रस्तुत गर्नेछौ, प्रवासी कामदार हुदाका अनुभवहरु, र इन्टरनेट र स्मार्टफोन का सिपहरु प्रस्तुत गर्नेछौ र एचआइभि (HIV) रोकथामका कार्यक्रम तयार पार्नेछौ जुन भिडियो, फोटोहरु, चित्रहरु, मोवाइल एप्सहरु वा अनुसन्धान समूहले रोजेको कुनै उपयुक्त रुपमा हुनेछ ।

मलाइ कसरी पहिचान गरियो र किन म सहभागीताको लागि निमन्त्रित भए ?

तपाइ नेपालको कास्की जिल्लामा बसोवास गर्ने पुरुष प्रवासी कामदार हुनुहुन्छ । तपाइ १८ वर्ष उमेर पुरा गरेको हुनुहुन्छ । तपाइसँग ६ महिना भन्दा बढि विदेशमा काम गरेको अनुभव छ । तपाइ नियमित इन्टरनेट र स्मार्टफोन प्रयोग गर्नुहुन्छ । तपाइ नेपाली पुरुष प्रवासी कामदारका लागि इन्टरनेट मा आदारित एचआइभि रोकथामका लागि सहकार्य गर्न इच्छुक र उपलब्ध हुनुहुन्छ । यस अर्थमा, तपाइ सम्भावित सहभागी हुनुहुन्छ जसले यस अनुसन्धानमा योगदान गर्न सक्नुहुन्छ ।त्यसकारण, मैले आफ्नो फेसबुक पेज र स्थानीय सन्चार माध्ययमा विज्ञापन गरेर साथै तपाइहरुको साथीहरुको सन्जाल प्रयोग गरी निमन्त्रणा गरेको छु ।

यस अनुसन्धान मा सहभागिता को सहमति कसरी व्यक्त गर्ने?

तपाइले जानकारी बैठकमा भागलियको वा जानकारी पत्र पढेको दुइ हप्ता भित्र मलाइ इमेल, फोनकल, म्यासेज वाट आफ्ने निर्णय व्यक्त गर्नुहुनेछ । त्यसपछि पहिलो लक्षित समुह छलफल अगाडी लिखित सहमति प्रदान गर्नुहुनेछ ।

यस शोधमा के हुनेछ?

- तपाइ जानकारी बैठकमा सहभागि हुनुहुन्छ जसमा म अनुसन्धान जानकारी पत्र प्रदान गर्छु र अनुसन्धान पद्दती, विधि, उद्देश्य र तपाइको भुमिका बिस्तृत छलफल गर्नेछु र तपाइको अनुसन्धान सँग सम्वन्धित जिज्ञासाहरु समाधान गर्नेछु । तपाइहरु जानकारी बैठकमा सहभागिता भएका व्यक्तिहरुमध्ये, पहिले लिखित सहमति प्रदान गर्ने ८ व्यतिलाइ नियुक्त गरी अनसन्धान टोली निर्माण गर्नेछु । त्यसपछि, हामी करिब एक महिनाको अवधिमा ७ वटा लक्षित समुह छलफल मा भाग लिनेछौ । प्रत्यक छलफछ करिब २ घण्टाको हुनेछ ।

- पहिलो लक्षित समुह छलफलमा हामी एक अर्कासँग मित्रवत, आत्मीय र सहयोगी सम्वन्ध स्थापनाका लागि रमाइला क्रियाकलापहरु जस्तै खेलहरु र सहभागितात्मक भिडियो रेकर्डिगं र सम्पादन कार्यसालामा सहभागि हुनेछौ । दोश्रो र तेश्रो छलफलमा हामी प्रवासमा काम गर्दाका अनुभव का कथाहरु प्रस्तुत गर्नेछौ, एचआइभि/एडस र इन्टरनेट प्रयोग को ज्ञानहरु साट्नेछौ र इन्टरनेट मा खोज रप्रस्तुती गर्नेछौ । चौथौ देखि सातौ समुह छलफलमा नेपाली पुरुष प्रवासी कामदारहरु मा एचआइभि रोकथामका लागि अवधारणा विकास, अभ्यास, प्रस्तुती र रचनात्मक सृजनाको संयुक्त निर्माण गर्नेछौ ।

- यो अनुसन्धान अनुन्धानकर्ता र सहभागी सदस्यहरुको विच सहकार्य हो । यस अनुसन्धानमा तपाइले डाटा संकलन, विश्लेषण र सह-निर्माण प्रक्रियामा भुमिका र उत्तरदायित्व वहन गर्नुहुनेछ। हामी हरु प्रत्यक लक्षित समुह छलफलमा संकलन गरियका जानकारी र त्यसका प्रक्रिया का वारेमा गम्भिर छलफल गर्नेछौ र अन्तिम विश्लेषण म गर्नेछु र मेरो पिएचडी को थेसिस तयार पार्नेछु ।

असहजता र जोखिम हरु के के हुनेछन्?

मलाइ आशा छ तपाइले यो परियोजना मा तपाइको भुमिका रमाइलो लाग्नेछ । तर

लच्छित समह वैठकमा, हामीले ज्स्रु जोखिम तत्वहरु, सुरक्षित यौन व्यवहार र एचआइभि रोकथाम प्रणली को वारेमा बुझ्नको लागि नेपाली प्रवासी पुरुष कामदारका यौन अभ्यासहरु र कण्डम को प्रयोगका वारेमा जानकारी प्रस्तुत गर्न सकिनेछौ । यस्ता विषयहरुमा छलफल तपाइलाइ असहज लाग्नसक्नेछ । सुरुवाति समयमा हामी एक आपसमा पुणरुपले घुलमिल नहुनाले तपाइ आफुलाइ स्वतन्त्र र पुर्ण रुपमा प्रस्तुत गर्न असहज महसुस हुनसक्नेछ । त्यसैगरी, तपाइलाइ इन्टरनेटमा आधारित HIV रोकथाम को अवधारण प्रस्तुत गर्न र निर्माण गर्न अप्ठ्यारो महसुस हुन सक्नेछ । त्यसको अलावा, लक्छित समुह वैठक मा सहभागिहरु मर्फत तपाइले आफ्नो व्यक्तिगत अनुभव र व्यवहारहरु सार्वजनिक हुनसक्ने जोखिममा हुनुहुनेछ । त्यसैले म तपाइलाइ आफ्ना व्यक्तिगत विवरण, अनुभव र पहिचान कुनैपनि लक्षित समुह छलफलमा नखुलाउनु हुन र सहभागी साथीहरुको कुनैपनि जानकारी समुहभन्दा वाहिर नखुलाउन हार्दिक अनरोध गर्दछु ।

यस्ता अप्ठ्यारा र जोखिमलाइ कसरी हटाइनेछ?

माथि उल्लेखित असहजता र जोखिमलाइ हटाउन र एक अर्कालाइ बुझ्नको लागि हामी भेट्नेछौ र सँगै समय विताउनेछौ । हामी समुह छलफलहरु विचको समयमा अनलाइन मा एकअर्कासग सम्पर्कमा रहनेछौ । हामीहरु मनोरन्जनात्मक क्रियाकलापमा सहभागि भइ मित्रता, आत्मियता र सहयोगात्मक सम्वन्ध निर्माण गर्नेछौ। समुह छलफलको लागि हामी सबै मिलेर उपयुक्त र सुरक्षित स्थान र विधि रोज्नेछौ । यदि तपाइलाइ कुनै प्रश्न वा शिर्षक असहज लागेमा तपाइलाइ उक्त प्रश्नको उत्तर नदिन, टेप रेकर्डर बन्ध गर्न वा उक्त छलफलमा भाग नलिन पाउने पुर्ण अधिकार छ । त्यसको अतिरिक्त, हामी सबै सहभागीहरुले सम्झौता पत्रमा हामीले व्यक्तिगत पहिचान र कसले के भन्यो भन्नेकुरा अध्ययन समुहमा मात्र सिमित राख्ने लिखित मौखिक सहमति गर्नेछौ र जिम्बेवार भुमिका खेल्नेछौ साथै अरुलाइपनि अनुरोध र प्रोत्साहन गर्नेछौ । हामीले समुह छलफलमा कुनैपनि व्यक्तिगत विवरण र पहिचान नखुलाउन अनुरोध गर्दछु । यदि तपाइलाइ आवश्यक परेमा, निशुल्क परामर्श सेवाको व्यवस्था पनि गर्ने छु ।

के के फाइदाहरु हनेछन्?

तपाइले पुरुष प्रवासी कामदाहरुलाई एचआइभि को उच्च जोखिममा पार्ने कारकहरुको वारेमा बुझ्ने र आफुले देखेका सुनेका कुराहरु प्रस्तुत गर्ने अवसर गर्नु हुनेछ । त्यसपछि, पुरुष प्रवासी कामदारहरुमा एचआइभि संक्रमण रोक्नकालागि तपाइले इन्टरनेट मा आधारित एचआइभि रोकथाम को रचनात्मक काममा आफ्नो योगदान दिने स्थान प्राप्त गर्नुहुनेछ । यस अध्ययनमा सहभागी भएर तपाइले Participatory Action Reserch (सहभागिता मुलक कार्य अनुसन्धान) पद्दती को वारेमा सिक्नुहुनेछ जुन तपाइलाइ भविष्यमा आफ्नो टोल, कार्यलय वा अन्य स्थानमा सुधार कार्यक्रम गर्न काम लाग्नेछ । यस अनुसन्धानले मलाइ विद्यावारिधी अध्ययन पुरा गर्न मद्दत पुग्नेछ साथै नेपाली प्रवासी कामदारहरुका

वारेमा जान्ने र एचआइभि रोकथामका लागि इन्टरनेट र स्मार्टफोनको प्रयोग सम्बन्धी थप ज्ञान प्राप्त गर्ने अवसर मिल्नेछ ।

मेरो गोपनियता कसरी सुशक्षित गरिनेछ?
सम्पर्ण जानकारीहरु पर्णरुममा अनुसन्धान टोलीमा मात्र सिमित रहने र समुह वाहिरका कुनैपनि व्यक्तिलाइ छलफलमा कसले के भन्यो भन्ने कुरा गोप्य राखिनेछ ।
कुनैपनि विश्लेषण र प्रकाशनमा तपाइको व्यक्तिगत विवरण हटाइने छ र कोड वा उपनाम ले प्रस्तुत गरिनेछ । तपाइले के कुरा शेयर गर्ने र कसरी शेयर गर्न निर्णय आफै गर्न सक्नुहुनेछ। लच्क्षित समुह वैठकमा संकलित सम्पुर्ण
विवरणहरुमा म र मेरो विद्यावारिधी सुपरिवेक्षक हरुको मात्र पहुच रहनेछ र मेरो शोधपत्र लेख्न र शैक्षिक प्रकासनमा मात्र प्रयोग गरिनेछ।

यो अध्यनले कति समय लिनेछ ?
तपाइ करिव एक महिना अवधिमा ७ वटा लक्षित समुह छलफलमा भाग लिनुहुनेछ । प्रत्यक छलफल करिव २ घण्टाको हुनेछ ।

अध्ययनमा सहभागि हुन कति खर्च लाग्छ?
यस अध्ययनमा सहभागी हुन तपाइको कुनै खर्च लाग्नेछैन। हामीले सहभागीलाई सहभागिता को लागि यातायात खर्च वापत सानो रकम र नास्ताको व्यवबस्ता गरेका छौ ।

यस निमन्त्रणालाई विचार गर्न मैले कस्तो मौका पाउनेछु?
तपाइले जानकारी बैठकमा भाग लिएपछि वा जानकारी पत्र पढेपछि यस अनुसन्धानमा भाग लिने या नलिने विचार गर्न २ हप्ताको समय प्राप्त गर्नु हुनेछ ।

के मैले अध्ययनको नतिजाको वारेमा केही सुझाव प्राप्त गर्नेछु?
तपाइ अनुसन्धानको जानकारी संकलन, प्रारम्भिक विश्लेषण र एचआइभि रोकथाम प्रणली निर्माण का प्रकृयामा भाग लिनुहुनेछ। त्यसको अतिरिक्त तलाइले अन्तिम रिपोर्ट प्राप्त गर्न सम्झौता पत्रमा रहेको अप्सन रोज्न सक्नुहुनेछ।

यदि यस अध्ययनका विषयमा केही समस्या भय के गर्ने?
यस अनुसन्धानको प्रकृति सम्बन्धि जिज्ञासा भए तपाइले यस अध्ययनको सुपरभाइजर
म्च। ऋवतज ऋयलल (डा. क्याथ कोन) cath.conn@aut.ac.nz, ००६४ ९९२१९९९९ भहत ७४०७ मा सम्पर्क गर्नसक्नुहुनेछ । अथवा
यस अनुसन्धानको आचरण सम्बन्धि जिज्ञासा भए तपाइले ब्यत्म्ऋ कार्यवाहक सचिव केट ओ'कोन्नोर (Kate O'Connor) लाइ ethics@aut.ac.nz, +६४ ९२१ ९९९९ ext ६०३८ मा सम्पर्क गर्न सक्नुहुनेछ ।

थप जानकारीको लागि कसलाइ सम्पर्क गर्ने?
कृपया यो जानकारी पत्र र सम्झौता पत्रको एक प्रति भविश्यको सन्दर्भ को लागि राख्नुहोला । जानकारीको लागि अनुसन्धान कर्ता समुहलाइ निम्न बमोजिम सम्पर्क गर्नुहोला ।
सम्पर्क विवरण:
तिल ब. क्षेत्री (प्रमुख अनुसन्धानकर्ता)
फोन: +९७७ ९८४६२५७१२८
इमेल: savenature13@gmail.com

अनुसन्धान पर्यवेक्षक सम्पर्क विवरण
डा. क्याथ कन (मुल पर्यवेक्षक)
इमेल: cath.conn@aut.ac.nz
फोन: +६४ ९२१९९९९ ext ७४०७

डा. टिनिका वाटर (सहायक पर्यवेक्षक)
इमेल: tineke.water@aut.ac.nz
फोन: +६४९२१९९९९ ext ७३३५

Approved by the Auckland University of Technology Ethics Committee on *10 July 2017*, AUTEC Reference number17/212.

Appendix B. Consent Form

Project title:	***Creating Space for migrant workers from Nepal to co-create internet-based HIV prevention program***
Project Supervisor:	***Dr. Cath Conn (Primary Supervisor), Dr. Tineke Water (Second Supervisor)***
Researcher:	***Til Bahadur Chhetri***

- ❖ I have read and understood the information provided about this research project in the Information Sheet dated …….. (dd mm yyyy).
- ❖ I have had an opportunity to ask questions and to have them answered.
- ❖ I understand that identity of my fellow participants and our discussion in FGDs are confidential to the group and I agree to keep this information confidential.
- ❖ I understand that notes will be taken during the FGDs and they will also be audio-taped and transcribed.
- ❖ I understand that any information and findings will be used only for primary researcher's academic purpose and will not be used/published in any form outside this project without my written consent.
- ❖ I permit primary researcher to use written, printed and electronic materials from this research exclusively for his academic purposes.
- ❖ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ❖ I understand that if I withdraw from the study then, while it may not be possible to destroy all records of the focus group discussion of which I was part, I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ❖ I agree to take part in this research.
- ❖ I wish to receive a summary of the research findings (please tick one): Yes☐ No☐

Participants signature: .....……

Participant's name: .....……

Participant's Contact Details (if appropriate):

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on type the date on which the final approval was granted AUTEC Reference number type the AUTEC reference number

Note: The Participant should retain a copy of this form.

Appendix B

सम्झौतापत्र (Consent Form)

कार्यक्रम शिर्षक: नेपाली पुरुष प्रवासी कामदारहरुका लागि इन्टरेटमा आधारित एचआइभी रोकथाम को कार्यक्रम विकासको लागि स्थान सृजना

परियोजना पर्यवेक्षक: **डा. क्याथ कोन (प्रथम पर्यबक्षक), डा. टिनिका वाटर (द्वित्तीय पर्यबक्षक)**

शोधकर्ता: **तिलबहादुर क्षेत्री**

- मिति .....(गते/महिना/वर्ष) मा उपलब्ध गरिएको जानकारी पत्रमा यस अध्ययन को वारेमा रहेको सम्पुर्ण विवरण पढेर बुझेको छु ।
- मैले आफ्ना जिज्ञाशा राख्ने मौका पाएको थिय जुन उत्तरित गरिएको थियो ।
- मेरा सह-अनुसन्धानकर्ता साथिहरुको परिचय र हाम्रो लच्छित समुह छलफल का विवरणहरु यस समुह भित्र मात्र सिमित रहनेछ भन्ने मैले बुझेको छु र म त्यस्ता जानकारी गोप्य राख्न सहमतछु ।
- लक्षित समुह छलफलमा बुदा टिपिनेछ र तिनीहरुको श्रब्य (audio) रेकर्ड गरी प्रतिलेखन गरिने छ भन्ने कुरा मैले बुझेको छु ।
- कुनै पनि जानकारी र उपलब्धीहरु प्राइमरी अनुसन्धानकर्ताको शैक्षिक प्रयोजनको लागि मात्र प्रयोग गरिनेछ र मेरो लिखित अनुमति विना कहिकतै प्रयोग वा प्रकासित गरिने छैन ।
- मैले प्रमुख अनुसन्धानकर्तालाइ यस अनुसन्धानवाट उपलब्ध हस्तलिखित, र इलेक्ट्रोनिक श्रब्यदृश्य सामाग्रीहरु उस्को शैक्षिक प्रयोजनको लागि प्रयोग गर्ने अनुमति प्रदान गर्दछु ।
- मेरो यस अनुसन्धानमा सहभागित स्वइच्छिक हो, म अध्ययनवाट कुनै प्रकारले वन्चित नभइ कन कुनैपनि समयमा निस्कन सक्नेछु भन्ने बुझेको छु ।
- यदि मैले आफुलाइ अध्ययनवाट फिर्ता गरेभने मैले लक्षित समुह छलफलमा भागलिदा उपलब्ध गराएका सम्पुर्ण जानकारीहरु हटाउन सम्भव त हुनेछैन तर मेरो भनेर चिनिने कुनैपनि डाटा हटाउने वा प्रयोग भइरहन दिन रोज्ने मौका प्रदान गरिनेछ । तर एकपटक उपलब्धीहरु निकाली सकेपछि मेरो डाटाहरु मेटाउन सकिने छैन भन्ने मैले बुझेको छु ।
- म यस अध्ययनमा सहभागी हुन सहमत छु ।
- म यस अध्ययनको अन्तिम प्रतिवेदन को एक प्रति प्राप्त गर्न चाहन्छु (कृपया एउटा रोज्नुहोस): चाहनुहुन्छ ( ) हुदैन ( )

सहभागिको हस्ताक्षर: .....

सहभागिको नाम: .....

सहभागिको सम्पर्क विवरण (सम्भव भएसम्म): .....

.....

.....

मिति: .....

Approved by the Auckland University of Technology Ethics Committee on 10 July 2017 AUTEC Reference number 17/212.

Note: The Participant should retain a copy of this form.

Appendix C. Ethical Approval Letter from AUTEC

AUTEC Secretariat

Auckland University of Technology
D-88, WU406 Level 4WU Building City Campus
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

12 July 2017

CathConn
Faculty of Health and Environmental Sciences

Dear Cath

Ethics Application: 17/212**Creating a space for Nepalese male migrant workers to co-create Internet- based HIV prevention**

I wish to advise you thatthe Auckland University of Technology Ethics Committee (AUTEC) has **approved** your ethics application at its meeting of10 July 2017.

This approval is for three years, expiring 10 July 2020.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through http://www.aut.ac.nz/researchethics.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through http://www.aut.ac.nz/researchethics.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form:http://www.aut.ac.nz/researchethics.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Non-Standard Conditions of Approval

1. The committee appreciates that PAR is an evolving methodology and requests that a report be forwarded to AUTEC on initial outcomes and protocols agreed upon by the co-researchers.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from anotherinstitution or organisation then you are responsible for obtainingit. If the research is undertaken outside New Zealand, you need to meet alllocality legal and ethical obligations and requirements.You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries,please contact ethics@aut.ac.nz

Yours sincerely,

Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: savenature13@gmail.com; Tineke Water

Appendix D. Ethical Approval Letter from NHRC

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.: 579

20 September 2017

Mr. Til Bahadur Chhetri
Principal Investigator
Auckland University of Technology, Auckland

Ref: **Approval of thesis proposal** entitled **Creating a Space for Nepalese Male Migrant Workers to Co-create Internet Based HIV Prevention**

Dear Mr. Chhetri

It is my pleasure to inform you that the above-mentioned proposal submitted on **3 August 2017** (**Reg. no. 299/2017** please use this Reg. No. during further correspondence) has been approved by Nepal Health Research Council (NHRC) Ethical review board on **13 September 2017**.

As per NHRC rules and regulations, the investigator has to strictly follow the protocol stipulated in the proposal. Any change in objective(s), problem statement, research question or hypothesis, methodology, implementation procedure, data management and budget that may be necessary in course of the implementation of the research proposal can only be made so and implemented after prior approval from this council. Thus, it is compulsory to submit the detail of such changes intended or desired with justification prior to actual change in the protocol. Expiration date of this proposal is **December 2017.**

If the researcher requires transfer of the bio samples to other countries, the investigator should apply to the NHRC for the permission. The researchers will not be allowed to ship any raw/crude human biomaterial outside the country; only extracted and amplified samples can be taken to labs outside of Nepal for further study, as per the protocol submitted and approved by the NHRC. The remaining samples of the lab should be destroyed as per standard operating procedure, the process documented, and the NHRC informed.

Further, the researchers are directed to strictly abide by the National Ethical Guidelines published by NHRC during the implementation of their project proposal and **submit progress report in between and full or summary report upon completion.**

As per your thesis proposal, the total research amount is **NRs. 70,000.00** and accordingly the processing fee amounts to **NRs-10,000.00**. It is acknowledged that the above-mentioned processing fee has been received at NHRC.

If you have any questions, please contact the Ethical Review M & E Section at NHRC.

Thanking you,

Prof. Dr. Anjani Kumar Jha
Executive Chairman

Appendix E. Research Advertisement Sample

AUT University PhD Research

on

Creating a Space for Nepalese Male Migrant Workers to Co-create Internet-based HIV Prevention

Calls for Participants

Required criteria:

- Nepalese male migrant workers from Kaski District,
- Age 18 yearsand above,
- worked as migrant workers for more than 6 month,
- Internet and smartphone regular user having good knowledge on them,
- Interested to work in team and must be able to provide required time.

(A small amount for transportation and snacks will be arranged)

If you think, you meet above criteria, you are interested and available, please contact:

Til Chhetri

savenature13@gmail.com or +977-9846257128

AUT University विद्यावारिधी (PhD) अनुसन्धान

नेपाली पुरुष प्रवासी कामदारहरुका लागि

इन्टरनेट मा आधारित एचआइभि रोकथाम का लागि स्थान

सहभागिहरुको आवश्यकता

आवश्यक मापदन्डहरु:

- कास्की जिल्ला वसोवास गर्ने प्रवासी कामदार हुनुपर्ने,
- उमेर १८ बर्ष पुरा भएको हुनुपर्ने,
- प्रवासी कामदारको रुपमा कम्तिमा ६ महिना भन्दा बढि काम गरेको हुनुपर्ने
- इन्टरनेट र स्मार्टफोन को नियमित प्रयोगकर्ता र राम्रो ज्ञान भएको हुनुपर्ने
- समुहमा काम गर्न इच्छुक र आवश्यक समय प्रदान गर्न सक्ने हुनुपर्ने

(यातायात खर्च का लागि सानो रकम र खाजा को व्यवस्था गरिएको छ।)

यदि तपाइ सोच्नुहुन्छ, तपाइमा माथि उल्लेखित विशेषताहरु मेलखान्छ, इच्छुक र उपलब्ध हुनुहुन्छ, कृपया थप जानकारी का सम्पर्क गनुहोस

तिल ब. क्षेत्री

savenature13@gmail.com अथवा +९७७ ९८४६२५७१२८