

**“SYNDEMICS OF DEPRESSION, HIGH RISK BEHAVIOURS,  
VICTIMISATION AND THEIR ASSOCIATION WITH SEXUALLY  
TRANSMITTED INFECTIONS AMONG MEN WHO HAVE SEX WITH  
MEN AND TRANSGENDERS IN KOLAR  
- A MIXED METHOD STUDY”**

**By**

**DR. G MOHAN BABU, MBBS**



Dissertation submitted to the

**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH  
CENTRE, KOLAR, KARNATAKA**

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

***DOCTOR OF MEDICINE (M.D.)***

***IN***

***COMMUNITY MEDICINE***

Under the guidance of

**DR. MUNINARAYANA C., MBBS, MD**

**PROFESSOR**



**DEPARTMENT OF COMMUNITY MEDICINE,  
SRI DEVARAJ URS MEDICAL COLLEGE, TAMAKA, KOLAR**

**2025**

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**DR. MUNINARAYANA C MD.**

Professor,

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*DR. SUNIL B N*

I/C HOD & Associate Professor,

Department of Commmunity Medicine

Sri Devaraj Urs Medical College, Tamaka, Kolar

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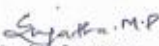
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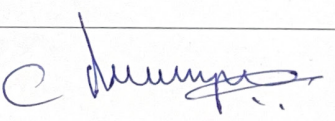


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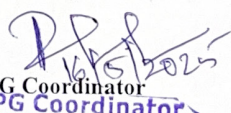
  
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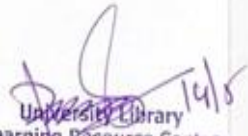
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### **ABBREVIATION**

| ABBREVIATION | FULL FORM                                                          |
|--------------|--------------------------------------------------------------------|
| AIDS         | Acquired Immunodeficiency Syndrome                                 |
| AOR          | Adjusted Odds Ratio                                                |
| ANOVA        | Analysis of Variance                                               |
| ART          | Antiretroviral Therapy                                             |
| CAI          | Condomless Anal Intercourse                                        |
| CDC          | Centers for Disease Control and Prevention                         |
| CI           | Confidence Interval                                                |
| DSM-5        | Diagnostic and Statistical Manual of Mental Disorders, 5th Edition |
| FGD          | Focus Group Discussion                                             |
| HIV          | Human Immunodeficiency Virus                                       |
| HRBS         | HIV Risk-Taking Behaviour Scale                                    |
| IBBS         | Integrated Bio-Behavioural Surveillance                            |
| IEC          | Institutional Ethical Committee                                    |
| IRB          | Institutional Review Board                                         |
| KII          | Key Informant Interview                                            |
| LGBT         | Lesbian, Gay, Bisexual, Transgender                                |

|          |                                                                           |
|----------|---------------------------------------------------------------------------|
| LGBTQ+   | Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, and others        |
| LGBTQI+  | Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and others          |
| LGBTQIA+ | Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual, and others |
| MDD      | Major Depressive Disorder                                                 |
| MSM      | Men who have Sex with Men                                                 |
| NGO      | Non-Governmental Organization                                             |
| NACO     | National AIDS Control Organization                                        |
| OST      | Outreach Support Team                                                     |
| PHQ-9    | Patient Health Questionnaire-9                                            |
| PLHIV    | People Living with HIV                                                    |
| SD       | Standard Deviation                                                        |
| SPSS     | Statistical Package for the Social Sciences                               |
| STI      | Sexually Transmitted Infection                                            |
| TG       | Transgender                                                               |
| WHO      | World Health Organization                                                 |
| MSH      | Melanocyte stimulating hormone                                            |
| MSS      | Manchester Scar Scale                                                     |
| mTOR     | Mammalian target of rapamycin                                             |

## **ABSTRACT**

### **BACKGROUND**

*Public health research has increasingly recognized the complex health challenges faced by marginalized populations, particularly Men who have Sex with Men (MSM) and Transgender communities. This dissertation challenges traditional epidemiological approaches by employing a syndemic framework that explores how interconnected health issues develop within specific social and structural contexts. By examining the intricate relationships between social inequalities, psychological experiences, and biological vulnerabilities, the research provides a novel investigation into the health experiences of MSM and Transgender populations in Kolar district, Karnataka, India.*

### **OBJECTIVES:**

- To determine the presence and co-occurrence of depression, high risk behaviours, and victimisation and their association with occurrence of STIs among MSM and Transgenders in Kolar district.*
- To Explore the impact of psychosocial health conditions on health seeking behaviour among 'MSM and Transgenders' in Kolar district.*

### **METHODOLOGY**

*The study implemented a mixed-method research design over 18 months, involving 410 participants from MSM and Transgender communities in Kolar district. The research employed a comprehensive data collection strategy, combining standardized quantitative tools like the Patient Health Questionnaire (PHQ-9) with qualitative methods including focus group discussions and narrative interviews. An innovative analytical approach integrated syndemic theoretical frameworks, intersectionality perspectives, and advanced statistical analyses to explore the complex health dynamics of the studied population.*

## **RESULTS**

*The research revealed a complex health landscape, with 26.2% of Transsexuals diagnosed with major depressive disorder. Profound syndemic connections emerged, demonstrating intricate links between psychological distress, social marginalization, and health risks. Victimization experiences showed strong correlations with depression scores, while multivariate analysis exposed complex interrelationships between mental health, sexual risk-taking, and STI transmission risks. Drug use was identified as a critical coping mechanism, highlighting the survival strategies employed in challenging social environments.*

## **CONCLUSION**

*This dissertation provides a transformative investigation into the syndemic nature of health challenges facing MSM and Transgender populations in Kolar district. By documenting the intricate relationships between psychological suffering, social experiences, and health risks, the study challenges traditional medical research paradigms. The findings urgently call for integrated, holistic healthcare approaches that address structural discrimination and reimagine healthcare delivery for underrepresented communities, emphasizing the profound interconnectedness of health, social experiences, and individual resilience.*

**KEYWORDS :** *Syndemic, MSM, Transgender, Psychological Distress, Depression, Sexual Risk Behaviors, Victimization, HIV, Kolar District, Mental Health, Social Marginalization, Discrimination.*

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# **INTRODUCTION**

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## 1.INTRODUCTION:

Transgender, “a common term used for the expression or identity of individuals whose gender expression or identity does not align with the norms expected from their birth-assigned sex”.<sup>1</sup>

Transgender usually ‘referred to as the Hijra, Aravani, kothi in the Indian subcontinent, transgender people are an officially recognised third gender in the country and believe that they are neither male nor female’.<sup>2,3</sup>

Hijras are linked with many words depending on number of cultures and linguistics. ‘In different Indian languages, Hijras title are used as, Napunsakudu in Telugu, Thiru Nangai in Tamil, Khwaja Sara in Urdu, Khusra in Punjabi, and the Mangalamukhi in Kannada’. The Indian mythology has the third gender ingrained in it. In socio-economic terms, the community of Hijras is organized with order, and such an organization is headed by the Guru or the teacher.<sup>4</sup>

According to the census of 2011, India had more than 487 thousand people who claimed they belong to the third gender, the majority of whom are from the northern state of Uttar Pradesh.<sup>5</sup>

“Men who have Sex with Men (MSM) refers to males who engage in sexual relations with other males, irrespective of their sexual orientation or identity. This includes individuals who may identify as heterosexual, homosexual, bisexual, or may not identify with any sexual orientation at all”.<sup>6</sup>

Transgender and Men who have Sex with Men (MSM) populations represent historically neglected and vulnerable communities with complex social, medical, and human rights experiences.<sup>7</sup> These populations have existed across cultures and throughout human history,

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yet have often been misunderstood, stigmatized, and systematically excluded from mainstream social structures.<sup>8</sup>

Indian transgender individuals experience multiple barriers such as familial ostracism alongside restricted educational and job opportunities coupled with widespread discrimination which overall contributes to their marginalization hindering their participation in societal life.<sup>9</sup>

The transgender community in India demonstrates strong cultural heritage that informs their societal position while according to ancient traditions and legal frameworks and present-day struggles warrant understanding their contribution to society.<sup>10</sup>

Socioeconomic conditions that contribute substantially to the life of Transgenders and MSM, refer to the combined social and financial factors that impact their quality of life, such as income level, job opportunities, social inclusion, access to public services, and overall well-being. There is a significant gap in research on the lived experiences and socioeconomic challenges faced by transgender people in India, despite their longstanding presence in society and new legal protections. Historically, widespread discrimination has forced many transgender individuals into vulnerable situations limiting their access to education, employment, healthcare, and secure housing.<sup>11</sup>

According to Syndemics theory, diseases tend to cluster in populations because common social situations with environmental aspects and behaviors result in amplified health difficulties like HIV, substance use disorders, mental illnesses (depression or anxiety), limited health care access, occupational health risks and compromised social support systems.<sup>12–14</sup>

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In recent times, Public health research focuses on syndemic theory because they explain how different health conditions intensify one another when they appear together.<sup>15</sup>

Marginalized communities show distinct population clustering due to additional health vulnerabilities that create worse outcomes.<sup>16</sup>

Research has shown depression occurs more frequently among MSM and transgender individuals when compared to the general population because of social exclusion as well as minority stress and discrimination.<sup>17</sup>

Health outcomes among marginalised communities deteriorate due to victimization which includes physical and sexual violence because it drives fear and low self-esteem and leads to dangerous sexual practices and substance abuse.<sup>18</sup>

Among MSM and TGs psychological distress and depression and poor mental health develop due to stigma and discrimination along with violence which produces high-risk sexual behaviors including substance abuse during sexual encounters and having multiple sexual partners without safe sex practices leading to sexually transmitted infections.<sup>19</sup>

Sexually transmitted infections burden, a substantial global public health threat increases among men who have sex with men (MSM) and transgender individuals because depression, substance abuse, sexual violence and socio-structural vulnerabilities commonly overlap as syndemic conditions.<sup>20–22</sup>

The national average HIV prevalence among MSM was estimated at 4.4% in 2010/2011 and 8.8% among TG women, 11 –22 times higher than that among the general population which was 0.4%, and about 2 – 3 times higher than that among female sex workers which was 2.67%.<sup>23</sup>

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According to Indian Annual Report HIV Estimates 2016 by NACO(National AIDS Control Organization) the prevalence of HIV is 9.9 among IDUs , 4.3 among MSM, 8.82 among TG, 2.2 among FSW(Female Sex Workers). In India, NACO has paid special attention for scaling-up of interventions related to HIV among TG women since the year 2013, the beginning of the fourth phase of the ‘Indian National AIDS Control Program (NACP-IV)’. Currently these efforts continue under NACP Phase-V (2021-2026).<sup>24</sup>

Inspite of many approaches to control STIs at global and national level, the prevalence of STIs among Transgender and MSM populations points out the urge for a better understanding of these syndemic factors responsible for this prevalence. The existing research about syndemics between MSM and transgender populations relies mainly on quantitative methods but these methods fail to fully represent their real-life social experiences.<sup>25,26</sup>

A mixed method study using combined quantitative and qualitative research allows researchers to develop a more complete understanding of how syndemics affect STI risk.<sup>27</sup>

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# **NEED FOR THE STUDY**

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## **2.NEED FOR THE STUDY:**

In populations of TG and MSM, HIV sexual risk is accelerated by co-occurring epidemics of adverse psychosocial exposures. The Indian studies conducted previously were able to document the associations between the individual psychosocial health problems and the risk of HIV, but only a few studies on multiple co existing psychosocial health conditions and sexual risk were conducted.

Identifying how mental health and victimization influences risk-taking can aid in the development of comprehensive health programs that encompass psychological support alongside preventive STI measures.

Limited number of studies investigates the syndemic model on psychosocial elements understanding how depression links with high-risk behavior and victimization experiences towards developing STIs in semi-urban areas to design effective interventions.

According to the concept of syndemics, by examining the interplay between mental health, risky behaviors, and victimization, this study will unveil the complex realities faced by MSM and transgender individuals, moving beyond traditional single-issue perspectives. This research will uncover essential relationships between these key elements affecting MSM and transgender people in semi urban area - Kolar thus providing valuable support for targeted public health intervention strategies.

Existing quantitative approaches, while valuable for identifying patterns and correlations, may overlook the complex interplay of psychosocial health conditions that contribute to health disparities. This limitation is particularly evident in studies that do not fully incorporate intersectional perspectives or qualitative insights, which are crucial for understanding the lived experiences of marginalized communities.

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Specialized intervention efforts need to focus on understanding and solving the unique challenges experienced by this marginalized population in the effort to improve their health outcomes.

The knowledge about mental health research on MSM and transgender individuals living in semi-urban areas such as Kolar remains scarce alongside STI risk assessment to develop specific interventions.

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# **OBJECTIVES**

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### **3.OBJECTIVES OF THE STUDY:**

#### **3.1 Quantitative study:**

- To determine the presence and co-occurrence of depression, high risk behaviours, and victimisation among ‘MSM and Transgenders’ in Kolar district.
- To determine the association of psychosocial health conditions (depression, high risk behaviours, and victimization) with occurrence of STIs among MSM and Transgenders in Kolar district.

#### **3.2 Qualitative Study:**

- To Explore the impact of psychosocial health conditions on health seeking behaviour among ‘MSM and Transgenders’ in Kolar district.

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# **REVIEW OF** **LITERATURE**

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## **4.REVIEW OF LITERATURE:**

### **4.1 Transgender :**

“Transgender individuals are persons whose gender identity differs from the sex assigned to them at birth”.<sup>28</sup>

**Types:** Transgender people represent a wide spectrum of identities that does not fit their sex that was imputed at birth. The term transgender itself is an umbrella term that includes ‘transgender women, transgender men, transsexuals, non-binary individuals, and others who transcend traditional gender norms’.<sup>29</sup>

**Table – I : Types of Transgender:**

| Transgender | Types              | Definitions                                                                                                                                                                                             |
|-------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Transgender Women: | “Also known as male-to-female (MTF) individuals, often seek to align their physical appearance with their gender identity through hormonal treatments and surgeries”. <sup>30</sup>                     |
|             | Transgender Men:   | “Also known as female-to-male (FTM) individuals, often undergo testosterone therapy to develop secondary male characteristics”. <sup>30</sup>                                                           |
|             | Transsexuals:      | “Individuals who strongly identify with a gender opposite to their biological sex and often seek medical interventions to align their physical appearance with their gender identity”. <sup>30,31</sup> |
|             | Non-Binary:        | “Individuals who do not identify strictly as male or female. This category includes identities such as genderqueer, bigender, agender, and gender-fluid”. <sup>30</sup>                                 |

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#### **4.1 a. Historical Context of Transgenders in Ancient Civilizations:**

The term transgender has evolved over time, with its roots in medical discourses dating back to the late 19th century. It initially encompassed terms like transvestism (now referred to as cross-dressing) and Transsexualism (A medical condition characterized by the person who feels to be of a gender other than he/she was assumed at birth and might desire to change into the gender which he/she identifies himself/herself as through medical interventions).<sup>32</sup>

#### **Cultural and Historical Role:**

Hijras have a long-standing presence in South Asian culture, often occupying roles in religious and social ceremonies. They are recognized as a third gender, distinct from the binary male and female categories.<sup>33</sup>

#### **Spiritual and Social Significance:**

The term "Two-Spirit" is used by some Indigenous North American cultures to describe a person who embodies both masculine and feminine spirits. This identity is often associated with specific spiritual roles and community responsibilities.<sup>34</sup>

#### **Fa'afafine and Fa'atama in Samoa:**

In Samoa, fa'afafine are individuals assigned male at birth who embody feminine gender expressions. They are a visible and recognized part of Samoan society, often involved in cultural and familial roles that blend traditional gender expectations.<sup>35</sup>

#### **4.1 b. Problem scenario:**

The community of transgenders in India has been existing in the periphery of society until now and has to take care of an intricate web of social, economic and cultural struggles. In

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years gone by, there have been landmark legal decisions – instances that include the Supreme court judgment in the matter of NALSA (National Legal Service Authority), 2014 as well as the ‘Transgender Persons Protection of rights Act, 2019’ that have gone a long way to attempt to resolve some of these issues and advance the rights of transgender. Nevertheless, despite such meaningful steps taken toward the recognition and defense numerous people belonging to the transgender community still experience various barriers in their ordinary life. Social stigma, discrimination, poor access to education and employment opportunities, lacking healthcare continue to be insistent barriers reflecting the need for further recognition of the actualities and plights of transgenders in India. The three major problems are as follows:

### **Educational Barriers:**

Transgender students often encounter social bias and exclusion within educational institutions, leading to high dropout rates. The lack of gender-inclusive facilities and support structures further alienates them from the education system.<sup>36</sup>

Harassment and bullying in schools are prevalent, causing many transgender individuals to abandon their education prematurely, which subsequently limits their employment opportunities.<sup>37</sup>

### **Employment Challenges:**

Employment opportunities for transgender individuals are severely limited due to widespread discrimination and stigma. Many are forced into low-paying jobs or sex work due to the lack of formal employment options.<sup>4</sup>

The absence of inclusive workplace policies and the reluctance of employers to hire transgender individuals contribute to their economic marginalization.<sup>9</sup>

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## Healthcare Access:

Access to healthcare is a significant issue, with transgender individuals facing discrimination from healthcare providers. This includes difficulties in accessing hormone therapy, gender-affirming surgeries, and mental health support.<sup>4</sup>

### 4.2 ‘Men who have Sex with Men (MSM)’:

MSM is a term in epidemiology and public health conserving sexual activities between males, independently of sexual orientation and gender identity. This population includes ‘gay men, bisexual men, and heterosexual-identified men who engage in same-sex sexual interactions’.<sup>38,39</sup>

#### Types:

In India ‘Men who have sex with men (MSM)’ community becomes a very complex, multi gender and diverse population. Usually, there are two obvious classifications to this population, an overtly visible classification and an invisible one as they represent a part of the normative male population..

**Table – II : Types of MSM:**

| Men who have Sex with Men | Types  | Definitions                                                                                                                                                                                                                                              |
|---------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | Kothi: | ‘Kothis are a highly marginalized group within the MSM community in India who are androphilic males typically sexually receptive and exhibit relatively feminine gender presentations. They are never castrated and are understood to be compatible with |

|                        |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |                                                                                                                                                                                                                                                                                                                           | <p>hijra’.<sup>40,41</sup></p> <p>The term is used ‘to focus on behavior rather than identity, which is significant in public health contexts to address the specific health needs and risks associated with these behaviors’.<sup>42</sup></p> |
|                        | Double-Decker:                                                                                                                                                                                                                                                                                                            | <p>The term “Doubledecker” is less frequently discussed in the literature but generally refers to ‘MSM who do not strictly adhere to a single sexual role, rather engaging in both insertive and receptive roles’.<sup>43</sup></p>             |
| Androphilic Males:     | <p>Definition: Individuals who experience sexual attraction and arousal to adult males. The term “androphilia” is specifically used in behavioral science to describe sexual attraction to masculinity, without making assumptions about gender identity, sexual behavior, or sexual orientation.<sup>44</sup></p>        |                                                                                                                                                                                                                                                 |
| Receptive Sexual Role: | <p>Definition: In sexual interactions, the receptive role refers to the partner who receives penetration during sexual activity. This term is used in academic and scientific literature to describe a specific sexual positioning without making judgments about gender identity or sexual orientation.<sup>45</sup></p> |                                                                                                                                                                                                                                                 |
| Insertive Sexual Role: | <p>Definition: In sexual interactions, the insertive role refers to the partner who performs penetration during sexual activity. Like the receptive role, this term is used in scientific contexts to describe a specific sexual positioning objectively.<sup>45</sup></p>                                                |                                                                                                                                                                                                                                                 |

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## **4.2 a. Historical Context of MSM in Ancient Civilizations:**

### **Ancient Greece and Rome:**

MSM have been historically documented across civilizations, from ancient Greek and Roman societies to indigenous cultures worldwide. Homoerotic relationships were prevalent in ancient Greece, where they were often associated with mentorship and social status. The expression and acceptance of MSM relationships have varied significantly across cultures and time periods. For instance, while Greek society was more open to homoerotic relationships, other cultures, like the Romans, had different attitudes, often influenced by religious and moral considerations.<sup>46</sup>

### **Indian Context and Cultural Representation:**

Ancient Indian texts and sculptures, such as those found in Khajuraho, depict same-sex relationships, suggesting a historical acknowledgment of such practices. The Mahabharata and Sushruta Samahita also contain references to same-sex attraction, indicating a nuanced understanding of sexuality in ancient India.<sup>47</sup>

## **4.3 Depression :**

Depression is defined as a “psychiatric condition marked by a depressed or unpleasant mood lasting at least two weeks, accompanied by symptoms such as loss of interest, changes in appetite or weight, sleep disturbances, fatigue, feelings of worthlessness or guilt, and difficulty concentrating”.<sup>48</sup>

The Depressive Disorders according to the American Psychiatric Association’s Diagnostic Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) are categorized into:

1. Disruptive mood dysregulation disorder

- 
2. Major depressive disorder
  3. Persistent depressive disorder (dysthymia)
  4. Premenstrual dysphoric disorder
  5. Depressive disorder due to another medical condition.

The general characteristics of all the depressive disorders are sadness, emptiness or irritable mood with somatic and cognitive changes that drastically compromise the capacity to function in the individual.<sup>49</sup>

As a result of wrong perceptions, almost 60 per cent of people with depression do not visit qualified doctors. Many are of the thought that stigma of mental disorder cannot be accepted in the society and may hamper personal and professional life. There is good evidence, which suggests that most Antidepressants do work but the person's response to treatment varies.<sup>50</sup>

#### **4.3 a. Depression among Transgenders and MSM :**

Depression in the transgender people and 'men who have sex with men (MSM)' is a public health problem. A number of studies on the high-prevalence and other factors associated with the mental health issues among these neglected groups are the following:

**Table - III: Prevalence of depression among Transgenders & MSM :**

| <b>Burden</b> | <b>Sl No</b> | <b>Author</b> | <b>Study setting</b> | <b>Study Tool</b> | <b>Participants</b> | <b>Results:</b> |
|---------------|--------------|---------------|----------------------|-------------------|---------------------|-----------------|
|               |              |               |                      |                   |                     |                 |

|               |   |                                         |                                                                                                        |                                                                                                                 |                                                  |                                                                                                                                                                                                                                                                                                                                |
|---------------|---|-----------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Global Burden | 1 | Nouri et al., <sup>51</sup><br>2022     | Systematic Review and Meta-Analysis                                                                    | ‘CES-D (Center for Epidemiologic Studies Depression Scale)’.                                                    | MSM                                              | The global pooled prevalence of depression among men who have sex with men (MSM) was found to be 35%, with more prevalent depression in MSM living with HIV at 47% and the highest prevalence in the Asian MSM at 37%.                                                                                                         |
|               | 2 | Storm et al., <sup>52</sup><br>2021     | Jhapa, Morang, Sunsari, Nawalparasi, Rupandehi, Kapilbastu, Kailali, and Kanchanpur districts of Nepal | ‘Integrated Biological and Behavioral Surveillance (IBBS) Survey’                                               | TG Women & MSM                                   | Nearly over half of the participants reported depression; severe depression and suicidality affected transgender women more than males who have sex with males.                                                                                                                                                                |
|               | 3 | Medeiros et al., <sup>53</sup><br>2023  | Brazil                                                                                                 | ‘Center for Epidemiologic Studies Depression (CES-D) scale’                                                     | Adolescent MSM and Adolescent transgender women. | The study found a high prevalence of severe symptoms of depression among adolescent men who have sex with men (58.5%) and transgender women (69.6%) in Brazil, with significant associations between these symptoms and experiences of psychological violence, sexual violence, and discrimination due to sexual orientation . |
|               | 4 | Ali & Ali et al., <sup>54</sup><br>2023 | Lahore, Pakistan                                                                                       | ‘The Patient Health Questionnaire (PHQ-9) to assess depression levels’.<br><br>‘The General Self-Efficacy Scale | MSM and TG community health workers              | The study found that 31.77% of participants had at least moderate depression, and 56.52% experienced high work-related stress, with a high degree of self-efficacy                                                                                                                                                             |

|                 |   |                                          |                 |                                                                                                                        |                           |                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|---|------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |   |                                          |                 | (GSE) to measure self-efficacy’.                                                                                       |                           | potentially offering protection against depression .                                                                                                                                                                                                                                                                                                                                        |
|                 |   |                                          |                 | ‘The Subjective Job Stress Scale (SJSS) to evaluate work-related stress’                                               |                           |                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | 5 | Okonkwo et al., <sup>55</sup><br>2022    | Kigali, Rwanda. | ‘Patient Health Questionnaire (PHQ-9)’; Validated Instrument for Sexual Behavior Stigma.                               | MSM and Transgender women | The results indicate a significantly relation of the stigma of sexual behavior with the prevalence of depressive symptoms and depression among men who have sex with men and transgender women in Kigali, Rwanda, of which the levels of stigma and depression are found to be higher among the transgender women (26.4%).                                                                  |
|                 |   |                                          |                 |                                                                                                                        |                           |                                                                                                                                                                                                                                                                                                                                                                                             |
| National Burden | 6 | Chakrapani et al., <sup>56</sup><br>2017 | India           | Survey questionnaire designed and validated to assess the presence and co-occurrence of psychosocial health conditions | MSM and Transgender       | The research has evidenced that psychosocial health conditions like depression , alcohol use and victimization co-exist in men, who have sex with men (MSM) and transgender women ,India and on that these psychosocial health conditions are positively and additively associated with increased sexual risk behaviors. MSM - 35.3% depression rates ; TG Women – 42.7 % depression rates. |

|  |    |                                                |                                                    |                                                                      |              |                                                                                                                                                                                                                                                   |
|--|----|------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 7  | Soohinda et al., <sup>57</sup><br>2018         | India                                              | ‘Centre for Epidemiologic Studies Depression Scale-Revised (CESD-R)’ | MSM          | Depression was highly prevalent among Indian MSM, with 58.84% of participants showing symptoms, and those with negative experiences of coming out had significantly higher depression scores.                                                     |
|  | 8  | Tomori et al., <sup>58</sup><br>2016           | Visakhapatnam & Hyderabad, Andhra Pradesh<br>India | ‘Patient Health Questionnaire-9 (PHQ-9)’                             | MSM          | The study found that the overall prevalence of depression among men who have sex with men (MSM) in India was 11%, a large difference between sites and subgroup of MSM, and the high prevalence of suicidal thoughts in those who were depressed. |
|  | 9  | Patel et al., <sup>59</sup><br>2015            | Andhrapradesh, India                               | ‘Patient Health Questionnaire-2 (PHQ-2) depression scale’            | MSM          | Over one third of MSM in the study reported depression(35%)and this was much higher among MSM who were mobile for sex work(p<.001 of).                                                                                                            |
|  | 10 | Krishna Prasanth et al., <sup>60</sup><br>2022 | Chennai, India                                     | ‘Patient Health Questionnaire-9 (PHQ-9)’.                            | Transgenders | The study found that the prevalence of depression among transgender individuals residing in Chennai district was 76% .                                                                                                                            |

#### 4.3 b. Depression and its Impact on Sexual Health

The intersection of stigma, discrimination, and social exclusion exacerbates the risk of depression in these marginalized communities.<sup>55,61</sup>

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A previous study done on a cohort of young MSM and Transgender women from Bangkok, Thailand during 2017-19 shows that there is an association between depressive symptoms and various risk factors, including having an HIV-positive partner and experiences of bullying. This suggests that mental health issues may exacerbate the risk of HIV transmission and complicate the management of HIV among these individuals.<sup>62</sup>

A worrying association between depressive symptoms and unsafe sexual practices, especially gay men with HIV, was identified in research. It was a noteworthy study that unearthed that patients with depression are prone to unprotected sex than their HIV-negative compatriots. This elevated risk could be explained both by the factors such as the impaired judgment, lack of motivation for self-protection and the tendency for immediate gratification at the expenses on the long haul consequences to one's health. Therefore, tackling mental health problems like depression is important when it comes to developing efficacious strategies and interventions for the reduction of unsafe sexual behaviours among MSM as well as enhanced health outcomes among MSM especially the living with HIV.<sup>63</sup>

MSM diagnosed with a current Major Depressive Episode (MDE) engaged in significantly more episodes of Condomless Anal Intercourse (CAI) with casual male partners, with a 92% increase in the rate of engagement, and a 76% increase in CAI with anonymous male partners. Additionally, the severity of methamphetamine use disorder (MUD) was linked to high rates of Condomless Anal Intercourse CAI, with a 44% increase in engagement with anonymous male partners and a 140% increase with exchange male partners for each unit increase in MUD severity.<sup>64</sup>

Compared to cisgender women (CW) and men who have sex with men (MSM), transgender women (TW) had increased odds of having depressive symptoms (odds ratio 2.2); this unequal mental health status of TW points towards a significant disparity in mental health

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among the latter. Coupled with this, TW also showed a lower tendency to use condoms when having sex with partners of unknown serostatus (22% compared to 42% for MSM), making one source of possible risk for the transmission of HIV infection. Transgender women were less likely to use condoms in sex with partners of unknown serostatus (OR 0.38) relative to MSM.<sup>65</sup>

High rates of abuse were linked to higher levels of depressive symptoms in a study that included ‘1,366 transgender women and 2,182 MSM’. Seventy percent of transgender women and forty-four percent of MSM engaged in sex work.<sup>66</sup>

Several studies highlight the role of depression in increasing engagement in risky sexual behaviours, such as unprotected sex, multiple sexual partners, and substance-induced sexual encounters, all of which heighten the risk of STI transmission.<sup>67</sup>

Numerous studies underscore the significant role of depression in fostering engagement in risky sexual behaviours, including ‘unprotected sex, having multiple sexual partners, and substance-induced sexual encounters’. Individuals grappling with depression may exhibit impaired decision-making skills and a weakened capacity for self-regulation, leading them to prioritize immediate gratification over long-term health considerations. This elevated risk-taking behaviour not only compromises personal health but also contributes to a broader public health concern, as it means that there is an increased risk of transmission of sexually transmitted infections (STIs).<sup>67</sup>

- **Global Perspective :**

Research from North America and Europe shows a significant association between depression and STI risk among MSM and transgender individuals. In sexual and gender diverse populations, an extremely high level of anxiety and depressive disorders is associated

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with socioeconomic disparities and HIV status. 29.7% and 30.3% of the participants reported mild and moderate-severe symptoms of anxiety and depression respectively, transgender women (39%) being the worst hit followed by the Gender-nonconforming individuals - 34.8%. Economic hardship was highly correlated with severe symptoms among all the subgroups. Severe symptoms of anxiety and depression were much more likely to be reported by people with HIV than those that were HIV-negative and the highest severity scores were present in the groups of people who were unaware of their HIV status. In addition to this, transfeminine people who experienced discriminations had 3.47 times the relative risk of seeking severe anxiety and depression as compared to those who lacked such experiences.<sup>68,69</sup>

Transgender women are statistically more likely to experience depression and less likely to engage in consistent condom use, indicating a critical intersection between mental health and sexual health among these individuals. According to studies it is possible to identify that untreated depression can increase the risk to a very great extent of performing sexual risk-taking behaviors like unprotected sex as well as having multiple sexual partners. This condition is also noticeable among the men who have sex with men (MSM), so that mental health issues might affect decision-making and motivation to engage in a safe sex. The complexities of navigating gender identity, societal stigma, and mental health issues can further exacerbate these risk of sexually transmitted infections (STIs).<sup>70</sup>

- **National Context**

Indian studies confirm the alarming trends at the global level, especially through the studies carried out by the ‘National AIDS Control organization (NACO)’, which indicates alarmingly high rates of depressive symptom among ‘men who have sex with men (MSM)’ and trans-genders. This mental health burden is highly associated with the rising rates of

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prevalence in the HIV and other STIs in such populations. In India, a country with hostile attitudes toward these nations, the challenges and threats to their mental health face the population of the LGBTQI+ (‘lesbian, gay, bisexual, transgender, queer, intersex’) are often compounded by stigma, discrimination, and high levels of victimization of violence that continues to obstruct their access to the necessary healthcare and support mechanisms. The interplay of these factors not only contributes to the deterioration of mental health among MSM and transgender individuals but also poses significant public health risks.<sup>71</sup>

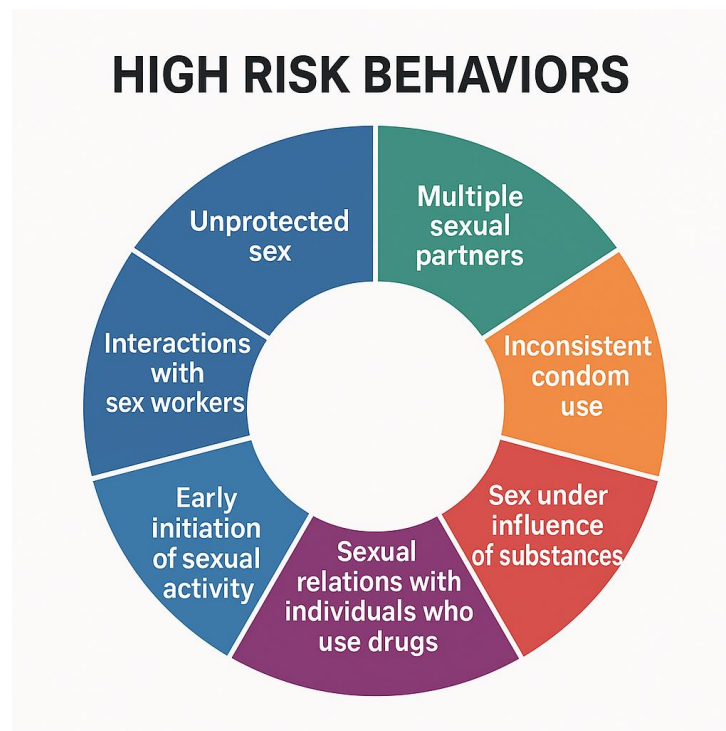
A cross-sectional survey of 300 trans women and 300 MSM in urban and rural areas in India used Hayes’ PROCESS macro to examine how social support and resilient coping moderates, and mediates the impact of stigma on transgender and sexual minority on depression. It unveiled complicated relations between stigma, social support, and mental health. The findings emphasize the pivotal role of combating sexual and gender minority stigmas as the research results show that strong social support and resilient tactics of coping can largely buffer the mental health implication of stigmatization, forming the basis for targeted interventions and support practices.<sup>61</sup>

#### **4.4 High-risk Behaviours:**

“High-risk behaviours in sexual health are defined as any sexual activity that increases the likelihood of contracting sexually transmitted infections (STIs) and unwanted pregnancies”.<sup>72</sup>

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**Fig – I: Types of High Risk Behaviors<sup>72</sup>**



#### **4.4 a.Substance use**

“It refers to the use of selected substances, including alcohol, tobacco products, use and misuse of illegal and illicit / controlled drugs, inhalants, and other substances that can be consumed, inhaled, injected, or otherwise absorbed into the body with possible dependence and other detrimental effects”.

Illicit drug use (also called as recreational drug use) includes any use of following illicit drugs.<sup>73</sup>

**Fig – II: Types of Illicit Drugs**<sup>73</sup>



(AI GENERATED)

#### **4.4 b.High-risk Behaviours among TG and MSM:**

High-risk behaviors among transgender individuals and men who have sex with men (MSM) remain a serious public health concern. Following Researches shows that these communities often face a higher prevalence of such behaviors, influenced by a range of social, economic, and structural challenges.

**Table – IV: Prevalence of high-risk behaviours among Transgenders & MSM :**

| Burden          | Sl. No | Author                                   | Study Setting                                                                                          | Study Tool:                                                                                                                    | Participants       | Results:                                                                                                                                                                                           |
|-----------------|--------|------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Global Burden   | 1      | Khodakha h et al., <sup>74</sup><br>2023 | Tehran, Iran                                                                                           | Expert designed validated questionnaire containing many dimensions including the evaluation of sexual and high-risk behaviors. | Transgenders       | Prevalence of Unprotected anal sex among Transgenders was 34.4%                                                                                                                                    |
|                 | 2      | Siamisang et al., <sup>75</sup><br>2022  | Gaborone, Botswana, Africa                                                                             | ‘Biological and Behavioral Surveillance Survey (BBSS-2 )’                                                                      | Transgenders       | The study revealed certain prevalent high risk behaviors among transgenders like Concurrent sexual partners – 16.7%, Alcohol use – 50%, Not knowing the HIV status of the last male partner – 45%. |
|                 | 3      | Storm et al., <sup>76</sup> 2020         | Jhapa, Morang, Sunsari, Nawalparasi, Rupandehi, Kapilbastu, Kailali, and Kanchanpur districts of Nepal | ‘Integrated biological and behavioural surveillance (IBBS) survey’                                                             | Transgenders & MSM | Among the study participants 76% of Transgenders were engaged in Sex work.                                                                                                                         |
| National Burden | 4      | Srivastava et al., <sup>66</sup><br>2020 | Karnataka, Maharashtra, and Tamil Nadu states of India                                                 | ‘Phase III of Avahan India AIDS Initiative Survey’.                                                                            | Transgender & MSM  | Sex work was more prevalent among Transgender women (70%) than MSM (44%).                                                                                                                          |
|                 | 5      | Kumar et al., <sup>77</sup><br>2020      | India                                                                                                  | ‘Integrated Biological and Behavioral Surveillance (IBBS)’                                                                     | MSM                | Inconsistent condom use was seen among 50.9% of MSM.                                                                                                                                               |
|                 | 6      | Acharya et al., <sup>78</sup><br>2023    | Mumbai, Maharashtra, India .                                                                           | Secondary data collected from targeted intervention program.                                                                   | MSM                | MSM was more likely to participate in high-risk sexual behaviors with a particular high-risk being the group sex engagement 16%.                                                                   |
|                 | 7      | Santhakumar et al., <sup>79</sup> 2023   | India                                                                                                  | ‘Integrated Bio-Behavioural Surveillance (IBBS)’.                                                                              | MSM                | Slightly below 75% of the bisexual MSM in the study reported having an                                                                                                                             |

|  |   |                                          |       |                                                                                                                                  |                    |                                                                              |
|--|---|------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------|
|  |   |                                          |       |                                                                                                                                  |                    | inconsistent condom use with female partners.                                |
|  | 8 | Chakrapani et al., <sup>56</sup><br>2017 | India | Survey questionnaire developed and confirmed for evaluation of the existence and co-existence of psychosocial health conditions. | Transgenders & MSM | Frequent Alcohol use was prevalent among Transgenders (37.3%) and MSM (15%). |

#### 4.4 c. High-Risk Behaviours and STI Risk

Many men who have sex with men (MSM) and transgender women tend to be involved in dangerous sexual behaviours like unprotected sex and having many sexual partners, a vice which is mostly amplified by the use of drugs. Drug and alcohol use can greatly impair judgment and decision-making skills, making people fail to consider safer sex practices and heighten their vulnerability to sexually transmitted infections (STI) such as HIV. This dance back and forth between substance use and sexual risk-taking in these populations is especially problematic, given the pressures of stigma, discrimination, and mental health concerns as a potentially exacerbating factor for peoples retreat to substance use for a sense of relief. As a result, the combination of impaired judgment and risky sexual practices can create a vicious cycle, heightening the health risks for MSM and transgender women.<sup>22,80</sup>

High risk behaviors such as irregular condom use, substance abuse and multiple sexual partnerships as well impact negatively on the spread of STIs among MSM and transgenders. Inconsistent condom use not only exposes individuals to STIs by failing to provide a barrier against pathogens but also reflects a broader context of risk-taking behaviour. Substance abuse, whether through alcohol or recreational drugs, can impair judgment and lead to decisions that increase sexual risk, such as opting for unprotected sex or having casual encounters with multiple partners. This combination of factors creates an environment where

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the likelihood of STI transmission is significantly heightened. Furthermore, for MSM and transgender individuals, societal stigma and discrimination often compound these issues, leading to reduced access to healthcare and prevention resources.<sup>81,82</sup>

- **‘Substance Use and Sexual Risk-Taking’**

According to emerging studies, there is a very strong connection between substance abuse (‘alcohol, cannabis and other recreational drugs’) and raised sexual risk-taking behaviours within ‘men who have sex with men (MSM) and transgenders’. Studies reveal that intoxication significantly impairs judgment and decision-making processes, leading to a higher likelihood of engaging in unprotected anal sex and maintaining concurrent sexual partnerships. The disinhibiting effects of these substances can reduce individuals' ability to negotiate safer sex practices, assess potential health risks, or consistently use protective measures like condoms. Moreover, substance use often intersects with complex psychological factors such as low self-esteem, experiences of stigma, and mental health challenges, further contributing to risky sexual behaviours.<sup>83–85</sup>

Certain recreational chemicals, notably methamphetamine and poppers (alkyl nitrites), have been directly linked to heightened sexual risk-taking among young men who have sex with men (MSM) and transgender women, significantly increasing the prevalence of casual and one-time sexual encounters. These substances not only lower inhibitions but also create physiological and psychological states that increase sexual arousal and reduce risk perception, leading to more frequent and often unprotected sexual interactions. Methamphetamine, in particular, is known for its potent stimulant effects that can extend sexual encounters and reduce sexual decision-making capacity, while poppers facilitate muscle relaxation and enhance sexual experience, making them particularly prevalent in sexualized contexts. The combination of these chemical-induced behavioural changes with

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existing social vulnerabilities—such as marginalization, mental health challenges, and limited access to comprehensive sexual health resources—creates a complex ecosystem of increased sexual risk.<sup>86</sup>

- **Sexual Partner Networks**

The structure of sexual partner networks plays a critical role in STI transmission dynamics.

Within men who have sex with men (MSM) networks, individuals with higher behavioural risks are often characterized by more concurrent sexual partnerships and inconsistent condom use, creating complex transmission dynamics for sexually transmitted infections (STIs). These network characteristics facilitate faster and more extensive pathogen spread, as sexual interactions occur within interconnected social and sexual circles where high-risk behaviours are relatively common. The concentration of such behaviours including multiple concurrent partners, reduced protective practices, and potential substance use creates “sexual networks” with elevated infectious disease transmission potential. Social factors like community stigma, limited healthcare access, and structural inequalities can further compound these risks, making certain MSM subpopulations more vulnerable to STI acquisition and spread. This network-level understanding of sexual behaviour should be considered seriously.<sup>87</sup>

It is essential to understand the complex sexual networks of transgender women (TW) in view of their increased risk of contracting sexually transmitted infections (STIs), especially on account of their complex sexual arrangements with men who have sex with transgender women (MSTW). These sexual networks are characterized by unique dynamics that significantly increase transmission risks, including high rates of concurrent partnerships, inconsistent condom use, and potential substance abuse. Transgender women often navigate marginalized social spaces where sexual interactions may occur in contexts of economic precarity, social stigma, and limited healthcare access, further complicating their sexual

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health landscape. The sexual networks involving TW and MSTW frequently intersect with broader men who have sex with men (MSM) communities, creating intricate pathways for potential STI transmission. These interconnected sexual networks are not just medical epidemiological constructs but reflect deeper social inequalities, discrimination, and systemic barriers that transgender women face.<sup>88</sup>

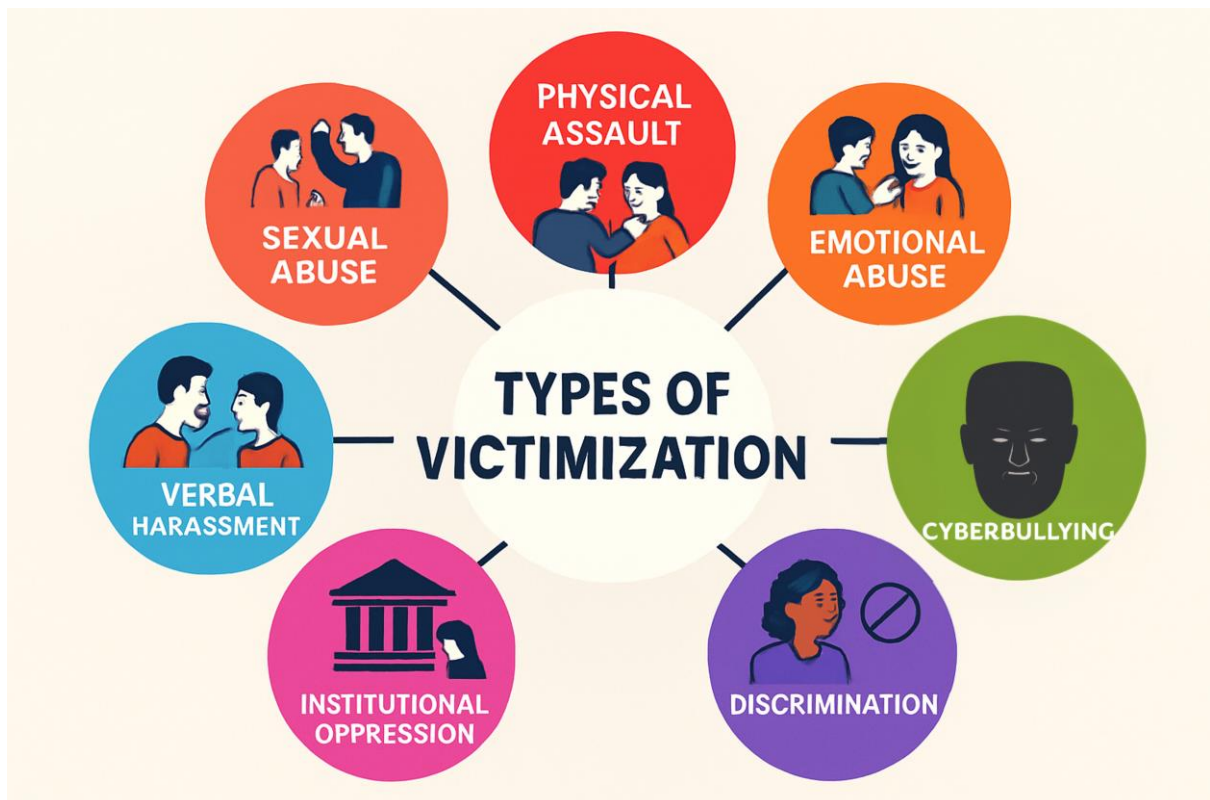
Due to pervasive sociocultural constraints and heteronormative pressures, many men who have sex with men (MSM) are compelled to maintain heterosexual relationships and marriages, effectively creating a demographic “bridge” for potential HIV transmission between male same-sex networks and heterosexual populations. These complex social dynamics, often rooted in cultural stigma, religious expectations, and familial pressures, force MSM to maintain sexual relationships with female partners, simultaneously maintaining sexual interactions with male partners, thereby increasing the potential for viral cross-transmission. The phenomenon is particularly pronounced in societies with conservative social norms that criminalize or strongly stigmatize same-sex relationships, compelling MSM to maintain a facade of heterosexuality through marital or intimate relationships with women. This “bridging” effect significantly complicates HIV prevention strategies, as these individuals may have limited access to targeted sexual health resources, face significant psychological stress, and potentially engage in higher-risk sexual behaviours due to internalized stigma and reduced healthcare engagement.<sup>79</sup>

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#### 4.5 Victimization:

Victimization is the process of being subjected to harmful, exploitative, or abusive treatment by another individual, group, or system, resulting in physical, psychological, emotional, or social damage to the targeted person.

**Fig – III: Types of Victimization**<sup>89</sup>



(AI GENERATED)

#### 4.5 a.Victimization among TG and MSM :

**Table – V :Prevalence of Victimization among Transgenders & MSM :**

| Burden          | Sl. No | Author                                                      | Study Setting                                         | Study Tool                                                         | Participants       | Results:                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|--------|-------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Global Burden   | 1      | Septarini et al., <sup>90</sup><br>2023                     | Bali, Indonesia                                       | Validated structured questionnaire.                                | Transgenders & MSM | Discrimination was indicated by 35.5% of MSM and 72.4% of Transgenders in the research .                                                                                                                                                                                                                                                                    |
|                 | 2      | Whiteman et al., <sup>91</sup><br>2021                      | USA                                                   | ‘National HIV Behavioral Surveillance’                             | MSM                | The study found that 34% of MSM reported verbal discrimination, 16% experienced discrimination in settings like workplaces or schools, and 8% faced physical assault, with higher discrimination linked to younger age, lower education, and income levels .                                                                                                |
|                 | 3      | Annals of Humans and Social Sciences. <sup>92</sup><br>2023 | Pakistan                                              | Validated structured questionnaire.                                | Transgenders       | The paper discusses workplace violence against the transgenders in Pakistan with high rates of sexual (70%), physical (60%) and psychological (80%) violence.                                                                                                                                                                                               |
| National Burden | 4      | Chakrapani et al., <sup>93</sup><br>2022                    | India                                                 | ‘Indian Integrated Biological and Behavioural Surveillance survey’ | Transgender Women  | From the study it was revealed that 27.3% of HIV negative transgender women reported the incidences of physical violence while 22.3% experienced sexual violence. Almost a third (33.9%) of the participants reported frequent alcohol use and 11.5% reported illicit drug use which is high prevalence of psychosocial adversities among the participants. |
|                 | 5      | Srivastava et al., <sup>66</sup><br>2022                    | Karnataka, Maharashtra and Tamil Nadu states of India | ‘Third phase of Avahan India AIDS Initiative Survey’.              | TG & MSM           | The result showed that 30% of transgender women and 17% of MSM ever experienced some violence during the last six months.                                                                                                                                                                                                                                   |

|  |   |                                          |                   |                                                                                                                                                                |                    |                                                                                                                                                                                                                      |
|--|---|------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 6 | Shaw et al., <sup>94</sup><br>2011       | Karnataka, India  | Validated structured questionnaire.                                                                                                                            | TG & MSM           | The study revealed that among men who have sex with men and transgender persons in southern India, 18% experienced sexual violence in the last one year with greater HIV prevalence among them noting such violence. |
|  | 7 | Dennis et al., <sup>95</sup><br>2017     | Maharashtra India | ‘Quantitative part; ISHKconnect study survey. semi-structured interviews with hijras, and in depth interviews with healthcare providers for qualitative part’. | TG & MSM           | The study reported high levels of harassment and violence, with 56.5% of participants indicating they had been victimized at some stage of life.                                                                     |
|  | 8 | Chakrapani et al., <sup>56</sup><br>2017 | India             | Designed survey questionnaire and verified to address the presence and co-existence of psychosocial health conditions.                                         | Transgenders & MSM | The study reported Physical & Sexual Violence among Transgenders – 80.4% and MSM – 49.7%.                                                                                                                            |

#### 4.5 b. Victimization and Health Outcomes

Victimization represents a critical and pervasive challenge for men who have sex with men (MSM) and transgender individuals, manifesting through complex forms of physical, emotional, and sexual violence that profoundly impact individual and community well-being. These marginalized populations frequently experience multilayered traumatic experiences, including targeted harassment, discrimination, intimate partner violence, sexual assault, and societal stigmatization, which collectively contribute to significant mental health challenges such as depression, anxiety, post-traumatic stress disorder, and increased suicidality. The

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traumatic consequences of victimization often precipitate high-risk behavioural responses, including substance abuse, inconsistent safer sex practices, reduced healthcare engagement, and potential involvement in survival sex work, thereby creating intricate cycles of vulnerability and potential further exploitation. Structural inequalities, legal discrimination, cultural stigma, and systemic marginalization exacerbate these risks, rendering MSM and transgender individuals disproportionately susceptible to repeated victimization across personal, social, and institutional domains.<sup>66,96</sup>

LGBTQ individuals consistently experience disproportionately high rates of violent victimization, with polyvictimization (experiencing multiple types of victimization; Cumulative and complex traumatic experiences) emerging as a critical determinant of compromised health outcomes across psychological and physiological domains. The cumulative trauma exposure for these communities extends beyond singular incidents, encompassing intersecting forms of violence including physical assault, sexual harassment, psychological abuse, discrimination, and systemic marginalization, which collectively contribute to a complex landscape of chronic stress and compounded traumatic experiences. Research demonstrates that repeated victimization significantly disrupts neurobiological stress response systems, leading to elevated cortisol levels, compromised immune functioning, increased inflammatory markers, and heightened vulnerability to mental health disorders such as ‘depression, anxiety, and post-traumatic stress disorder’. The longitudinal impact of polyvictimization manifests through reduced healthcare engagement, diminished social support networks, increased substance abuse behaviours, and higher rates of suicidality, creating intricate cycles of vulnerability that persistently undermine individual and community resilience.<sup>97</sup>

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#### 4.5 c.Stigma and Discrimination

LGBTQI (lesbian, gay, bisexual, transgender, queer, intersex) populations face significantly higher rates of violence, including sexual violence, physical assault, and hate crimes, compared to non-LGBTQI individuals. Transgender and gender-diverse individuals, as well as bisexual women, are particularly vulnerable to sexual violence. The experiences of victimization are also influenced by the socio-political context, with LGBTQI individuals in the Global South facing additional challenges due to colonial legacies and ongoing criminalization of LGBTQI identities.<sup>18</sup>

Societal stigma and misunderstandings by authorities contribute to the low reporting rates of violence against transgender individuals. Fear of transphobic reactions and unequal legal protections discourage seeking help, increasing their vulnerability to violence. Violence and discrimination hinder the social integration of transgender individuals, infringing on their personal rights and contributing to public health problems.<sup>96</sup>

Education: LGBTQIA+ (lesbian, gay, bisexual, transgender, queer, questioning, intersex, asexual) students often experience harassment and discrimination in educational settings, negatively impacting their academic performance and social well-being, leading to high dropout rates and limited employment opportunities. This often forces them into low-paying jobs or sex work for survival. being.<sup>98,99</sup>

Employment: LGBTQIA+ individuals continue to face discrimination in hiring, career advancement, and working conditions, resulting in economic disparities and marginalization.<sup>98</sup>

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Public and Financial Services: Transgender individuals experience discrimination in public settings, such as difficulties in obtaining or changing government identity cards and accessing bank loans. These barriers contribute to economic hardship and social exclusion.<sup>99</sup>

Healthcare: Disparities in healthcare access and quality persist, with LGBTQIA+ individuals facing discrimination from healthcare providers and a lack of protective policies.<sup>100</sup>

Aging and Long-term Care: LGBTQIA+ older adults report significant concerns about discrimination in accessing aging-related services, which affects their planning for future care.<sup>101</sup>

Physical and Psychological Violence: LGBTQ+ youth experiencing homelessness often face violence from passersby in public spaces, leading them to hide to avoid confrontation.

Police Profiling: Racialized youth and young women sex workers among the LGBTQ+ homeless population are particularly targeted by police profiling, which discourages them from seeking help.

Discrimination in Housing and Employment: Landlords and employers often discriminate against these youth based on ethnicity and gender expression, necessitating contingency plans for housing and employment.

Identity Concealment: Many LGBTQ+ youth hide aspects of their identity, such as being bisexual or trans, to avoid prejudice and rejection from intimate partners and society.<sup>102</sup>

Family and Social Rejection: Transgender women often face non-acceptance and rejection from their families when they express their gender identity, leading to emotional trauma and social isolation. This rejection extends to educational settings, where ridicule and harassment are common, resulting in high dropout rates and limited employment opportunities.

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Structural stigma is prevalent in institutional settings, such as healthcare and law enforcement, where transgender women experience harassment and discrimination.<sup>103</sup>

South Africa has a progressive legal framework that decriminalizes same-sex relationships and protects LGBTQIA rights. However, societal attitudes often lag behind legal advancements, resulting in persistent homophobia and discrimination. Despite legal protections, LGBTQIA individuals face significant violations of their rights, including exclusion from cultural practices and social discrimination. These challenges manifest in various societal sectors, including healthcare, education, and social interactions, often exacerbated by entrenched cultural norms and systemic biases. The experiences of LGBTQIA individuals in South Africa highlight the gap between legal rights and lived realities, where discrimination and stigma continue to affect their mental and physical well-being.<sup>104</sup>

#### **4.5 d.Impact of Violence on STI Risk**

Sexual and physical violence experienced by marginalized populations, particularly among transgender and MSM communities, creates a complex, cyclical vulnerability that dramatically increases exposure to sexually transmitted infections (STIs) through compromised personal safety mechanisms and survival strategies. The traumatic consequences of violence systematically erode individual agency, resulting in diminished capacity to negotiate safer sexual interactions, implement protective boundaries, and exercise autonomous decision-making regarding sexual health and risk mitigation. Survival sex work emerges as a critical coping mechanism driven by economic precarity, institutional discrimination, and limited alternative livelihood options, which simultaneously exposes individuals to heightened risks of repeated sexual violence, inconsistent condom usage, and increased STI transmission potential. The profound psychological impacts of helplessness

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and chronic trauma fundamentally undermine an individual's ability to implement self-protective strategies, creating intricate pathways of continued vulnerability wherein past victimization directly correlates with increased sexual risk behaviours. These intersecting dynamics are further complicated by structural inequalities, limited healthcare access, societal stigmatization, and systemic barriers that persistently marginalize already vulnerable populations, thereby creating sophisticated networks of risk that extend beyond individual experiences and reflect broader social determinants of health and survival.<sup>105–107</sup>

#### **4.6 Syndemic Theory and Public Health**

Syndemics (synergistic epidemics) describe the comorbidity and complex confluence of problems in health occurring in a particular socio-environmental context and resulting in combined health outcomes. The concept was first developed in medical anthropology and later adopted by public health and social epidemiology. It has significant implications for public health. It suggests that these interconnected health problems require tailored prevention strategies, differing from approaches for independent issues. Historically the theory has been applied to various health issues, including the ‘SAVA syndemic’ (Substance Abuse, Violence, AIDS) and more recently, the COVID-19 pandemic and the global system of Obesity-Undernutrition-Climate Change, highlighting the need for comprehensive strategies that consider the complex interactions among health determinants and their environments.<sup>27</sup>

Singer developed the syndemic framework in 1996 to explain co-occurring epidemics, especially in studies of health disparities. Notably, it incorporates the Substance Abuse, Violence, and AIDS (SAVA) syndemic theory, emphasizing how these health conditions are intertwined in impacted communities.<sup>108,109</sup>

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The concept of syndemics extends even beyond the traditional understanding of comorbidity by emphasizing the role of social, economic, and environmental factors in the clustering and interaction of diseases. Focused on the co-occurrence of diseases, syndemics also consider how these diseases interact within a broader context, exacerbating each other's effects and leading to worse health outcomes. This approach is particularly relevant in understanding complex health challenges where multiple diseases are influenced by external factors such as poverty, social inequality, and environmental conditions. The syndemic framework provides a comprehensive understanding of health issues by integrating these non-biological factors, which are often overlooked in traditional medical models.<sup>110</sup>

The concept of syndemics emerged in the aftermath of the HIV/AIDS epidemic, which is sometimes referred to as a “forgotten pandemic”. This historical context underscores the importance of understanding how multiple health issues can interact and exacerbate each other, particularly in the presence of external social and environmental factors. Syndemics also refers to the interplay between co-existing or sequential diseases whose social and environmental determinants are the motivating factors that contribute to poor overall health outcomes that include communicable and non-communicable diseases and mental health concerns. By recognizing the extensive intertwining of diseases and external factors, there is potential to fundamentally change how healthcare efficiency is approached. Hence, recognizing the complex interconnections between diseases and external factors can lead to improved health care efficiency at both individual and societal levels.<sup>111</sup>

Syndemics theory is implemented within the public health field in order to assess difficult co-occurring health problems, particularly in the vulnerable groups, which experience systemic exclusion and structural violence. The research brings out the biopsychosocial interactions between dual health states such as HIV/AIDS, substance abuse and mental health with

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context specificities, and structural violence. With awareness of these interactions, the public health initiatives can intervene in socioecological processes shaping health and wellbeing with the ultimate goal of reducing health inequities of synergistic epidemics and stubborn contextual factors.<sup>112</sup>

The need for comprehensive public health interventions that address these interrelated factors in marginalized populations is highlighted by the syndemic theory, which emphasizes how co-occurring psychosocial challenges, such as mental health disorders and substance use, worsen HIV risk behaviors and impede care access.<sup>113</sup>

In the context of MSM and transgender individuals, the convergence of mental health disorders, substance use, social stigma, and high-risk sexual behaviors exacerbates vulnerability to STIs.<sup>22,114,115</sup>

#### **4.7 Syndemic Interactions and Their Implications :**

The interaction between depression, high-risk behaviours, and victimization creates a compounded effect, exacerbating STI vulnerability.

The sexual health landscape among men who have sex with men (MSM) reveals alarming patterns of risk and vulnerability, with epidemiological data highlighting critical gaps in protective behaviours and mental health management. Despite 85% of MSM reporting anal intercourse, only 45.1% consistently utilized condoms, creating significant potential for sexually transmitted infection transmission and increased health risks, a statistic that underscores the complex interplay between sexual behaviour, risk perception, and protective mechanisms. The compounding mental health dimension is equally concerning, with 34.6% of MSM reporting serious depressive symptoms, suggesting a profound intersection between psychological distress and sexual risk-taking behaviours. These statistics illuminate the

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multifaceted challenges facing MSM communities, where reduced condom usage potentially stems from complex factors including mental health struggles, internalized stigma, substance use, trauma histories, and limited access to culturally competent healthcare services.<sup>116</sup>

Psychosocial problems are very common among TG women; 24% of them report having three or more syndemic conditions. Increased syndemic circumstances correspond with greater frequencies of condomless anal intercourse (CAI); 55% of TG women report CAI. MSM with various psychosocial disorders are more vulnerable to participate in high-risk sexual activities. Syndemic research highlights the need for multi-level interventions addressing mental health, behavioural risks, and structural inequalities simultaneously.<sup>20,56,117</sup>

In India, ‘men who have sex with men (MSM)’ and transgender individuals encounter profound healthcare barriers that significantly exacerbate sexually transmitted infection (STI) transmission dynamics, creating a cyclical pattern of increased vulnerability and disease spread. These barriers are deeply rooted in pervasive social stigma, discrimination within healthcare systems, legal restrictions, and structural inequalities that consistently marginalize these populations from accessing comprehensive medical services. Research reveals that healthcare providers often demonstrate prejudicial attitudes, creating environments where MSM and transgender individuals experience judgment, potential public disclosure risks, and reduced quality of care, which consequently discourage seeking timely medical interventions. The resulting healthcare avoidance leads to delayed STI diagnoses, prolonged untreated infections, and increased STI transmission potential within sexual networks.<sup>118–120</sup>

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# **MATERIALS AND**

# **METHODS:**

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## **5. MATERIALS AND METHODS:**

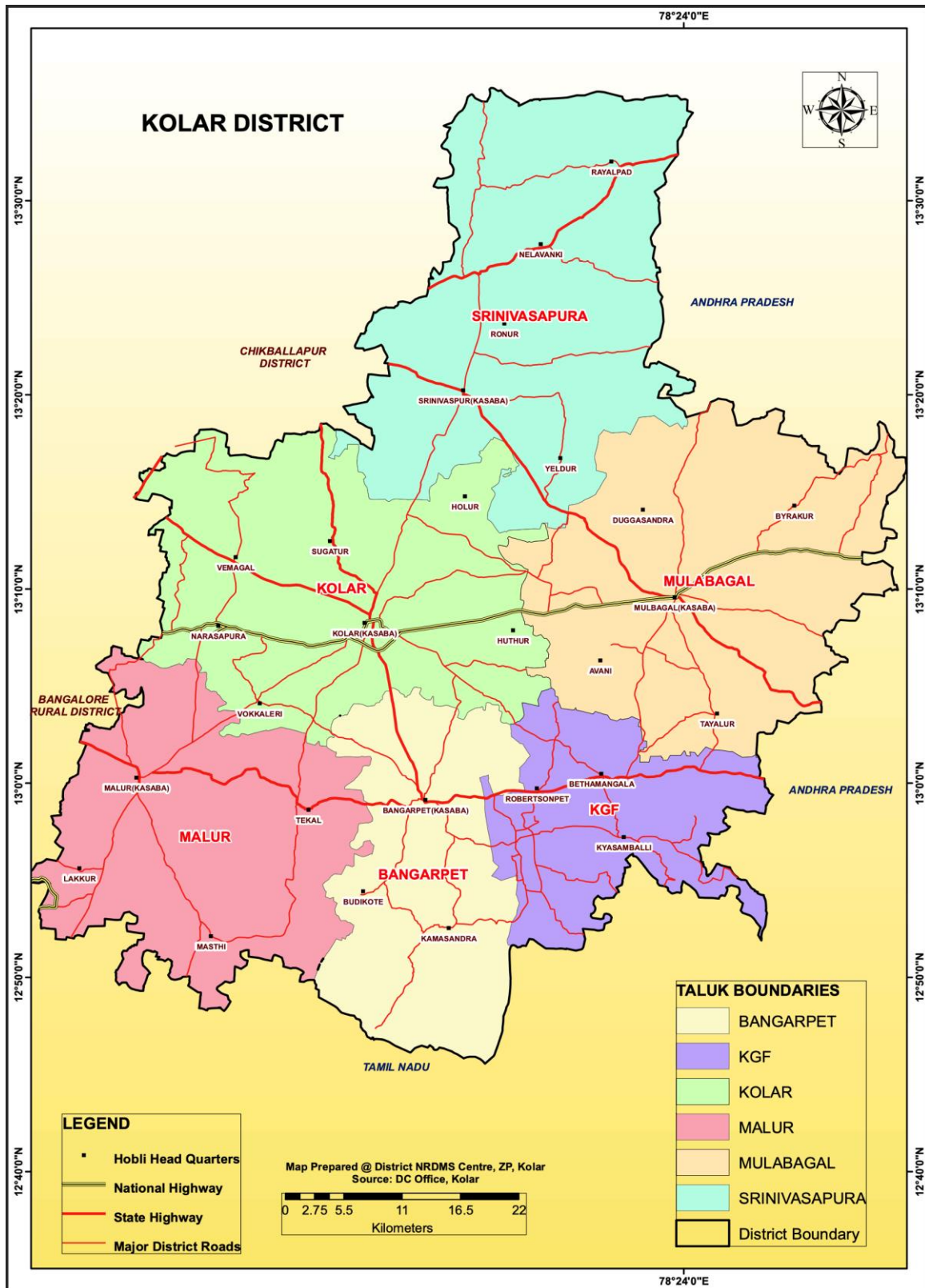
### **5.1 Study Area:**

The present study was undertaken in Kolar district. It has a population of 15,36,401 with 31.25% residing in urban areas.<sup>121</sup> The study was conducted across six catchment areas in the Kolar District, including:

1. Kolar
2. Bangarapet
3. KGF
4. Malur
5. Mulbagal
6. Srinivasapura

## Topography of Kolar district:

Fig – A: Map of Kolar district.



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## **5.2 Study Design:**

The study was done in mixed method type encompassing both quantitative and qualitative components during the period of 18 months from June 2023 to December 2024. The study has both Quantitative phase and Qualitative phase, using a Sequential Explanatory Method. This two-phase method was undertaken as quantitative data was gathered, and analyzed first before proceeding to record qualitative data and interpretation to explain quantitative findings. The qualitative data is utilized as context, depth, and more explanation of the quantitative results.

### **5.2.1 Quantitative Study:**

All the participants were informed on the purpose of the study, interviewed at their preferred time and place once they gave their informed consent and they were assured of confidentiality. Information needed for the sake of study objectives i.e. Alcohol/Substance abuse, symptoms of Depressive disorder, High risk behaviours, Victimization were collected from the subjects using the study tools mentioned above, which was translated to kannada, back translated and content validated in a pilot sample.

### **5.2.2 Qualitative Study:**

Separate Focus Group Discussions (FGD) were carried out for three groups involving 10 participants per group, at the respective Drop-In-Centre (Sammilana Samasthe) to collect the qualitative data from the participants. Interview guide for the FGD was prepared consisting of ground rules, engagement-exploratory-exit questions under four domains. The domains are as follows;

1. Mental Health & Depression
2. Social Support & Discrimination

- 
3. Risk Behaviors & Sexual Health
  4. Victimization & Safety

The FGD comprised of

1. The facilitator who was querying the participants from the interview guide.
2. A recorder who was audio recording the session and drawing the sociogram of the discussions.
3. A note taker who was taking down the critical answers, expressions and the participation of the participants.
4. 10 participants per FGD.

FGDs were conducted for three groups on different days. The seating arrangements were maintained in a circular fashion with all participants of the group including the facilitator facing-in. The FGD participants were welcomed with soft drinks and were given individual name cards named as S1, S2...., S10 to maintain confidentiality among the group. The participants were informed on the overview and purpose of the FGD and the audio recording. Consent was sought from the participants individually: an informed consent before beginning the activity to audio record the FGDs and publish the verbatim without participant identifiers. The FGD started with two ice-breaking sessions by activities like “Identity Mosaic” (non-verbal) where the participants were asked to draw or write 3-4 symbols/words that represent their personal identity/strengths/dream/aspiration and “Metaphor Introduction” where the participants were asked to prompt: ‘If my life journey were a mode of transportation, it would be...’. Both the sessions encouraged creative expression emphasizing personal choice and respect and also reduced direct personal disclosure pressure. The ground rules of the Focus Group Discussion

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were given and subsequently, discussion started. Open questions and probes were used and the discussion recorded using two recorders on both ends of circle. Arrangements for the session like snacks and refreshments were made available during the session. Based on the inputs from the sociogram the dominators were requested in a polite way to be less vocal. Shy participants were encouraged to speak out by giving more probes and motivations. FGDs were conducted up to the level of saturation when there was no new information to be extracted under each domain. Each FGD lasted for around a duration of 60 to 90 minutes. The audio recordings were transcribed and translated to English. The study participants and the Institutional Ethics Committee(IEC) gave ethical approval for the study.

### **5.3 Study population:**

Transgenders and Men who have Sex with Men of Kolar who are registered under Sammilana Samsthe and Sangama, a Community Based Organisation in Kolar under targeted intervention program was included in the study.

#### **5.3.1 Inclusion Criteria**

##### **Quantitative Component**

1. Individuals identifying as ‘Men who have Sex with Men (MSM) or Transgender individuals’, registered in Sammilana Samasthe and Sangama, Kolar.
2. Aged 18-65 years
3. Permanently residing in Kolar District for at least a period of past 6 months
4. Willing to participate in comprehensive health assessment, including:
  - Psychological screening

- 
- Sexual health and Behavioral risk assessment

5. Able to communicate in Kannada or English.

### **Qualitative Component**

1. Individuals from the quantitative study sample willing to participate in Focus Group Discussions
2. Able to articulate personal experiences related to psychosocial health
3. Willing to discuss health-seeking behaviors openly
4. No severe mental health conditions that would impair comprehensive communication

### **5.3.2 Exclusion Criteria**

#### **Quantitative Component**

1. Unable to provide informed consent
2. Experiencing acute medical conditions that would compromise participation
3. Individuals who:
  - Are currently receiving intensive psychiatric treatment
  - Have severe cognitive impairments
  - Are unable to comprehend study protocols
4. Individuals who have participated in similar recent studies that might introduce bias

#### **Qualitative Component**

1. Participants who:

- 
- Demonstrate significant acute mental health crisis / psychological distress during quantitative assessment
  - Are unwilling to discuss personal experiences
  - Have language barriers preventing comprehensive communication
2. Individuals who did not participate in the quantitative phase of the study

#### 5.4 Sample Size Calculation:

Sample size was calculated taken into consideration from a previous study done by Geeta Soohinda et al wherein the prevalence of depression among men who have sex with men (MSM) was found to be 58.84% to know the depression and its correlates in MSM within India.<sup>57</sup>

Sample size was determined using Open Epi Software version 3.01 but with an allowable error of 5%, and confidence level of 95% in consideration..

**‘N - Sample Size, P - Prevalence , Q - (100 –P) ,  $Z_{\alpha}$  - Confidence Interval, L - Allowable Error’**

Hence, P =58.84%, Q = 41.16% and L is 5% of P.

$$\begin{aligned}
 \text{Sample Size (N)} &= \frac{Z_{\alpha}^2 \times P \times Q}{L^2} & \text{where } Z_{\alpha} &= 1.96. \\
 &= \frac{(1.96)^2 \times 58.84 \times 41.16}{(5)^2} \\
 &= \frac{9303.7958}{25} \\
 &= 372.15
 \end{aligned}$$

Taking a Non-response of 10% the total sample size came to be around **410**

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## 5.5 Sampling Method:

**Probability Proportionate to Size (PPS)** sampling method was employed to ensure representative sampling across the different taluks.

### 5.5.1 Sampling Frame:

The total sampling frame comprised:

- ‘820 Transgender (TG) individuals’
- ‘1,984 Men who have Sex with Men (MSM)’

The target sample size was 410 participants (365 TG & MSM + 45 TG & MSM – LHIV), distributed proportionately across the six catchment areas.

- The sampling method ensured proportional representation of TG and MSM populations across different taluks in the Kolar District.

The sampling distribution was as follows:

**Table – A : TG & MSM population from each taluk (6 Catchment areas) of Kolar district:**

| Taluks | Number of TGs in each taluk | Number of MSM in each taluk | Number of TG-LHIV in each taluk | Number of MSM-LHIV in each taluk | N =<br>Samples Required<br>(TG&MSM + TG&MSM-LHIV) | Interview site:                      |
|--------|-----------------------------|-----------------------------|---------------------------------|----------------------------------|---------------------------------------------------|--------------------------------------|
| Kolar  | 453                         | 624                         | 7                               | 10                               | 70 (53+17)                                        | Sammilina<br>Samsthe,<br>Muneeshwara |

|                      |     |      |    |    |                 |                                                                             |
|----------------------|-----|------|----|----|-----------------|-----------------------------------------------------------------------------|
|                      |     |      |    |    |                 | Nagara, Kolar                                                               |
| <b>Bangarapet</b>    | 113 | 238  | 5  | 1  | 68 (62+6)       | Sammilina<br>Samsthe,<br>Bangarapet Taluk<br>Hospital,<br>bangarapet.       |
| <b>KGF</b>           | 86  | 294  | 2  | 4  | 68 (62+6)       | Sammilina<br>Samsthe, KGF<br>Taluk Hospital,<br>KGF.                        |
| <b>Malur</b>         | 57  | 136  | 1  | 4  | 68 (63+5)       | Sammilina<br>Samsthe, Malur<br>Taluk Hospital,<br>Malur.                    |
| <b>Mulbagal</b>      | 100 | 491  | 2  | 5  | 68 (61+7)       | Sammilina<br>Samsthe,<br>Mulbagal Taluk<br>Hospital,<br>Mulbagal.           |
| <b>Srinivasapura</b> | 11  | 201  | 0  | 4  | 68 (64+4)       | Sammilina<br>Samsthe,<br>Srinivasapura<br>Taluk Hospital,<br>Srinivasapura. |
| <b>Total</b>         | 820 | 1984 | 17 | 28 | 410<br>(365+45) |                                                                             |

### 5.5.2 Identification and Recruitment of participants:

Sammilana Samasthe (NGO) and Sangama (NGO) working for the LGBT community as a part of targeted intervention program in Kolar was used as a window to entry into the

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network of MSM and Transgenders. 410 MSM and Transgenders were reached by involving the help of peer outreach workers under targeted intervention program.

### **5.6 Study Tool:**

- 1) PATIENT HEALTH QUESTIONNAIRE (PHQ-9) for depression questionnaire
- 2) THE HIV RISK-TAKING BEHAVIOUR SCALE (HRBS) for High Risk Behavior questionnaire.
- 3) LGBT MINORITY STRESS MEASURE by Pearl L. Outland for Victimization questionnaire.

These study tools are widely used in research and clinical settings to assess mental health, risk behaviors, and minority stress among different populations. Below is an elaboration on each tool, along with insights on their application and considerations.

#### **5.6.1 PATIENT HEALTH QUESTIONNAIRE (PHQ-9) – Depression Assessment**

The PHQ-9 is a commonly administered self-report questionnaire in measuring the degree of depression. It is based on the criteria for diagnosis of Major Depressive Disorder (MDD) according to the DSM — 5 (Diagnostic and Statistical Manual of Mental Disorders – 5).<sup>49</sup>

##### **Structure:**

- Comprises **9 questions**, each reflecting a core symptom of depression (e.g., lack of interest, hopelessness, fatigue).
- Uses a **4-point Likert scale** (0 = Not at all, 3 = Nearly every day).
- Scores range from **0 to 27**, with severity cutoffs:
- 0-4: Minimal depression

- 
- 5-9: Mild depression
  - 10-14: Moderate depression
  - 15-19: Moderately severe depression
  - 20-27: Severe depression

#### **Applications:**

- Used **clinically** for initial depression screening and tracking treatment response.
- Used in **research** for mental health assessments across populations.
- Validated across diverse groups, including adolescents, elderly, and culturally varied populations.

#### **Considerations:**

- While effective for **screening**, it is **not a diagnostic tool**. A follow-up clinical evaluation is necessary.
- Cultural and **language adaptations** may be required to ensure accuracy across different demographics.
- Scores may be **influenced by situational factors** like temporary stress or physical illness.

### **5.6.2 THE HIV RISK-TAKING BEHAVIOUR SCALE (HRBS) – High-Risk Behavior Questionnaire**

The HRBS is designed to measure high risk behaviors associated with ‘HIV transmission’, particularly among high-risk populations such as people who inject drugs (PWID) or individuals engaging in unprotected sex.<sup>122,123</sup>

#### **Structure:**

- Contains **11 self-report items** covering two key domains:

- 
- **Drug-use behavior:** Sharing needles, frequency of injection, drug paraphernalia sharing.
  - **Sexual risk behavior:** Unprotected sex, number of sexual partners, condom use.
  - Uses a **frequency-based response format** (e.g., Never, Sometimes, Often).

#### **Applications:**

- Commonly used in **HIV prevention research** to assess risk factors.
- Assists when developing harm reduction strategies such as needle exchange program and sexual health education.
- Assists in **clinical and public health interventions** targeting high-risk populations.

#### **Considerations:**

- **Self-report bias** is a major concern—participants may **underreport** or **overreport** behaviors.
- Not a direct measure of HIV **infection** risk but rather an indicator of **risk behavior**.
- Requires **cultural sensitivity**, as sexual and drug-use behaviors may carry stigma in certain populations.

### **5.6.3 LGBT MINORITY STRESS MEASURE – Victimization Questionnaire**

The **LGBT Minority Stress Measure** (developed by **Pearl L. Outland**) assesses **minority stress** experienced by LGBTQ+ individuals due to discrimination, stigma, and social exclusion.<sup>124</sup>

#### **Structure:**

- Measures multiple aspects of **minority stress**, including:
- **External stressors** (e.g., discrimination, hate crimes, workplace bias).

- 
- **Internalized stigma** (e.g., self-acceptance, internalized homophobia).
  - **Concealment** (e.g., fear of disclosure, passing as heterosexual).
  - **Victimization experiences** (e.g., bullying, harassment).
  - Uses a **Likert scale** format to measure frequency and severity of experiences.

#### **Applications:**

- Used in **psychological and sociological research** on LGBTQ+ mental health.
- Helps in developing **policy and interventions** aimed at reducing minority stress.
- Assists mental health professionals in understanding **risk factors** for ‘depression, anxiety, and PTSD’ in LGBTQ+ populations.

#### **Considerations:**

- Minority stress is **context-dependent** and may vary based on **geographical, cultural, and legal factors**.
- **Intersectionality** is crucial—experiences may differ based on **race, gender identity, socio-economic status**, etc.
- Of value in advocacy work, but self-reported may be subject to a recall bias or reluctant report of experience

#### **5.6.4 Methods employed in the current study to overcome considerations:**

While tools like the PHQ-9, HRBS, and LGBT Minority Stress Measure are valuable for understanding mental health and risk behaviors, it's essential to address their limitations thoughtfully.

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To overcome the cultural barriers, in our current study we made the participants more comfortable by choosing a place of their choice for the survey creating a supportive environment and emphasizing cultural sensitivity.

Also to ensure the language adaptations the questionnaires were translated to the regional language (Kannada) and back translated and content validated.

## **5.7 Pilot Study:**

### **5.7.1 Objectives of the Pilot Study**

- To identify and address potential challenges in questionnaire administration
- To evaluate the clarity, comprehensibility, and appropriateness of study instruments
- To refine data collection protocols

### **5.7.2 Study Design**

A pre-test pilot study was conducted among ‘Men who have Sex with Men (MSM) and Transgender individuals’ in Kolar District during June-July 2023. The pilot study participants were carefully selected to ensure they were distinct from the main study population to prevent contamination of the primary research sample.

### **5.7.3 Pilot Sample**

- Sample Size: 20 participants (5% of the main study sample)
- Demographic Composition: Matched the characteristics of the target population
- Selection: From similar but non-overlapping communities in Kolar District

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#### 5.7.4 Ethical Considerations

- Obtained separate informed consent for pilot study participation
- Ensured complete confidentiality
- Provided option to provide feedback on questionnaire design

**Note:** Pilot study participants were explicitly excluded from the main study sample to prevent bias and contamination of research findings.

#### 5.8 Analysis & Statistical Methods:

##### 5.8.1 Qualitative:

Using a rigorous thematic analysis following “Braun and Clarke’s six-phase framework”, qualitative data from the focus group were analyzed.<sup>125</sup> The researchers conducted a systematic, interpretive analysis of verbatim transcripts from three focus group discussions involving MSM and Transgender participants in Kolar District. The transcripts were manually coded through both inductive and deductive methods. Initially, the transcripts were meticulously transcribed, translated, and anonymized, with each transcript assigned a unique identifier to ensure confidentiality. The analytical process began with framing meaningful quotations from the verbatim. Then open coding was done where researcher conducted line-by-line coding to identify initial conceptual quotations and capture participants' lived experiences. Through an iterative process of constant comparison and recursive reading, preliminary inductive codes were clustered into potential categories. The categories are then clubbed under corresponding themes through deductive learning. The Themes were then rigorously reviewed and refined to ensure they coherently represented the data. Thematic analysis was done to derive various themes pertaining to health seeking behaviour and

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psychosocial factors. The thematic analysis was built on the syndemic theoretical framework and intersectionality perspective that enabled a fine interpretation of complex synergy between psychosocial health conditions, structural vulnerabilities and health-seeking behaviors. Trustworthiness was maintained through multiple strategies, including prolonged engagement with the data, peer debriefing, and member checking. The final thematic framework emerged through a collaborative analytical approach, with themes validated against the original transcripts and cross-referenced with the quantitative findings to bring out a correlating theory aligned with the study's research objectives. Rigorous ethical considerations were maintained throughout, ensuring participants' narratives were respected, anonymized, and interpreted within their full contextual complexity. Illustrative Codes were carefully selected to support and illuminate each theme, providing rich, nuanced insights into the lived experiences of MSM and Transgender individuals in the Kolar District. The Codes were then analysed using the Atlas.ti software. Highly grounded codes were represented in the form of Word Cloud. Co-occurrences among the codes was analysed based on the groundedness ( $Gr > 2$ ) of each codes over various categories using the Atlas.ti Software. Researchers employed reflexive practices, documenting potential connections between the codes according to the groundedness to create networks. Network Analysis was done based on the co-occurrences among the codes to bring out the pathway of Health Seeking behaviour and the connections between the Psychosocial factors.

### **5.8.2 Quantitative:**

The Tools to measure Depression, High Risk behavior and Victimization was used according to the guide provided by the authors of the respective tools. The collected data was coded and entered in Microsoft Excel 2020. Entered data has been transferred into IBM licensed SPSS statistics version 22.0 after editing and cleaning. Categorical data such as Gender perception,

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Religion, education, Occupation, Socioeconomic class, Gender reassignment Surgery, Common work done, Comorbidities, Substance Use Behavior was represented in the form of frequencies and proportions. Continuous data such as total Depression scores, High risk Behavior scores and Victimization scores was represented in the form of mean and standard deviations. Bar diagrams and Pie Diagrams have been used to present the data in graphical manner. Parametric tests of association was used. Chi-Square test was used to assess the association between the categorical independent variables and outcome variable (categorical) of interest (Depressive Disorder, Gender perception, Sex work and HIV Status). One Way ANOVA and Independent Samples t - Test was used to assess the association between the categorical independent variables and outcome variable (Continuous) of interest (High Risk Behavior and Victimization scores). Correlation Analysis was done to assess the syndemic relationship between the Psychosocial health conditions (Depression, High Risk Behavior and Victimization) with Pearson correlation coefficient (r). Binary Logistic Regression Analysis has been done to predict the severity of the Psychosocial health conditions over the HIV status (Yes/No). Adjusted Odds ratio along with its 95% Confidence Interval has been used to quantify the relationship of each Psychosocial health conditions with the HIV status. 'p value <0.05 has been considered statistically significant for Chi Square test, One Way ANOVA and Independent Samples t – Test'. 95% Confidence Interval without the null value has been considered statistically significant for Adjusted Odds ratios.

## **5.9 Ethical Consideration.**

This research received an approval of the Institutional Ethical Review Committee of Sri Devaraj Urs Academy of Higher education and Research, Kolar. (No. DMC/KLR/IEC/14/2023-24)

## **5.10 Autonomy**

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- As such the participants of the study received a participant information sheet, which described the study and invited to participate voluntarily.

- Participants had freedom to be voluntary respondents and they were not forced in any way to take part in the study. All participants provided informed consent, to the purpose of the study and type of assessments and potential risks or benefits.

### **5.11 Confidentiality**

- A self-administered and, confidential questionnaire was completed by the participants to obtain this data.
- Throughout the study strict confidentiality of the personal information, their health status was maintained.
- The collected data was accessible only to the study team.
- The entered data was stored in a password-protected Excel sheet for analysis.
- Anonymized data (Consent Forms) were kept in a department locker to ensure limited accessibility.

### **5.12 Benevolence**

- The participants who were found to have Depressive disorder and High Risk Behaviors and Victimization Experiences were informed regarding the same and advised to seek medical support.
- The study aimed to benefit the participants and contribute to the understanding of Psychosocial Health conditions and its impact on health among Transgenders and MSM individuals.
- Researcher ensured that the study design, procedures, and tools, prioritized the well-being of the participants.

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### **5.13 Justice**

- Research ensured that the selection of participants was fair and equitable, devoid of any discrimination.
- The benefits of the research were distributed fairly among all participants, while minimizing any burdens or risks.

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# **RESULTS**

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## **RESULTS**

### **QUANTITATIVE ANALYSIS:**

The study was conducted among Transgenders and MSM (Men who have sex with men) population in Kolar district to determine the presence and co-occurrence of depression, high risk behaviours, victimization and its association with sexually transmitted infections among MSM and transgenders in Kolar district.

Required information relevant to study objectives such as Alcohol/Substance abuse, High risk behaviours, Victimization were collected from the participants using the validated study tools.

The study included 410 participants from various taluks of Kolar district.

The study covered 259 Transgenders, out of which 76 participants were Transgender Women and 183 participants were TRANSEXUALS and 151 MSM, out of which 91 participants were KOTHI and 60 participants were DOUBLE DECKERS.

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**Table- 1 :**

**Distribution of study participants according to Gender perception: (n = 410)**

| <b>GENDER<br/>PERCEPTION</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|------------------------------|------------------|----------------|
| TRANSGENDER WOMEN            | 76               | 18.5           |
| TRANSEXUAL                   | 183              | 44.6           |
| KOTHI                        | 91               | 22.2           |
| DOUBLEDECKER                 | 60               | 14.6           |
| Total                        | 410              | 100.0          |

From the above table it is observed that among 410 study participants from Kolar district, 259 participants were transgenders and 151 participants were MSM (Men who have sex with men).

Among the study participants majority 183 (44.6%) were TRANSEXUALS, followed by 91 (22.2%) KOTHIS, the rest being TRANSGENDER WOMEN 76 (18.5%) and DOUBLE DECKERS 60 (14.6%).

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**Table – 2:**

**Distribution of study participants according to Religion: (n = 410)**

| RELIGION  | FREQUENCY | PERCENT |
|-----------|-----------|---------|
| HINDU     | 348       | 84.9    |
| CHRISTIAN | 17        | 4.1     |
| MUSLIM    | 45        | 11.0    |
| Total     | 410       | 100.0   |

From the above table it is observed that among 410 study participants, majority of them belong to the Hindu religion 348 (84.9%) and the least is Muslim religion 45 (11%) and Christian religion 17 (4.1%).

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**Table – 3:**

**Distribution of study participants according to Education:**

**(n = 410)**

| <b>EDUCATION</b>     | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------|------------------|----------------|
| ILLITERATE           | 29               | 7.1            |
| PRIMARY SCHOOL       | 94               | 22.9           |
| MIDDLE SCHOOL        | 161              | 39.3           |
| HIGH SCHOOL          | 72               | 17.6           |
| INTERMEDIATE/DIPLOMA | 40               | 9.8            |
| GRADUATE             | 11               | 2.7            |
| PROFESIONAL DEGREE   | 3                | .7             |
| Total                | 410              | 100.0          |

According to the above table majority of the study participants have the educational qualification till Middle school 161 (39.3%) followed by Primary school 94 (22.9%); High School 72 (17.6) and the least being Professional degree 3 (0.7%).

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**Table – 4:**

**Distribution of study participants according to Occupation:**

**(n = 410)**

| <b>OCCUPATION</b>                            | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------------------------------|------------------|----------------|
| UNEMPLOYED                                   | 53               | 12.9           |
| ELEMENTARY OCCUPATION                        | 257              | 62.7           |
| PLANT & MACHINE OPERATOR                     | 46               | 11.2           |
| CRAFT & RELATED TRADE WORKERS                | 10               | 2.4            |
| SKILLED AGRICULTURAL & FISHERY<br>WORKERS    | 7                | 1.7            |
| SKILLED WORK, SHOP & MARKET<br>SALES WORKERS | 26               | 6.3            |
| CLERK                                        | 9                | 2.2            |
| PROFESSIONALS                                | 2                | .5             |
| Total                                        | 410              | 100.0          |

According to the above table majority of the study participants were doing Elementary occupation 257 (62.7%), 53 (12.9%) participants were Unemployed, 46 (11.2) were working as Plant & Machine Operators, 9 (2.2%) participants had clerical works, 2 (0.5%) of them were having Professional jobs.

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**Table – 5:**

**Distribution of study participants according to Socioeconomic status: (n = 410)**

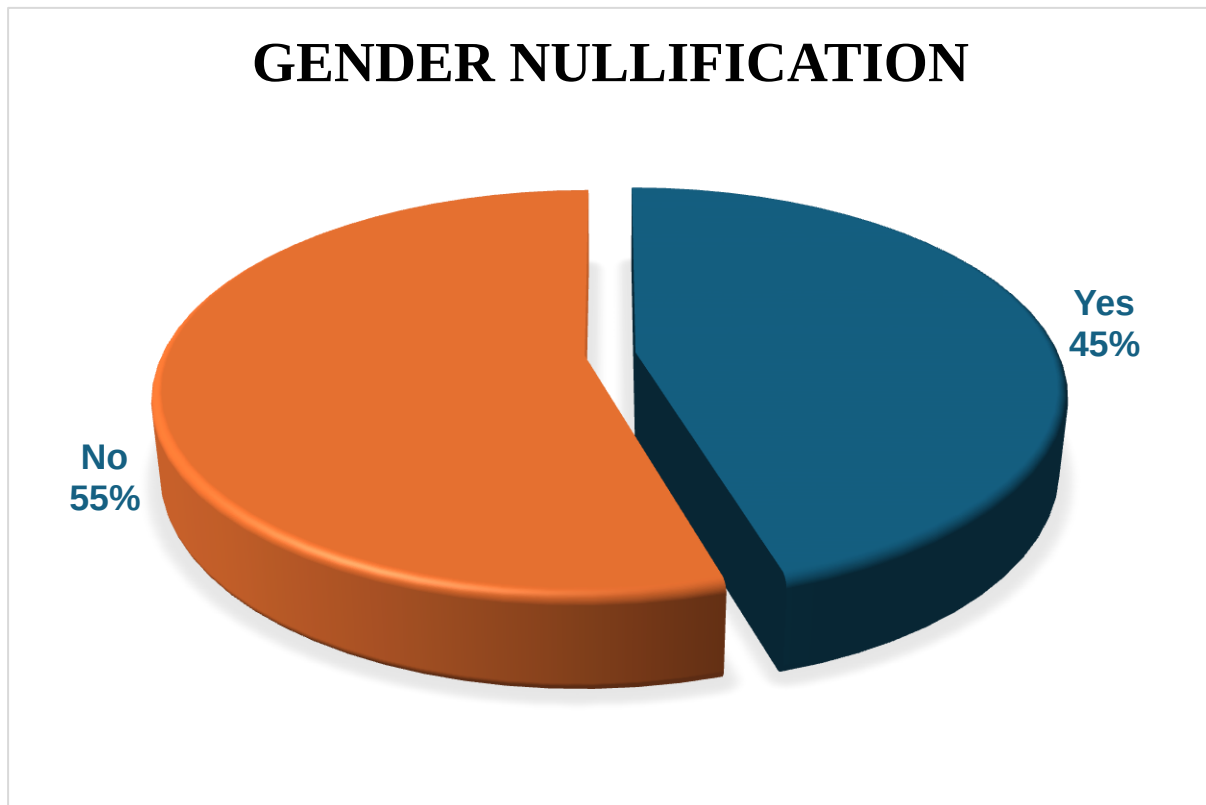
| <b>SOCIOECONOMIC CLASS</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------------|------------------|----------------|
| UPPER CLASS                | 172              | 42.0           |
| UPPER MIDDLE CLASS         | 190              | 46.3           |
| LOWER MIDDLE CLASS         | 42               | 10.2           |
| UPPER LOWER CLASS          | 4                | 1.0            |
| LOWER CLASS                | 2                | .5             |
| Total                      | 410              | 100.0          |

According to BG Prasad classification of socioeconomic status (Jan 2025) majority of the study participants belonged to Upper middle class 190 (46.3%) followed by Upper class 172 (42.0%); Lower Middle Class 42 (10.2%) participants and the least being Lower class 2 (0.5%).

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**Figure – 1:**

**Distribution of study participants according to the Sex Reassignment Surgery (SRS) done : (n = 410)**



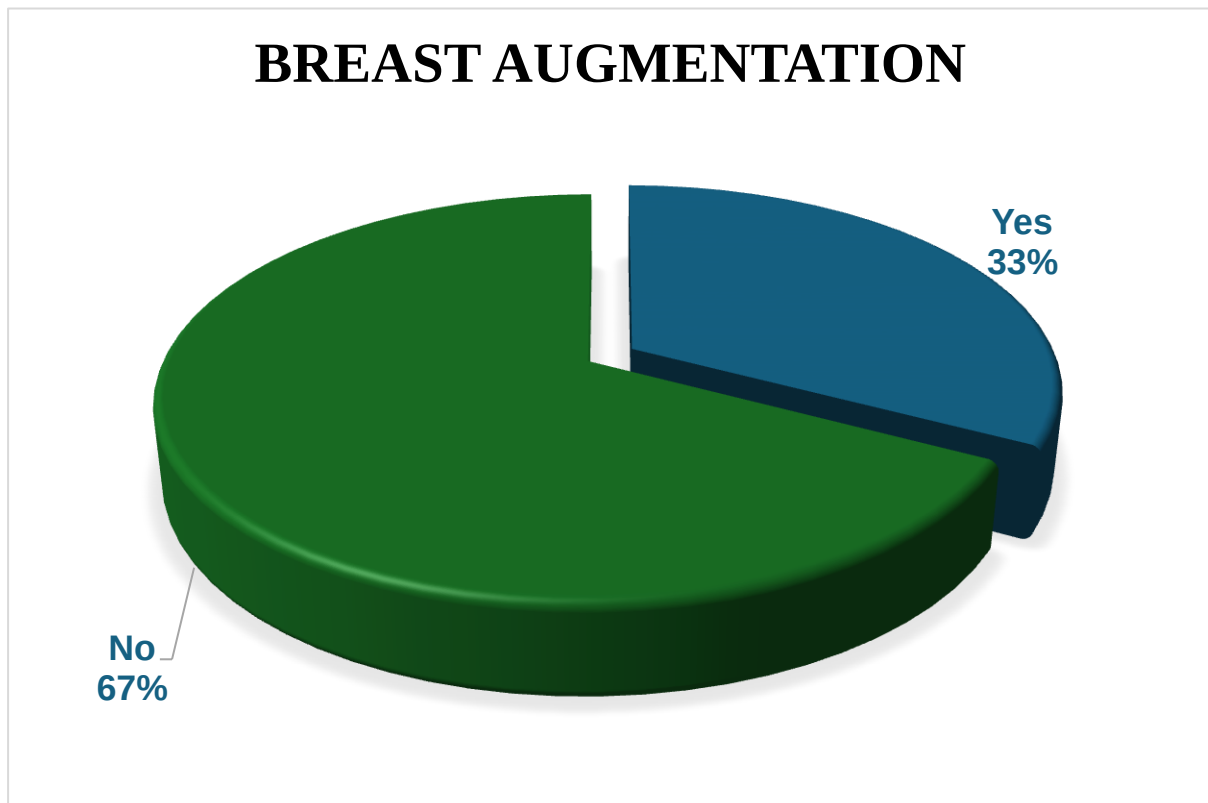
Above Pie chart suggests that nearly half of the study participants 186 (45.4%) had underwent Gender Nullification surgery which involves both Penectomy (removal of the penis) and Bilateral Orchiectomy (removal of both testes).

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**Figure – 2:**

**Distribution of study participants according to the Sex Reassignment Surgery (SRS)**

**done : (n = 410)**

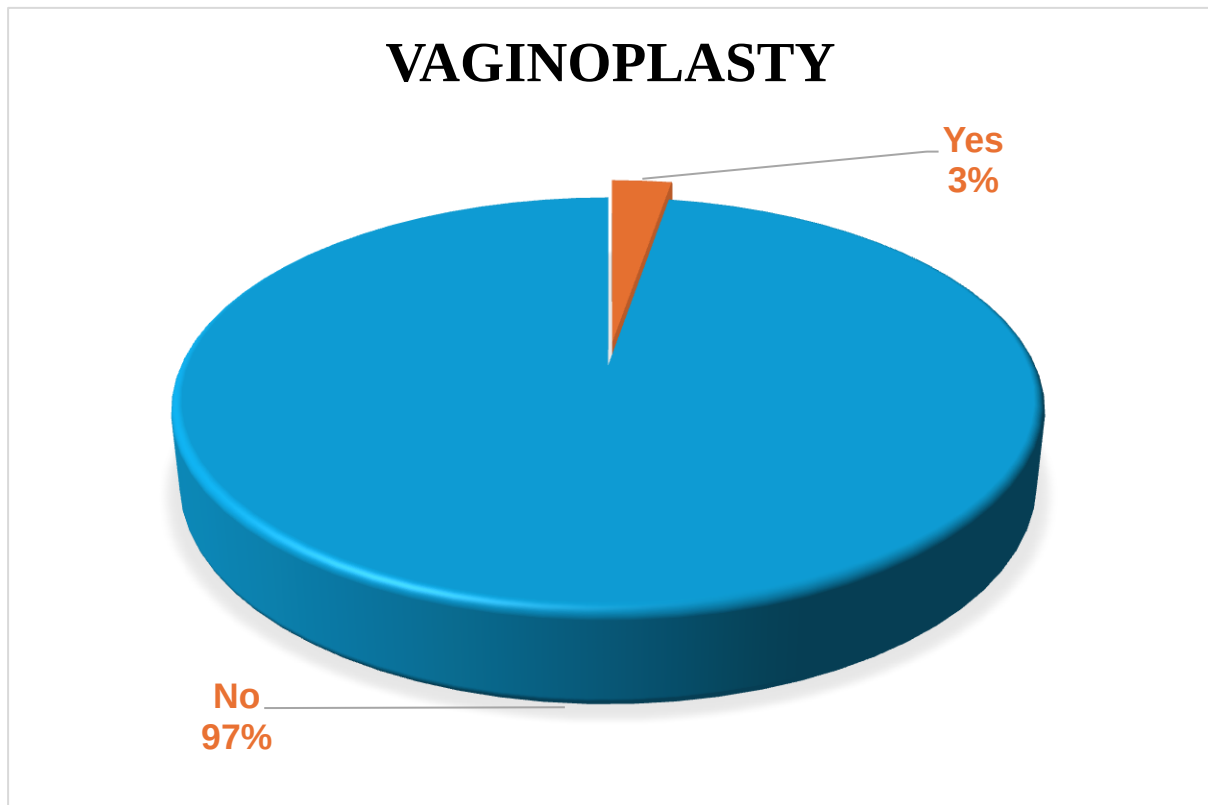


Above Pie chart suggests that nearly 1/3<sup>rd</sup> of the study participants have undergone Breast Augmentation surgery 134 (32.7%).

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**Figure – 3:**

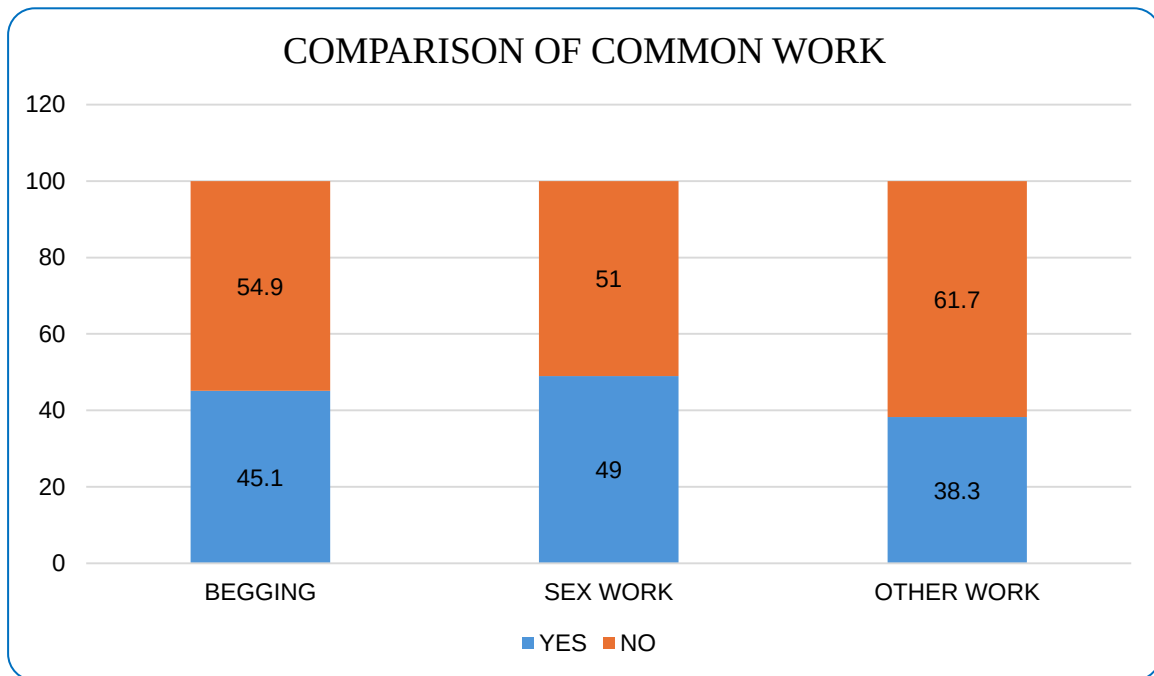
**Distribution of study participants according to the Sex Reassignment Surgery (SRS) done : (n = 410)**



Above Pie chart suggests that among study participants only a very few participants 11 (2.7%) had underwent Vaginoplasty.

**Figure – 4:**

**Distribution of study participants according to the Common Work done : (n = 410)**



The above bar graph suggests that among the study participants nearly half of the study participants were doing sex work 201 (49%) and begging 185 (45.1%) and 157 (38.3%) participants were involved in other occupations.

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**Table – 6:**

**Distribution of study participants according to Comorbidity:**

**(n = 410)**

| <b>DIABETES</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|-----------------|------------------|----------------|
| NO              | 374              | 91.2           |
| YES             | 36               | 8.8            |
| Total           | 410              | 100.0          |

The above data reveals that, among the total study participants only 36 (8.8%) were known to be diabetic and the rest of the participants 91.2% had no history of diabetes.

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**Table – 7:**

**Distribution of study participants according to Comorbidity:**

**(n = 410)**

| <b>HYPERTENSION</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|---------------------|------------------|----------------|
| NO                  | 379              | 92.4           |
| YES                 | 31               | 7.6            |
| Total               | 410              | 100.0          |

According to the above table, 31 (7.6%) of the study participants were known to be hypertensive, whereas the remaining 92.4% of the study participants reported no history of the condition.

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**Table – 8:**

**Distribution of study participants according to Comorbidity:**

**(n = 410)**

| <b>ASTHMA</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|---------------|------------------|----------------|
| NO            | 400              | 97.6           |
| YES           | 10               | 2.4            |
| Total         | 410              | 100.0          |

The above data reveals that 400 (97.6%) of the total participants (N=410) reported no history of asthma, while only 10 (2.4%) were asthmatic patients on treatment based on the data.

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**Table – 9:**

**Distribution of study participants according to Comorbidity:**

**(n = 410)**

| <b>TUBERCULOSIS</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|---------------------|------------------|----------------|
| NO                  | 409              | 99.8           |
| YES                 | 1                | .2             |
| Total               | 410              | 100.0          |

From the above data it is evident that 99.8 percentage of the study participants had no history of tuberculosis while only one participant (0.2%) is a known case of tuberculosis.

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**Table – 10:**

**Distribution of study participants according to Comorbidity:**

**(n = 410)**

| <b>HYPOTHYROIDISM</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|-----------------------|------------------|----------------|
| NO                    | 391              | 95.4           |
| YES                   | 19               | 4.6            |
| Total                 | 410              | 100.0          |

From the above table it is appreciable that 19 (4.6%) of the study participants have Hypothyroidism whereas the remaining 391 (95.4%) was not known to have the same condition.

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**Table – 11:**

**Distribution of study participants according to Comorbidity:**

**(n = 410)**

| <b>HIV</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|------------|------------------|----------------|
| NO         | 365              | 89.0           |
| YES        | 45               | 11.0           |
| Total      | 410              | 100.0          |

The findings from the above table indicate that 365 (89.0%) of participants tested HIV-negative, while 45 (11%) were HIV-positive.

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**Table – 12:**

**Distribution of study participants according to self-reported Tobacco consumption: (n = 410)**

| <b>DURATION</b>            | <b>TOBACCO<br/>USAGE</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------------|--------------------------|------------------|----------------|
| Over the last two<br>weeks | NIL                      | 30               | 7.3            |
|                            | 1 TIME                   | 33               | 8.0            |
|                            | 2-5 TIMES                | 88               | 21.5           |
|                            | 6-10 TIMES               | 30               | 7.3            |
|                            | >10 TIMES                | 40               | 9.8            |
| Lifetime                   | NEVER                    | 189              | 46.1           |
| Total                      |                          | 410              | 100.0          |

From the above data, nearly half of the participants 189 (46.1%) reported never using tobacco. Over the last two weeks a small 33 (8.0%) subset experimented minimally. The largest group of 88 occasional users (21.5%), indicate moderate experimentation accounting for 2-5 times over two weeks. A smaller but notable group 30 (7.3%) with repeated but non-habitual use with 6-10 times over two weeks. The table also shows habitual or long-term use with more than 10 times in last two weeks among 40 (9.8%) of the sample. Whereas another small group 30 (7.3%) of the study participants reported that they haven't had any tobacco in the last two weeks.

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**Table – 13:**

**Distribution of study participants according to self-reported Alcohol consumption: (n = 410)**

| <b>DURATION</b>         | <b>ALCOHOL USAGE:</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|-------------------------|-----------------------|------------------|----------------|
| Over the last two weeks | NIL                   | 37               | 9.0            |
|                         | 1 TIME                | 113              | 27.6           |
|                         | 2-5 TIMES             | 50               | 12.2           |
|                         | 6-10 TIMES            | 6                | 1.5            |
|                         | >10 TIMES             | 13               | 3.2            |
| Lifetime                | NEVER (Lifetime)      | 191              | 46.6           |
| Total                   |                       | 410              | 100.0          |

This table states that, a plurality of participants, nearly half, 191 (46.6%) report lifetime abstinence from alcohol completely. Over the last two weeks, 113 participants (27.6%) a significant subset tried alcohol once, suggesting curiosity or limited social use. A smaller yet notable group 50 (12.2%) have used moderately (2-5 times) over two weeks, possibly reflecting occasional social drinking. Very few 6 (1.5%) consumed 6-10 times over two weeks showing repeated social / non-habitual use. A small but notable group 13 (3.2%) were frequent/regular users consuming more than 10 times over two weeks with habitual use, potentially signalling higher-risk drinking behaviors. Additionally, 37 (9.0%) of the participants had no exposure to alcohol over the last two weeks.

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**Table - 14****Distribution of study participants according to self-reported Marijuana usage: (n = 410)**

| <b>DURATION</b>            | <b>MARIJUANA<br/>USAGE</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------------|----------------------------|------------------|----------------|
| Over the last two<br>weeks | NIL                        | 14               | 3.4            |
|                            | >10 TIMES                  | 2                | .5             |
| Lifetime                   | NEVER                      | 394              | 96.1           |
| Total                      |                            | 410              | 100.0          |

From the data it is evident that majority of the participants 394 (96.1%) reported never using marijuana in their entire lifetime, indicating extremely low prevalence in this population. Over the two weeks, Only 2 participants (0.5%) admitted to using marijuana >10 times, suggesting minimal habitual use among the participants. Also 14v(3.4%) of the study participants did not use marijuana for last two weeks.

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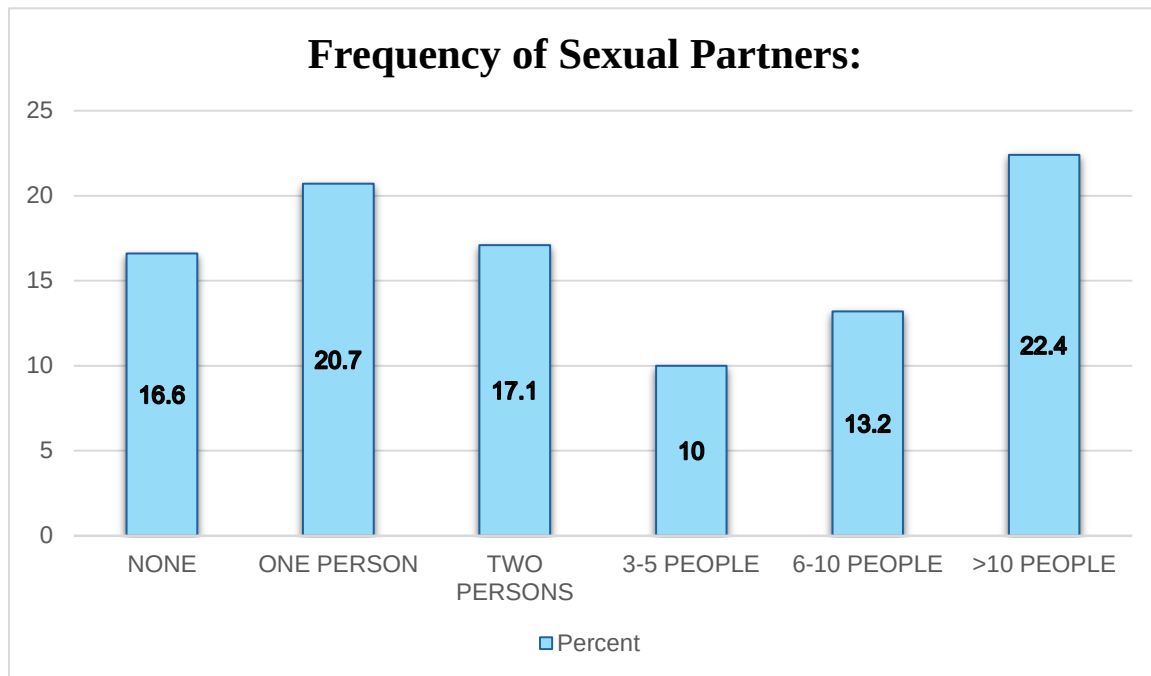
**Table - 15****Distribution of study participants according to self-reported Cocaine usage: (n = 410)**

| <b>DURATION</b>            | <b>COCAINE<br/>USAGE</b> | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------------|--------------------------|------------------|----------------|
| Over the last two<br>weeks | NIL                      | 2                | 0.5            |
|                            | 1 TIME                   | 1                | 0.2            |
| Lifetime                   | NEVER                    | 407              | 99.3           |
| Total                      |                          | 410              | 100.0          |

From the above data, it is appreciable that most of the participants 407 (99.3%) reported never using cocaine, indicating extremely rare usage in this population. Over the two weeks only 1 participant (0.2%) admitted to trying cocaine once and 2 participants (0.5%) did not use during the last two weeks.

**Fig – 5:**

**Distribution of study participants according to Frequency of Sexual Partners: (n = 410)**

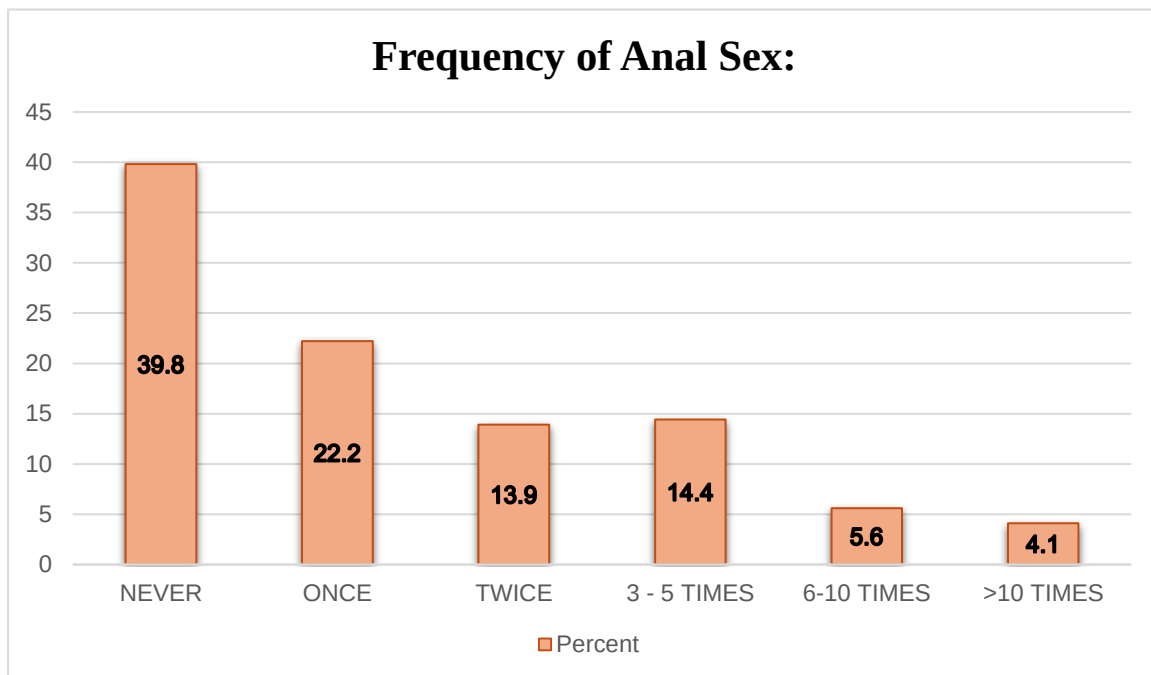


Above graph shows that the study included 410 participants with varying numbers of sexual partners. The largest group, 92 individuals (22.4%), reported having more than 10 sexual partners. This was followed by 85 participants (20.7%) with one sexual partner and 70 participants (17.1%) with two partners. Participants reporting no sexual partners numbered 68 (16.6%), while 54 (13.2%) had between 6 and 10 partners. The smallest group, 41 participants (10.0%), reported having 3 to 5 sexual partners.

**Fig – 6:**

**Distribution of study participants according to Frequency of**

**Anal Sex: (n = 410)**



From the above graph it is evident that among the 410 study participants, the largest group, 163 individuals (39.8%), reported never having anal sex. Those who had anal sex once accounted for 91 participants (22.2%), followed by 59 (14.4%) who engaged in anal sex 3 to 5 times. Participants reporting anal sex twice numbered 57 (13.9%). Fewer participants reported higher frequencies, with 23 (5.6%) having anal sex 6 to 10 times, and 17 (4.1%) reporting more than 10 occurrences.

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**Table – 16:**

**Distribution of study participants according to Depression Disorder Diagnosis: (n = 410)**

| <b>DEPRESSION DISORDER</b>       | <b>FREQUENCY</b> | <b>PERCENT</b> |
|----------------------------------|------------------|----------------|
| <b>NO DEPRESSIVE DISORDER</b>    | 274              | 66.8           |
| <b>OTHER DEPRESSIVE DISORDER</b> | 66               | 16.1           |
| <b>MAJOR DEPRESSIVE DISORDER</b> | 70               | 17.1           |
| <b>Total</b>                     | 410              | 100.0          |

The above table gives data according to PHQ – 9 scale for diagnosis of Depressive disorder. Majority of the study participants 274 (66.8%) did not have depressive disorder. 70 study participants (17.1 %) met criteria for Major Depressive Disorder (MDD), suggesting substantial prevalence of severe depression. Whereas 66 participants (16.1%) had subthreshold of Other Depressive Disorder. Nearly 1 in 3 affected combined, 33.2% of participants reported clinically relevant depressive disorders, highlighting a significant mental health burden.

---

**Table 17: Association of Gender perception with Depressive disorder: (n = 410)**

| <b>Gender perception *<br/>Depressive Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/><br/>(p Value)</b> |
|----------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------------------|
| <b>TRANSGENDER<br/>WOMEN</b>                       | 57<br>(75.0%)                         | 15<br>(19.7%)                            | 4<br>(5.3%)                              | 26.471<br><br>(0.001)                              |
| <b>TRANSEXUAL</b>                                  | 103<br>(56.3%)                        | 32<br>(17.5%)                            | 48<br>(26.2%)                            |                                                    |
| <b>KOTHI</b>                                       | 66<br>(72.5%)                         | 14<br>(15.4%)                            | 11<br>(12.1%)                            |                                                    |
| <b>DOUBLEDECKER</b>                                | 48<br>(80.0%)                         | 5<br>(8.3%)                              | 7<br>(11.7%)                             |                                                    |

**p<0.05 = statistically significant**

Among the TRANSEXUAL participants, 48 (26.2 %) of the participants were found to have symptoms of major depressive disorder, which is the highest among all gender groups and this association between Transsexuals and Depressive disorder was found to be statistically significant (p<0.05). Also the association between other gender groups and depressive disorder was found to be statistically significant (p<0.05).

---

**Table - 18****Association of Education with Depressive Disorder: (n = 410)**

| <b>Education *</b><br><b>Depressive</b><br><b>Disorder</b> | <b>NO</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>OTHER</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>MAJOR</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>CHI</b><br><b>SQUARE</b><br><b>VALUE</b><br><b>(p Value)</b> |
|------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------|
| <b>ILLITERATE</b>                                          | 16 (55.2%)                                        | 4 (13.8%)                                            | 9 (31.0%)                                            | 23.652<br><br>(0.003)                                           |
| <b>PRIMARY</b><br><b>SCHOOL</b>                            | 49 (52.1%)                                        | 20 (21.3%)                                           | 25 (26.6%)                                           |                                                                 |
| <b>MIDDLE</b><br><b>SCHOOL</b>                             | 110 (68.3%)                                       | 29 (18.0%)                                           | 22 (13.7%)                                           |                                                                 |
| <b>HIGH SCHOOL</b>                                         | 56 (77.8%)                                        | 9 (12.5%)                                            | 7 (9.7%)                                             |                                                                 |
| <b>PRE UNIV AND</b><br><b>ABOVE</b>                        | 43 (79.6%)                                        | 4 (7.4%)                                             | 7 (13.0%)                                            |                                                                 |

**p<0.05 = statistically significant**

Among illiterate participants, 9 (31.0%) had major depressive disorder, the highest rate among all education groups, while only 7 (13.0%) of those with pre-university and above were affected. This association between education and depressive disorder was statistically significant (p = 0.003).

---

**Table - 19****Association of Occupation with Depressive Disorder: (n = 410)**

| <b>Occupation *<br/>Depressive Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p Value)</b> |
|---------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|
| <b>UNEMPLOYED</b>                           | 31 (58.5%)                            | 8 (15.1%)                                | 14 (26.4%)                               | 3.783<br><br>(0.151)                          |
| <b>WORK FOR WAGES</b>                       | 243 (68.1%)                           | 58 (16.2%)                               | 56 (15.7%)                               |                                               |

**p<0.05 = statistically significant**

Major depressive disorder was noted in 14 (26.4%) unemployed compared to 56 (15.7%) working for wages, but this association between occupation and depressive disorder was not statistically significant (p = 0.151).

---

**Table 20: Association of Begging with Depressive Disorder****(n = 410)**

| <b>Begging *<br/>Depressive<br/>Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|
| <b>NO</b>                                    | 161 (71.6%)                           | 31 (13.8%)                               | 33 (14.7%)                               | 5.025<br><br>(0.083)                          |
| <b>YES</b>                                   | 113 (61.1%)                           | 35 (18.9%)                               | 37 (20.0%)                               |                                               |

**p<0.05 = statistically significant**

Major depressive disorder was identified in 37 (20.0%) of those engaged in Begging and 33 (14.7%) of those not engaged. However, this association between begging and depressive disorder was not statistically significant ( $p>0.05$ ).

---

**Table 21: Association of Sex Work with Depressive Disorder****(n = 410)**

| <b>Sex Work *</b><br><b>Depressive</b><br><b>Disorder</b> | <b>NO</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>OTHER</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>MAJOR</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>CHI SQUARE</b><br><br><b>VALUE</b><br><br><b>(p Value)</b> |
|-----------------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
| <b>NO</b>                                                 | 150 (71.8%)                                       | 31 (14.8%)                                           | 28 (13.4%)                                           | 5.356<br><br>(0.067)                                          |
| <b>YES</b>                                                | 124 (61.7%)                                       | 35 (17.4%)                                           | 42 (20.9%)                                           |                                                               |

**p<0.05 = statistically significant**

Major depressive disorder was found in 42 (20.9%) participants involved in sex work, compared to 28 (13.4%) among those not involved. This difference did not attain statistical significance ( $p>0.05$ ).

---

**Table 22: Association of Other Work with Depressive Disorder:**

**(n = 410)**

| <b>Other Work *</b><br><b>Depressive</b><br><b>Disorder</b> | <b>NO</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>OTHER</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>MAJOR</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>CHI SQUARE</b><br><br><b>VALUE</b><br><br><b>(p Value)</b> |
|-------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
| <b>NO</b>                                                   | 154 (60.9%)                                       | 45 (17.8%)                                           | 54 (21.3%)                                           | 11.740<br><br>(0.003)                                         |
| <b>YES</b>                                                  | 120 (76.4%)                                       | 21 (13.4%)                                           | 16 (10.2%)                                           |                                                               |

**p<0.05 = statistically significant**

Major depressive disorder occurred in 54 (21.3%) participants not engaged in other work, compared to 16 (10.2%) among those who were engaged in other work. This association between other work and depressive disorder was statistically significant (p<0.05).

---

**Table 23: Association of HIV status with Depressive Disorder****(n = 410)**

| <b>HIV Status *</b><br><b>Depressive</b><br><b>Disorder</b> | <b>NO</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>OTHER</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>MAJOR</b><br><b>DEPRESSIVE</b><br><b>DISORDER</b> | <b>CHI SQUARE</b><br><br><b>VALUE</b><br><br><b>(p Value)</b> |
|-------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
| <b>NO</b>                                                   | 265 (72.6%)                                       | 55 (15.1%)                                           | 45 (12.3%)                                           | 62.619<br><br>(0.0001)                                        |
| <b>YES</b>                                                  | 9 (20.0%)                                         | 11 (24.4%)                                           | 25 (55.6%)                                           |                                                               |

**p<0.05 = statistically significant**

Among participants with a history of HIV, 25 (55.6%) had major depressive disorder, whereas only 45 (12.3%) of those without HIV had major depressive disorder. This association between HIV status and Depressive disorder was highly significant ( $p<0.05$ ).

---

**Table 24: Association of Tobacco Abuse with Depressive Disorder****(n = 410)**

| <b>TOBACCO ABUSE</b><br><br><b>* Depressive<br/>Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/><br/>(p Value)</b> |
|--------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------------------|
| <b>Nil</b>                                                   | 145 (66.2%)                           | 36 (16.4%)                               | 38 (17.4%)                               | 19.669<br><br>(0.0001)                             |
| <b>1-5 times</b>                                             | 94 (77.7%)                            | 17 (14.0%)                               | 10 (8.3%)                                |                                                    |
| <b>&gt;5 times</b>                                           | 35 (50.0%)                            | 13 (18.6%)                               | 22 (31.4%)                               |                                                    |

**p<0.05 = statistically significant**

Among the abusers who used tobacco more than five times in the past two weeks, 22 (31.4%) had major depressive disorder, compared to 38 (17.4%) for non-abusers. This trend was statistically significant ( $p<0.05$ ).

---

**Table 25: Association of Alcohol Abuse with Depressive Disorder****(n = 410)**

| <b>ALCOHOL<br/>ABUSE *<br/>Depressive<br/>Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>TEST<br/>VALUE (p<br/>Value)</b> |
|--------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|-------------------------------------|
| <b>NIL</b>                                             | 165 (72.4%)                           | 38 (16.7%)                               | 25 (11.0%)                               | 14.495 <sup>b</sup><br><br>(0.003)  |
| <b>1-5 TIMES</b>                                       | 98 (60.1%)                            | 26 (16.0%)                               | 39 (23.9%)                               |                                     |
| <b>&gt;5 TIMES</b>                                     | 11 (57.9%)                            | 2 (10.5%)                                | 6 (31.6%)                                |                                     |

**b – Fisher’s Exact Value; p<0.05 = statistically significant**

Major depressive disorder was identified in 39 (23.9%) of participants who drank 1–5 times in the past two weeks, 6 (31.6%) of those who drank more than 5 times. This association alcohol abuse and depressive disorder was statistically significant (p<0.05).

---

**Table - 26****Association of Frequency of Sexual Partners with Depressive Disorder: (n = 410)**

| <b>Frequency of Sexual Partners *<br/>Depressive Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p Value)</b> |
|---------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|
| <b>NONE</b>                                                   | 51 (75.0%)                            | 6 (8.8%)                                 | 11 (16.2%)                               | 3.653<br><br>(0.455)                          |
| <b>1-5 PEOPLE</b>                                             | 127 (64.8%)                           | 34 (17.3%)                               | 35 (17.9%)                               |                                               |
| <b>&gt;5 PEOPLE</b>                                           | 96 (65.8%)                            | 26 (17.8%)                               | 24 (16.4%)                               |                                               |

**p<0.05 = statistically significant**

Major depressive disorder occurred at similar rates across all groups: 11 (16.2%) for none, 35 (17.9%) for 1–5 partners, and 24 (16.4%) for more than 5 partners; this association between the sexual partner frequency and depressive disorder was not statistically significant ( $p > 0.05$ ).

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**Table - 27**

**Association of Frequency of Anal Sex with Depressive Disorder:**

**(n = 410)**

| <b>Frequency of<br/>Anal Sex *<br/>Depressive<br/>Disorder</b> | <b>NO<br/>DEPRESSIVE<br/>DISORDER</b> | <b>OTHER<br/>DEPRESSIVE<br/>DISORDER</b> | <b>MAJOR<br/>DEPRESSIVE<br/>DISORDER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|
| <b>NEVER</b>                                                   | 125 (76.7%)                           | 15 (9.2%)                                | 23 (14.1%)                               | 24.704<br><br>(0.0001)                        |
| <b>1-5 TIMES</b>                                               | 134 (64.7%)                           | 39 (18.8%)                               | 34 (16.4%)                               |                                               |
| <b>&gt;5 TIMES</b>                                             | 15 (37.5%)                            | 12 (30.0%)                               | 13 (32.5%)                               |                                               |

**p<0.05 = statistically significant**

Participants reporting more than 5 times anal sex had the highest rate of major depressive disorder, 13 (32.5%), while only 23 (14.1%) among those who never had anal sex had major depressive disorder. This association between depression anal sex was statistically significant ( $p < 0.05$ ).

---

**Table 28: Association of Gender perception with HIV Status****(n = 410)**

| <b>Gender perception<br/>* HIV Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-------------------------------------------|-------------|------------|-------------------------------------------|
| <b>TRANSGENDER<br/>WOMEN</b>              | 69 (90.8%)  | 7 (9.2%)   | 1.387<br><br>(0.724)                      |
| <b>TRANSEXUAL</b>                         | 164 (89.6%) | 19 (10.4%) |                                           |
| <b>KOTHI</b>                              | 78 (85.7%)  | 13 (14.3%) |                                           |
| <b>DOUBLEDECKER</b>                       | 54 (90.0%)  | 6 (10.0%)  |                                           |

**p<0.05 = statistically significant**

The proportion of HIV-positive individuals among kothis was 13 (14.3%), with smaller proportions in transsexuals 19 (10.4%), compared to HIV negative. There was no statistically significant association between gender and HIV status ( $p>0.05$ ).

---

**Table - 29****Association of Education with HIV Status: (n = 410)**

| <b>Education * HIV Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-------------------------------|-------------|------------|-------------------------------------------|
| <b>ILLITERATE</b>             | 21 (72.4%)  | 8 (27.6%)  | 10.108<br><br>(0.039)                     |
| <b>PRIMARY SCHOOL</b>         | 84 (89.4%)  | 10 (10.6%) |                                           |
| <b>MIDDLE SCHOOL</b>          | 143 (88.8%) | 18 (11.2%) |                                           |
| <b>HIGH SCHOOL</b>            | 67 (93.1%)  | 5 (6.9%)   |                                           |
| <b>PRE UNIV AND ABOVE</b>     | 50 (92.6%)  | 4 (7.4%)   |                                           |

**p<0.05 = statistically significant**

HIV positivity was highest among the illiterate group at 8 (27.6%), whereas it was lowest among those with pre-university and above at 4 (7.4%). The association between education and HIV status was statistically significant ( $p < 0.05$ ).

---

**Table - 30****Association of Occupation with HIV Status: (n = 410)**

| <b>Occupation * HIV Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|--------------------------------|-------------|------------|-------------------------------------------|
| <b>UNEMPLOYED</b>              | 44 (83.0%)  | 9 (17.0%)  | 2.247<br><br>(0.134)                      |
| <b>WORK FOR WAGES</b>          | 321 (89.9%) | 36 (10.1%) |                                           |

**p<0.05 = statistically significant**

More unemployed participants, 9 (17.0%), were HIV positive than those working for wages, 36 (10.1%), but this association was not statistically significant ( $p > 0.05$ ).

---

**Table 31: Association of Begging with HIV Status (n = 410)**

| <b>Begging * HIV<br/>Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|---------------------------------|-------------|------------|-------------------------------------------|
| <b>NO</b>                       | 196 (87.1%) | 29 (12.9%) | 1.868<br><br>(0.172)                      |
| <b>YES</b>                      | 169 (91.4%) | 16 (8.6%)  |                                           |

**p<0.05 = statistically significant**

HIV positivity was seen in 16 (8.6%) of those engaged in begging, compared to 29 (12.9%) of those not engaged. The association between begging and HIV status was not significant (p>0.05).

---

**Table 32: Association of Sex Work with HIV Status (n = 410)**

| <b>SEX WORK * HIV<br/>Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------|-------------|------------|-------------------------------------------|
| <b>NO</b>                        | 184 (88.0%) | 25 (12.0%) | 0.424<br><br>(0.515)                      |
| <b>YES</b>                       | 181 (90.0%) | 20 (10.0%) |                                           |

**p<0.05 = statistically significant**

HIV positivity was present in 20 (10.0%) participants involved in sex work and 25 (12.0%) not involved in sex work. This difference was not significant (p>0.05).

---

**Table 33: Association of Other Work with HIV Status (n = 410)**

| <b>OTHER WORK *<br/>H/o HIV Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------------|-------------|------------|-------------------------------------------|
| <b>NO</b>                              | 224 (88.5%) | 29 (11.5%) | 0.160                                     |
| <b>YES</b>                             | 141 (89.8%) | 16 (10.2%) | (0.689)                                   |

**p<0.05 = statistically significant**

HIV was reported by 16 (10.2%) of those in other work and 29 (11.5%) of those not in other work. The association was not significant (p>0.05).

---

**Table 34: Association of Tobacco Abuse with HIV Status****(n = 410)**

| <b>TOBACCO ABUSE<br/>* HIV Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|---------------------------------------|-------------|------------|-------------------------------------------|
| <b>Nil</b>                            | 190 (86.8%) | 29 (13.2%) | 4.741<br><br>(0.093)                      |
| <b>1-5 times</b>                      | 114 (94.2%) | 7 (5.8%)   |                                           |
| <b>&gt;5 times</b>                    | 61 (87.1%)  | 9 (12.9%)  |                                           |

**p<0.05 = statistically significant**

HIV positivity was observed in 29 (13.2%) of non-abusers, 7 (5.8%) moderate abusers, and 9 (12.9%) high abusers. There was no significant association between tobacco abuse and HIV status ( $p>0.05$ ).

---

**Table 35: Association of Alcohol Abuse with HIV Status (n = 410)**

| <b>ALCOHOL ABUSE<br/>* HIV Status</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|---------------------------------------|-------------|------------|-------------------------------------------|
| <b>NIL</b>                            | 208 (91.2%) | 20 (8.8%)  | 2.776<br><br>(0.250)                      |
| <b>1-5 TIMES</b>                      | 140 (85.9%) | 23 (14.1%) |                                           |
| <b>&gt;5 TIMES</b>                    | 17 (89.5%)  | 2 (10.5%)  |                                           |

**p<0.05 = statistically significant**

HIV was present in 23 (14.1%) of those drank 1-5 times, 2 (10.5%) of those drank more than 5 times, and 20 (8.8%) of non-drinkers, but with no significant association (p>0.05).

---

**Table - 36****Association of Frequency of Sexual Partners with HIV Status:****(n = 410)**

| <b>Frequency of Sexual Partners * HIV<br/>Status</b> | <b>NO</b>    | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|------------------------------------------------------|--------------|------------|-------------------------------------------|
| <b>NONE</b>                                          | 68 (100.0%)  | 0 (0.0%)   | 55.190<br><br>(0.0001)                    |
| <b>1-5 PEOPLE</b>                                    | 151 (77.0%)  | 45 (23.0%) |                                           |
| <b>&gt;5 PEOPLE</b>                                  | 146 (100.0%) | 0 (0.0%)   |                                           |

**p<0.05 = statistically significant**

Of those with no partners or more than 5 partners, none were HIV positive, while 45 (23.0%) of those with 1–5 partners were HIV positive. This association between frequency of sexual partners and HIV status was statistically significant ( $p < 0.05$ ).

---

**Table - 37**

**Association of Frequency of Anal Sex with HIV Status: (n = 410)**

| <b>Frequency of Anal Sex * HIV Status</b> | <b>NO</b>    | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-------------------------------------------|--------------|------------|-------------------------------------------|
| <b>NEVER</b>                              | 163 (100.0%) | 0 (0.0%)   | 33.513<br><br>(0.0001)                    |
| <b>1-5 TIMES</b>                          | 170 (82.1%)  | 37 (17.9%) |                                           |
| <b>&gt;5 TIMES</b>                        | 32 (80.0%)   | 8 (20.0%)  |                                           |

**p<0.05 = statistically significant**

No HIV positivity was seen in participants who never had anal sex, whereas 8 (20.0%) of those with >5 instances were HIV positive. This association was statistically significant (p < 0.05).

**Table - 38**

**Association of Education with Gender Perception: (n = 410)**

| <b>Education *<br/>Gender<br/>perception</b> | <b>TRANSGENDER<br/>WOMEN</b> | <b>TRANSEXU<br/>AL</b> | <b>KOT<br/>HI</b> | <b>DOUBLEDECK<br/>ER</b> | <b>CHI<br/>SQUAR<br/>E<br/>VALUE<br/>(p<br/>Value)</b> |
|----------------------------------------------|------------------------------|------------------------|-------------------|--------------------------|--------------------------------------------------------|
| <b>ILLITERA<br/>TE</b>                       | 9 (31.0%)                    | 11 (37.9%)             | 4<br>(13.8%)      | 5 (17.2%)                | 42.209<br>(0.0001)                                     |
| <b>PRIMARY<br/>SCHOOL</b>                    | 8 (8.5%)                     | 57 (60.6%)             | 18<br>(19.1%)     | 11 (11.7%)               |                                                        |
| <b>MIDDLE<br/>SCHOOL</b>                     | 39 (24.2%)                   | 77 (47.8%)             | 26<br>(16.1%)     | 19 (11.8%)               |                                                        |
| <b>HIGH<br/>SCHOOL</b>                       | 8 (11.1%)                    | 26 (36.1%)             | 24<br>(33.3%)     | 14 (19.4%)               |                                                        |
| <b>PRE UNIV<br/>AND<br/>ABOVE</b>            | 12 (22.2%)                   | 12 (22.2%)             | 19<br>(35.2%)     | 11 (20.4%)               |                                                        |

**p<0.05 = statistically significant**

Among those with primary school education, 57 (60.6%) identified as transexual, while only 12 (22.2%) of the pre-university/above did so, with a notable diversity across all groups. This association between education and gender perception was statistically significant ( $p < 0.05$ ).

**Table - 39**

**Association of Occupation with Gender Perception: (n = 410)**

| <b>Occupation *<br/>Gender<br/>perception</b> | <b>TRANSGENDER WOMEN</b> | <b>TRANSEXUAL</b> | <b>KOTH</b>       | <b>DOUBLEDECKER</b> | <b>CHI<br/>SQUARED<br/>VALUE<br/>(p<br/>Value)</b> |
|-----------------------------------------------|--------------------------|-------------------|-------------------|---------------------|----------------------------------------------------|
| <b>UNEMPLOYED</b>                             | 14 (26.4%)               | 25 (47.2%)        | 9<br>(17.0<br>%)  | 5 (9.4%)            | 3.996<br><br>(0.262)                               |
| <b>WORK FOR<br/>WAGES</b>                     | 62 (17.4%)               | 158 (44.3%)       | 82<br>(23.0<br>%) | 55 (15.4%)          |                                                    |

**p<0.05 = statistically significant**

Almost half of the unemployed, 25 (47.2%), identified as transexual, while for those working for wages, 158 (44.3%) did so. This association between occupation and gender perception was not statistically significant ( $p > 0.05$ ).

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**Table 40: Association of Begging with Gender Perception:****(n = 410)**

| <b>Begging *<br/>Gender<br/>perception<br/>n</b> | <b>TRANSGENDER<br/>WOMEN</b> | <b>TRANSEXUAL</b> | <b>KOTH<br/>I</b> | <b>DOUBLEDECKER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p<br/>Value)</b> |
|--------------------------------------------------|------------------------------|-------------------|-------------------|---------------------|---------------------------------------------------|
| <b>NO</b>                                        | 33 (14.7%)                   | 43 (19.1%)        | 89<br>(39.6%)     | 60 (26.7%)          | 193.85<br><br>(0.0001)                            |
| <b>YES</b>                                       | 43 (23.2%)                   | 140 (75.7%)       | 2<br>(1.1%)       | 0 (0.0%)            |                                                   |

**p<0.05 = statistically significant**

Begging was most common among transsexuals 140 (75.7%), followed by transgender women 43 (23.2%), kothis 2 (1.1%), and none among Doubleddeckers. The association between begging and gender perception was highly significant (p<0.05).

**Table 41: Association of Sex Work with Gender Perception :**

**(n = 410)**

| <b>SEX<br/>WORK *<br/>Gender<br/>perception</b> | <b>TRANSGENDER<br/>WOMEN</b> | <b>TRANSEXUAL</b> | <b>KOTH<br/>I</b> | <b>DOUBLEDECKER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p<br/>Value)</b> |
|-------------------------------------------------|------------------------------|-------------------|-------------------|---------------------|---------------------------------------------------|
| <b>NO</b>                                       | 29 (13.9%)                   | 32 (15.3%)        | 88<br>(42.1%)     | 60 (28.7%)          | 220.96<br><br>(0.0001)                            |
| <b>YES</b>                                      | 47 (23.4%)                   | 151 (75.1%)       | 3<br>(1.5%)       | 0 (0.0%)            |                                                   |

**p<0.05 = statistically significant**

The majority of sex workers were transsexuals 151 (75.1%), next were transgender women 47 (23.4%), kothis 3 (1.5%), with no doubledeckers. This association between sex work and gender perception was significant (p<0.05).

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**Table 42: Association of Other Work with Gender Perception:**

**(n = 410)**

| <b>OTHER<br/>WORK *<br/>Gender<br/>perception</b> | <b>TRANSGENDER<br/>WOMEN</b> | <b>TRANSEXUAL</b> | <b>KOTH<br/>I</b>  | <b>DOUBLEDECKER</b> | <b>CHI<br/>SQUARE<br/>VALUE<br/>(p<br/>Value)</b> |
|---------------------------------------------------|------------------------------|-------------------|--------------------|---------------------|---------------------------------------------------|
| <b>NO</b>                                         | 58 (22.9%)                   | 175 (69.2%)       | 10<br>(4.0%)       | 10 (4.0%)           | 246.55<br><br>(0.0001)                            |
| <b>YES</b>                                        | 18 (11.5%)                   | 8 (5.1%)          | 81<br>(51.6%)<br>) | 50 (31.8%)          |                                                   |

**p<0.05 = statistically significant**

Most participants involved in other work were kothis 81 (51.6%) and doubledeckers 50 (31.8%), followed by transgender women 18 (11.5%), and transsexuals 8 (5.1%). The association between other work and gender perception was highly significant (p<0.05).

**Table 43: Association of Tobacco Abuse with Gender perception : (n = 410)**

| <b>TOBACCO ABUSE<br/>* Gender perception</b> | <b>TRANSGENDER WOMEN</b> | <b>TRANSEXUAL</b> | <b>KOTHARI</b> | <b>DOUBLEDECKER</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------------------|--------------------------|-------------------|----------------|---------------------|-------------------------------------------|
| <b>Nil</b>                                   | 46 (21.0%)               | 94 (42.9%)        | 60<br>(27.4%)  | 19 (8.7%)           | 25.694<br>(0.0001)                        |
| <b>1-5 times</b>                             | 17 (14.0%)               | 53 (43.8%)        | 19<br>(15.7%)  | 32 (26.4%)          |                                           |
| <b>&gt;5 times</b>                           | 13 (18.6%)               | 36 (51.4%)        | 12<br>(17.1%)  | 9 (12.9%)           |                                           |

**p<0.05 = statistically significant**

Moderate and high tobacco abuse was highest among transsexuals 53 (43.8%), and 36(51.4%). Patterns of tobacco use varied by gender perception, with a significant association (p<0.05).

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**Table 44: Association of Alcohol Abuse with Gender perception (n = 410)**

| <b>ALCOHOLAB<br/>USE * Gender<br/>perception</b> | <b>TRANSGEND<br/>ER WOMEN</b> | <b>TRANSEXU<br/>AL</b> | <b>KOT<br/>HI</b> | <b>DOUBLEDECK<br/>ER</b> | <b>TEST<br/>VALU<br/>E (p<br/>Value)</b> |
|--------------------------------------------------|-------------------------------|------------------------|-------------------|--------------------------|------------------------------------------|
| <b>NIL</b>                                       | 49 (21.5%)                    | 85 (37.3%)             | 62<br>(27.2<br>%) | 32 (14.0%)               | 19.591<br>b<br>(0.003)                   |
| <b>1-5 TIMES</b>                                 | 23 (14.1%)                    | 85 (52.1%)             | 27<br>(16.6<br>%) | 28 (17.2%)               |                                          |
| <b>&gt;5 TIMES</b>                               | 4 (21.1%)                     | 13 (68.4%)             | 2<br>(10.5<br>%)  | 0 (0.0%)                 |                                          |

**b – Fisher’s Exact Value;  $p < 0.05$  = statistically significant**

High alcohol abuse (>5 times) was most prevalent among transsexuals 13 (68.4%), while kothis 2 (10.5%) had lower rate. There was a significant association between alcohol abuse and gender perception ( $p < 0.05$ ).

**Table - 45**

**Association of Frequency of Sexual Partners with Gender Perception : (n = 410)**

| <b>Frequenc<br/>y of<br/>Sexual<br/>Partners<br/>* Gender</b> | <b>TRANSGENDE<br/>R WOMEN</b> | <b>TRANSEXUA<br/>L</b> | <b>KOTH<br/>I</b>  | <b>DOUBLEDECKE<br/>R</b> | <b>CHI<br/>SQUAR<br/>E<br/>VALUE<br/>(p<br/>Value)</b> |
|---------------------------------------------------------------|-------------------------------|------------------------|--------------------|--------------------------|--------------------------------------------------------|
| <b>NONE</b>                                                   | 10 (14.7%)                    | 25 (36.8%)             | 23<br>(33.8%)<br>) | 10 (14.7%)               | 135.135<br>(0.0001)                                    |
| <b>1-5<br/>PEOPLE</b>                                         | 33 (16.8%)                    | 47 (24.0%)             | 67<br>(34.2%)<br>) | 49 (25.0%)               |                                                        |
| <b>&gt;5<br/>PEOPLE</b>                                       | 33 (22.6%)                    | 111 (76.0%)            | 1<br>(0.7%)        | 1 (0.7%)                 |                                                        |

**p<0.05 = statistically significant**

Of those with more than 5 partners, 111 (76.0%) were transexual, compared to 25 (36.8%) in the no partners group. This association between sexual partner frequency and gender perception was statistically significant ( $p < 0.05$ ).

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**Table -46****Association of Frequency of Anal Sex with Gender Perception:****(n = 410)**

| <b>Frequenc<br/>y of Anal<br/>Sex *<br/>Gender<br/>perceptio<br/>n</b> | <b>TRANSGENDE<br/>R WOMEN</b> | <b>TRANSEXUA<br/>L</b> | <b>KOTH<br/>I</b> | <b>DOUBLEDECKE<br/>R</b> | <b>CHI<br/>SQUAR<br/>E<br/>VALUE<br/>(p<br/>Value)</b> |
|------------------------------------------------------------------------|-------------------------------|------------------------|-------------------|--------------------------|--------------------------------------------------------|
| <b>NEVER</b>                                                           | 23 (14.1%)                    | 69 (42.3%)             | 46<br>(28.2%<br>) | 25 (15.3%)               | 20.170<br><br>(0.003)                                  |
| <b>1-5<br/>TIMES</b>                                                   | 39 (18.8%)                    | 92 (44.4%)             | 42<br>(20.3%<br>) | 34 (16.4%)               |                                                        |
| <b>&gt;5<br/>TIMES</b>                                                 | 14 (35.0%)                    | 22 (55.0%)             | 3<br>(7.5%)       | 1 (2.5%)                 |                                                        |

**p<0.05 = statistically significant**

Among those with more than 5 instances, 22 (55.0%) identified as transexual and 14 (35.0%) as transgender women. This association between anal sex count and gender perception was statistically significant (p < 0.05).

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**Table - 47****Association of Education with Begging (n = 410)**

| <b>Education * Begging</b> | <b>NO</b>  | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------|------------|------------|-------------------------------------------|
| <b>ILLITERATE</b>          | 15 (51.7%) | 14 (48.3%) | 40.190<br><br>(0.0001)                    |
| <b>PRIMARY SCHOOL</b>      | 36 (38.3%) | 58 (61.7%) |                                           |
| <b>MIDDLE SCHOOL</b>       | 77 (47.8%) | 84 (52.2%) |                                           |
| <b>HIGH SCHOOL</b>         | 52 (72.2%) | 20 (27.8%) |                                           |
| <b>PRE UNIV AND ABOVE</b>  | 45 (83.3%) | 9 (16.7%)  |                                           |

**p<0.05 = statistically significant**

Begging was seen in 58 (61.7%) of the primary school group and only 9 (16.7%) of the pre-university/above group. This association of education with begging was statistically significant ( $p < 0.05$ ).

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**Table - 48**

**Association of Occupation with Begging: (n = 410)**

| <b>Occupation * Begging</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-----------------------------|-------------|-------------|-------------------------------------------|
| <b>UNEMPLOYED</b>           | 18 (34.0%)  | 35 (66.0%)  | 10.754<br><br>(0.001)                     |
| <b>WORK FOR WAGES</b>       | 207 (58.0%) | 150 (42.0%) |                                           |

**p<0.05 = statistically significant**

Begging was reported by 35 (66.0%) unemployed participants compared to 150 (42.0%) employed. This difference was statistically significant ( $p < 0.05$ ).

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**Table 49: Association of Sex Work with Begging (n = 410)**

| <b>SEX WORK *</b><br><b>Begging</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE</b><br><b>VALUE</b><br><b>(p Value)</b> |
|-------------------------------------|-------------|-------------|-------------------------------------------------------|
| <b>NO</b>                           | 171 (81.8%) | 38 (18.2%)  | 124.95<br><br>(0.0001)                                |
| <b>YES</b>                          | 54 (26.9%)  | 147 (73.1%) |                                                       |

**p<0.05 = statistically significant**

Participants of those involved in sex work, 147 (73.1%) also did begging, while among non-sex workers only 38 (18.2%) were engaged in begging. This overlap between sex work and begging was highly significant (p<0.05).

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**Table 50: Association of Other Work with Begging (n = 410)**

| <b>OTHER WORK *</b><br><b>Begging</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE</b><br><b>VALUE</b><br><b>(p Value)</b> |
|---------------------------------------|-------------|-------------|-------------------------------------------------------|
| <b>NO</b>                             | 74 (29.2%)  | 179 (70.8%) | 175.26<br><br>(0.0001)                                |
| <b>YES</b>                            | 151 (96.2%) | 6 (3.8%)    |                                                       |

**p<0.05 = statistically significant**

Nearly all participants in other work were not engaged in begging (151; 96.2%), whereas 179 (70.8%) not in other work were involved in begging. This relationship between other work and begging was highly significant (p<0.05).

---

**Table 51: Association of Tobacco Abuse with Begging (n = 410)**

| <b>TOBACCO ABUSE</b><br><b>* Begging</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE</b><br><b>VALUE</b><br><b>(p Value)</b> |
|------------------------------------------|-------------|------------|-------------------------------------------------------|
| <b>Nil</b>                               | 126 (57.5%) | 93 (42.5%) | 4.316<br><br>(0.116)                                  |
| <b>1-5 times</b>                         | 57 (47.1%)  | 64 (52.9%) |                                                       |
| <b>&gt;5 times</b>                       | 42 (60.0%)  | 28 (40.0%) |                                                       |

**p<0.05 = statistically significant**

Moderate tobacco abuse was reported in 64 (52.9%) of those engaged in begging, versus 57 (47.1%) of those not; high abuse (category 2) was in 28 (40.0%) beggars. This association was not statistically significant (p>0.05).

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**Table 52: Association of Alcohol Abuse with Begging (n = 410)**

| <b>ALCOHOL ABUSE</b><br><b>* Begging</b> | <b>NO</b>   | <b>YES</b> | <b>CHI SQUARE</b><br><b>VALUE</b><br><b>(p Value)</b> |
|------------------------------------------|-------------|------------|-------------------------------------------------------|
| <b>NIL</b>                               | 136 (59.6%) | 92 (40.4%) | 4.742<br><br>(0.093)                                  |
| <b>1-5 TIMES</b>                         | 80 (49.1%)  | 83 (50.9%) |                                                       |
| <b>&gt;5 TIMES</b>                       | 9 (47.4%)   | 10 (52.6%) |                                                       |

**p<0.05 = statistically significant**

Among moderate abusers, 83 (50.9%) did collection work and among high abusers(>5 times) 10 (52.6%) were engaged in begging.. This was not a significant association (p>0.05).

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**Table - 53****Association of Frequency of Sexual Partners with Begging:****(n = 410)**

| <b>Frequency of Sexual Partners * Begging</b> | <b>NO</b>      | <b>YES</b>     | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-----------------------------------------------|----------------|----------------|-------------------------------------------|
| <b>NONE</b>                                   | 40<br>(58.8%)  | 28<br>(41.2%)  | 62.982<br><br>(0.0001)                    |
| <b>1-5 PEOPLE</b>                             | 142<br>(72.4%) | 54<br>(27.6%)  |                                           |
| <b>&gt;5 PEOPLE</b>                           | 43<br>(29.5%)  | 103<br>(70.5%) |                                           |

**p<0.05 = statistically significant**

Begging was highest among those with more than 5 partners at 103 (70.5%), and lowest among the 1–5 group at 54 (27.6%). This association between sexual partner frequency and begging was statistically significant ( $p < 0.05$ ).

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**Table - 54****Association of Frequency of Anal Sex with Begging: (n = 410)**

| <b>Frequency of Anal Sex * Begging</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------------|-------------|-------------|-------------------------------------------|
| <b>NEVER</b>                           | 106 (65.0%) | 57 (35.0%)  | 12.938<br><br>(0.002)                     |
| <b>1-5 TIMES</b>                       | 96 (46.4%)  | 111 (53.6%) |                                           |
| <b>&gt;5 TIMES</b>                     | 23 (57.5%)  | 17 (42.5%)  |                                           |

**p<0.05 = statistically significant**

Begging was most reported among the participants who had anal sex 1–5 times in the last month (111, 53.6%), with lower rates in the other groups; this association between frequency of anal sex and begging was statistically significant ( $p < 0.05$ ).

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**Table - 55****Association of Education with Sex Work: (n = 410)**

| <b>Education * Sex Work</b> | <b>NO</b>  | <b>YES</b> | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-----------------------------|------------|------------|-------------------------------------------|
| <b>ILLITERATE</b>           | 19 (65.5%) | 10 (34.5%) | 19.658<br><br>(0.001)                     |
| <b>PRIMARY SCHOOL</b>       | 37 (39.4%) | 57 (60.6%) |                                           |
| <b>MIDDLE SCHOOL</b>        | 72 (44.7%) | 89 (55.3%) |                                           |
| <b>HIGH SCHOOL</b>          | 44 (61.1%) | 28 (38.9%) |                                           |
| <b>PRE UNIV AND ABOVE</b>   | 37 (68.5%) | 17 (31.5%) |                                           |

**p<0.05 = statistically significant**

The largest proportion of participants engaged in sex work was among primary school-educated subjects, 57 (60.6%), versus 17 (31.5%) for pre-university and above. This association between education and sex work was statistically significant ( $p < 0.05$ ).

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**Table - 56****Association of Occupation with Sex Work: (n = 410)**

| <b>Occupation * Sex Work</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|------------------------------|-------------|-------------|-------------------------------------------|
| <b>UNEMPLOYED</b>            | 47 (88.7%)  | 6 (11.3%)   | 34.624<br><br>(0.0001)                    |
| <b>WORK FOR WAGES</b>        | 162 (45.4%) | 195 (54.6%) |                                           |

**p<0.05 = statistically significant**

Sex work was much more common among those working for wages (195, 54.6%) than unemployed (6, 11.3%). This association between occupation and sex work was statistically significant ( $p < 0.05$ ).

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**Table 57: Association of Other Work with Sex Work (n = 410)**

| <b>OTHER WORK *<br/>SEX WORK</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------|-------------|-------------|-------------------------------------------|
| <b>NO</b>                        | 56 (22.1%)  | 197 (77.9%) | 219.91<br><br>(0.0001)                    |
| <b>YES</b>                       | 153 (97.5%) | 4 (2.5%)    |                                           |

**p<0.05 = statistically significant**

Almost all those engaged in other work were not in sex work 153 (97.5%), while the majority not in other work participated in sex work 197 (77.9%). There was a highly significant association between other work and sex work (p<0.05).

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**Table 58: Association of Tobacco Abuse with Sex Work (n = 410)**

| <b>TOBACCO ABUSE<br/>* SEX WORK</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE (p Value)</b> |
|-------------------------------------|-------------|-------------|---------------------------------------|
| <b>Nil</b>                          | 109 (49.8%) | 110 (50.2%) | 1.286<br><br>(0.526)                  |
| <b>1-5 times</b>                    | 60 (49.6%)  | 61 (50.4%)  |                                       |
| <b>&gt;5 times</b>                  | 40 (57.1%)  | 30 (42.9%)  |                                       |

**p<0.05 = statistically significant**

Distribution of tobacco abuse among sex workers was 30 (42.9%) at high level, 61 (50.4%) moderate , and 110 (50.2%) no abuse, very similar to non-sex workers. No significant association was found between the both (p>0.05).

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**Table 59: Association of Alcohol Abuse with Sex Work (n = 410)**

| <b>ALCOHOL ABUSE<br/>* SEX WORK</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-------------------------------------|-------------|-------------|-------------------------------------------|
| <b>NIL</b>                          | 128 (56.1%) | 100 (43.9%) | 5.531<br><br>(0.063)                      |
| <b>1-5 TIMES</b>                    | 73 (44.8%)  | 90 (55.2%)  |                                           |
| <b>&gt;5 TIMES</b>                  | 8 (42.1%)   | 11 (57.9%)  |                                           |

**p<0.05 = statistically significant**

Participants engaged in sex work had slightly higher rates of alcohol use, with 11 (57.9%) drinking >5 times, compared to 8 (42.1%) non-sex workers, but this was not statistically significant (p>0.05).

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**Table - 60**

**Association of Frequency of Sexual Partners with Sex Work:**

**(n = 410)**

| <b>Frequency of Sexual Partners * Sex<br/>Work</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|----------------------------------------------------|-------------|-------------|-------------------------------------------|
| <b>NONE</b>                                        | 63 (92.6%)  | 5 (7.4%)    | 224.973<br><br>(0.0001)                   |
| <b>1-5 PEOPLE</b>                                  | 143 (73.0%) | 53 (27.0%)  |                                           |
| <b>&gt;5 PEOPLE</b>                                | 3 (2.1%)    | 143 (97.9%) |                                           |

**p<0.05 = statistically significant**

Among those with more than 5 partners, 143 (97.9%) engaged in sex work, compared to just 5 (7.4%) of those with no partners. This association between sexual partner frequency and sex work was statistically significant ( $p < 0.05$ ).

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**Table - 61****Association of Frequency of Anal Sex with Sex Work: (n = 410)**

| <b>Frequency of Anal Sex * Sex Work</b> | <b>NO</b>   | <b>YES</b>  | <b>CHI SQUARE<br/>VALUE<br/>(p Value)</b> |
|-----------------------------------------|-------------|-------------|-------------------------------------------|
| <b>NEVER</b>                            | 110 (67.5%) | 53 (32.5%)  | 33.852<br><br>(0.0001)                    |
| <b>1-5 TIMES</b>                        | 89 (43.0%)  | 118 (57.0%) |                                           |
| <b>&gt;5 TIMES</b>                      | 10 (25.0%)  | 30 (75.0%)  |                                           |

**p<0.05 = statistically significant**

Sex work was reported by 30 (75.0%) of those with >5 episodes of anal sex versus only 53 (32.5%) of those who never had anal sex. This association between anal sex frequency and sex work was statistically significant ( $p < 0.05$ ).

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**Table – 62:****Relation of Gender Perception with High Risk Behavior:****(n = 410)**

| Gender Perception | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F      | p Value |
|-------------------|-----|---------------------------|------------|----------------------------------|-------------|--------|---------|
|                   |     |                           |            | Lower Bound                      | Upper Bound |        |         |
| TRANSGENDER WOMEN | 76  | 7.2 $\pm$ 4.3             | 0.50       | 6.2209                           | 8.2001      | 23.726 | 0.0001  |
| TRANSEXUAL        | 183 | 7.2 $\pm$ 3.8             | 0.28       | 6.7121                           | 7.8124      |        |         |
| KOTHI             | 91  | 3.5 $\pm$ 3.1             | 0.33       | 2.8261                           | 4.1409      |        |         |
| DOUBLEDECKER      | 60  | 7.2 $\pm$ 3.7             | 0.48       | 6.2698                           | 8.1968      |        |         |

**ANOVA:  $p < 0.05$  = statistically significant**

Our study reports that among the study participants Kothi group has the lowest mean (3.48), significantly lower than other groups (TG: 7.21, Transsexual: 7.26, Double Decker: 7.23). Overall ANOVA shows that, High Risk behavior ( $F=23.726$ ,  $p < 0.05$ ) show statistically significant differences across gender groups. Post Hoc analysis with Bonferroni correction reveals that only Kothi differs significantly from all other groups ( $p < 0.05$ ), with lower high-risk behavior. Gender identity is strongly associated with high-risk behavior with Kothi individuals reported notably lower high-risk behavior than other groups.

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**Table – 63 :****Relation of Education Level with High Risk Behavior: (n = 410)**

| Education Level    | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F     | p Value |
|--------------------|-----|---------------------------|------------|----------------------------------|-------------|-------|---------|
|                    |     |                           |            | Lower Bound                      | Upper Bound |       |         |
| ILLITERATE         | 29  | 5.4 $\pm$ 5.1             | 0.95       | 3.497                            | 7.400       | 1.109 | 0.352   |
| PRIMARY SCHOOL     | 94  | 6.6 $\pm$ 3.6             | 0.37       | 5.953                            | 7.409       |       |         |
| MIDDLE SCHOOL      | 161 | 6.7 $\pm$ 4.3             | 0.34       | 6.064                            | 7.389       |       |         |
| HIGH SCHOOL        | 72  | 6.2 $\pm$ 3.6             | 0.42       | 5.340                            | 7.021       |       |         |
| PRE UNIV AND ABOVE | 54  | 5.8 $\pm$ 4.1             | 0.57       | 4.676                            | 6.953       |       |         |

**ANOVA:  $p < 0.05$  = statistically significant**

The above table shows that participants with middle school education had the highest mean high risk behavior score ( $M = 6.73$ ,  $SD = 4.26$ ), and those with pre-university and above education ( $M = 5.82$ ,  $SD = 4.17$ ) had lower means. ). These differences were not statistically significant ( $F = 1.109$ ;  $p > 0.05$ ). Post-hoc comparisons using Bonferroni's correction confirmed no significant pairwise differences between any education groups. This suggests that education level does not significantly influence high risk behavior scores in this population.

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**Table – 64:**

**Relation of Occupation with High Risk Behavior: (n = 410)**

| <b>OCCUPATION</b>         | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>P Value</b> |
|---------------------------|----------|----------------------------------|-------------------|----------|----------------|
| <b>UNEMPLOYED</b>         | 53       | 3.7 ± 4.5                        | 0.62              | -4.748   | 0.0001         |
| <b>WORK FOR<br/>WAGES</b> | 357      | 6.8 ± 3.8                        | 0.20              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

According to the above table, participants who were working for wages reported significantly higher HRB scores ( $M = 6.81$ ,  $SD = 3.82$ ) compared to those who were unemployed ( $M = 3.70$ ,  $SD = 4.54$ ). Independent samples t test reveals that this difference was statistically significant,  $t = -4.75$ ,  $p < 0.05$ . This suggests that being employed is associated with higher engagement in risk behaviors.

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**Table – 65:**

**Relation of Begging with High Risk Behavior: (n = 410)**

| <b>Begging</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>P Value</b> |
|----------------|----------|----------------------------------|-------------------|----------|----------------|
| <b>NO</b>      | 225      | 5.9 ± 4.2                        | 0.28              | -2.774   | 0.006          |
| <b>YES</b>     | 185      | 7.0 ± 3.8                        | 0.28              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

Individuals who engaged in begging had significantly higher HRB scores ( $M = 7.01$ ,  $SD = 3.78$ ) compared to those who did not ( $M = 5.92$ ,  $SD = 4.20$ ). Independent t test states that this difference was statistically significant,  $t = -2.77$ ,  $p < 0$ . This suggests that involvement in begging is associated with increased high-risk behaviors.

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**Table – 66:**

**Relation of Sex Work with High Risk Behavior: (n = 410)**

| <b>SEX WORK</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>p Value</b> |
|-----------------|----------|----------------------------------|-------------------|----------|----------------|
| <b>NO</b>       | 209      | 4.4 ± 3.9                        | 0.27              | -11.562  | 0.0001         |
| <b>YES</b>      | 201      | 8.5 ± 3.1                        | 0.21              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

It is evident from the above table that individuals involved in Sex work exhibited significantly higher HRB scores ( $M = 8.45$ ,  $SD = 3.08$ ) compared to those not involved in sex work ( $M = 4.45$ ,  $SD = 3.91$ ). On independent samples t test this difference was statistically significant,  $t = -11.56$ ,  $p < 0.05$ . This strongly suggests that engagement in sex work is linked to substantially higher risk behaviors.

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**Table – 67:**

**Relation of Other Work with High Risk Behavior: (n = 410)**

| <b>OTHER<br/>WORK</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>p Value</b> |
|-----------------------|----------|----------------------------------|-------------------|----------|----------------|
| <b>NO</b>             | 253      | 7.4 ± 3.9                        | 0.24              | 6.247    | 0.0001         |
| <b>YES</b>            | 157      | 4.9 ± 3.9                        | 0.31              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

Participants who were not involved in "Other work" had significantly higher HRB scores ( $M = 7.35$ ,  $SD = 3.86$ ) compared to those who were involved in "other work" ( $M = 4.89$ ,  $SD = 3.90$ ). On independent t test this difference was statistically significant,  $t = 6.23$ ,  $p < 0.05$ . This suggests that engagement in these "other" forms of work is associated with lower risk behaviors.

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**Table – 68:**

**Relation of HIV with High Risk Behavior: (n = 410)**

| <b>HIV Status</b> | <b>N</b> | <b>Mean ± Std. Deviation</b> | <b>Std. Error Mean</b> | <b>t</b>      | <b>p Value</b> |
|-------------------|----------|------------------------------|------------------------|---------------|----------------|
| <b>NO</b>         | 365      | 6.2 ± 4.1                    | 0.2                    | <b>-4.102</b> | <b>0.0001</b>  |
| <b>YES</b>        | 45       | 8. ± 3.1                     | 0.5                    |               |                |

**t – Test :  $p < 0.05$  = statistically significant**

The table shows that participants with a history of HIV had significantly higher HRB scores ( $M = 8.24$ ,  $SD = 3.05$ ) compared to those with no history of HIV ( $M = 6.18$ ,  $SD = 4.11$ ). On independent samples t test this difference was statistically significant,  $t = -4.65$ ,  $p < 0.05$ . This indicates an association between HIV-positive status and higher engagement in risk behaviors.

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**Table – 69:****Relation of Tobacco Abuse with High Risk Behavior: (n = 410)**

| Tobacco Abuse | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F     | p Value |
|---------------|-----|---------------------------|------------|----------------------------------|-------------|-------|---------|
|               |     |                           |            | Lower Bound                      | Upper Bound |       |         |
| Nil           | 219 | 5.8 $\pm$ 3.9             | 0.26       | 5.255                            | 6.306       | 6.034 | 0.003   |
| 1-5 times     | 121 | 7.3 $\pm$ 3.6             | 0.32       | 6.640                            | 7.923       |       |         |
| >5 times      | 70  | 6.9 $\pm$ 4.8             | 0.58       | 5.722                            | 8.021       |       |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

From the above table it is evident that participants using tobacco for 1-5 times had highest mean (7.28), followed by >5 times (6.87) and non-users (5.78). ANOVA Results shows that high risk behavior has significant overall difference with tobacco abuse groups ( $F=6.03$ ,  $p=0.003$ ). On Post Hoc Analysis there was a significant difference between Non-users and those using 1-5 times ( $p < 0.05$ ). No other pairwise differences was found

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**Table – 70:****Relation of Alcohol Abuse with High Risk Behavior: (n = 410)**

| Alcohol Abuse | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F     | p Value |
|---------------|-----|---------------------------|------------|----------------------------------|-------------|-------|---------|
|               |     |                           |            | Lower Bound                      | Upper Bound |       |         |
| NIL           | 228 | 5.7 $\pm$ 4.1             | 0.27       | 5.134                            | 6.199       | 9.381 | 0.0001  |
| 1-5 TIMES     | 163 | 7.4 $\pm$ 3.7             | 0.29       | 6.862                            | 7.997       |       |         |
| >5 TIMES      | 19  | 6.6 $\pm$ 5.1             | 1.16       | 4.146                            | 9.012       |       |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

Our study reports that participants using alcohol 1-5 times had highest mean (7.43), followed by >5 times (6.58) and non-users (5.67). ANOVA Results shows that Significant overall difference ( $F=9.38$ ,  $p < 0.05$ ) between the groups. On Post Hoc analysis Non-users and Participants with 1-5 times usage/ two weeks reported significant difference ( $p < 0.05$ ). No other pairs differ significantly. Alcohol abuse frequency has distinct impacts where moderate use (1-5 times/ two weeks) is associated with peak high-risk behavior.

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**Table – 71:**

**Relation of Sexual Partner Frequency with High Risk Behavior:**

**(n = 410)**

| <b>FREQUENCY OF<br/>SEXUAL<br/>PARTNERS</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error<br/>Mean</b> | <b>t</b> | <b>p Value</b> |
|---------------------------------------------|----------|----------------------------------|----------------------------|----------|----------------|
| <b>&lt; 5 PEOPLE</b>                        | 264      | 4.9 ± 3.9                        | 0.24                       | -13.105  | 0.0001         |
| <b>&gt;5 PEOPLE</b>                         | 146      | 9.1 ± 2.6                        | 0.21                       |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

According to the above table, participants reporting more than 5 sexual partners had significantly higher HRB scores ( $M = 9.14$ ,  $SD = 2.59$ ) compared to those reporting fewer than 5 sexual partners ( $M = 4.90$ ,  $SD = 3.93$ ). On independent t test this difference was statistically significant,  $t = -13.11$ ,  $p < 0.05$ . This indicates a strong positive association between a higher number of sexual partners and increased high-risk behaviors.

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**Table – 72:****Relation of Anal Sex count with High Risk Behavior: (n = 410)**

| Frequency of<br>Anal Sex | N   | Mean ± Std.<br>Deviation | Std.<br>Error | 95% Confidence<br>Interval for Mean |                | F       | p<br>Value |
|--------------------------|-----|--------------------------|---------------|-------------------------------------|----------------|---------|------------|
|                          |     |                          |               | Lower<br>Bound                      | Upper<br>Bound |         |            |
| NEVER                    | 163 | 3.2 ± 3.3                | 0.26          | 2.721                               | 3.745          | 182.239 | 0.0001     |
| 1-5 TIMES                | 207 | 7.9 ± 2.8                | 0.19          | 7.537                               | 8.299          |         |            |
| >5 TIMES                 | 40  | 11.6 ± 2.1               | 0.33          | 10.875                              | 12.225         |         |            |

**ANOVA ;  $p < 0.05$  = statistically significant**

The table shows that the High risk behavior scores increased markedly with increasing frequency of anal sex. Those who never practiced anal sex had the lowest mean score ( $M = 3.23$ ,  $SD = 3.31$ ), while participants reporting 1–5 instances had a much higher mean ( $M = 7.92$ ,  $SD = 2.78$ ), and those reporting more than 5 times had the highest mean score ( $M = 11.55$ ,  $SD = 2.11$ ). A one-way ANOVA revealed highly significant differences between groups ( $F = 182.239$ ,  $p < 0.05$ ). The increasing trend was statistically significant, indicating that more frequent engagement in anal sex is strongly associated with higher risk behaviors. Post-hoc analysis with Bonferroni's correction revealed significant differences between all three frequency groups ( $p < 0.05$ ), confirming a clear stepwise increase in risk behavior with increased frequency of anal sex.

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**Table – 73:****Relation of Depression Disorder with High Risk Behavior: (n = 410)**

| Depression Disorder              | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F      | p Value |
|----------------------------------|-----|---------------------------|------------|----------------------------------|-------------|--------|---------|
|                                  |     |                           |            | Lower Bound                      | Upper Bound |        |         |
| <b>NO DEPRESSIVE DISORDER</b>    | 274 | 5.9 $\pm$ 4.0             | 0.24       | 5.486                            | 6.448       | F=6.12 | p=0.002 |
| <b>OTHER DEPRESSIVE DISORDER</b> | 66  | 7.8 $\pm$ 3.6             | 0.45       | 6.927                            | 8.709       |        |         |
| <b>MAJOR DEPRESSIVE DISORDER</b> | 70  | 6.8 $\pm$ 4.2             | 0.49       | 5.822                            | 7.806       |        |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

The present study states that highest risk is observed among Other depressive disorder (Mean = 7.82), followed by major depressive disorder (6.81). Lowest risk is seen in No depressive disorder (5.97). It shows that the Depressive disorders are associated with higher risk behaviors. One way ANOVA results shows a Significant overall difference (F=6.12,  $p=0.002$ ) observed between the groups. On Post Hoc analysis the participants with No disorder vs. Other Depressive disorder had significant difference ( $p < 0.05$ ). No other pairs differ significantly. Depressive disorders are strongly linked to High-risk behavior.

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**Table – 74:****Relation of Gender Perception with Victimization:****(n = 410)**

| <b>Gender Perception</b> | <b>N</b> | <b>Mean ± Std. Deviation</b> | <b>Std. Error</b> | <b>95% Confidence Interval for Mean</b> |                    | <b>F</b> | <b>p Value</b> |
|--------------------------|----------|------------------------------|-------------------|-----------------------------------------|--------------------|----------|----------------|
|                          |          |                              |                   | <b>Lower Bound</b>                      | <b>Upper Bound</b> |          |                |
| <b>TRANSGENDER WOMEN</b> | 76       | 24.8 ± 7.2                   | 0.83              | 23.108                                  | 26.418             | 40.606   | 0.0001         |
| <b>TRANSEXUAL</b>        | 183      | 25.1 ± 7.4                   | 0.55              | 23.986                                  | 26.157             |          |                |
| <b>KOTHI</b>             | 91       | 17.8 ± 8.4                   | 0.88              | 16.072                                  | 19.554             |          |                |
| <b>DOUBLEDECKER</b>      | 60       | 15.3 ± 5.5                   | 0.71              | 13.855                                  | 16.678             |          |                |

**ANOVA ; p<0.05 = statistically significant**

Data from the above table states that Kothi (17.81) and Double Decker (15.27) show lower victimization than Transgender Women (24.76) and Transsexual (25.07). On doing One way ANOVA Victimization (F=40.606, p<0.05) show statistically significant differences across gender groups. On Post Hoc analysis (Bonferroni) TG and Transsexual have significantly higher victimization than Kothi (p<0.05) and Double Decker (p<0.05). Gender identity is strongly associated with victimization. TG and Transsexual individuals experience higher victimization compared to Kothi and Double Decker.

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**Table – 75:****Relation of Education with Victimization:****(n = 410)**

| Education          | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F     | p Value |
|--------------------|-----|---------------------------|------------|----------------------------------|-------------|-------|---------|
|                    |     |                           |            | Lower Bound                      | Upper Bound |       |         |
| ILLITERATE         | 29  | 25.2 $\pm$ 8.4            | 1.57       | 21.998                           | 28.416      | 2.198 | 0.069   |
| PRIMARY SCHOOL     | 94  | 21.9 $\pm$ 8.3            | 0.85       | 20.188                           | 23.578      |       |         |
| MIDDLE SCHOOL      | 161 | 22.5 $\pm$ 8.1            | 0.64       | 21.285                           | 23.795      |       |         |
| HIGH SCHOOL        | 72  | 20.5 $\pm$ 8.7            | 1.02       | 18.466                           | 22.534      |       |         |
| PRE UNIV AND ABOVE | 54  | 20.6 $\pm$ 8.7            | 1.18       | 18.260                           | 22.999      |       |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

The above table shows that Illiterate participants reported the highest victimization scores ( $M = 25.21$ ,  $SD = 8.44$ ), while those with high school ( $M = 20.50$ ,  $SD = 8.66$ ) and pre-university and above education ( $M = 20.63$ ,  $SD = 8.68$ ) reported lower scores. On doing one way ANOVA there was no significant differences found in victimization scores across education levels ( $F = 2.198$ ,  $p > 0.05$ ). Post-hoc tests revealed no significant differences across the groups.

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**Table – 76:**

**Relation of Occupation with Victimization:**

**(n = 410)**

| <b>OCCUPATION</b>         | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>P Value</b> |
|---------------------------|----------|----------------------------------|-------------------|----------|----------------|
| <b>UNEMPLOYED</b>         | 53       | 25.7 ± 7.3                       | 1.01              | 3.872    | 0.0001         |
| <b>WORK FOR<br/>WAGES</b> | 357      | 21.4 ± 8.4                       | 0.44              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

Unemployed participants reported significantly higher victimization scores ( $M = 25.68$ ,  $SD = 7.33$ ) compared to those working for wages ( $M = 21.42$ ,  $SD = 8.39$ ). Independent samples t test reveals that this difference was statistically significant,  $t = 3.87$ ,  $p < 0.05$ . This indicates that unemployment is linked to a greater experience of victimization.

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**Table – 77:**

**Relation of Collection Work with Victimization: (n = 410)**

| <b>Begging</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>P Value</b> |
|----------------|----------|----------------------------------|-------------------|----------|----------------|
| <b>NO</b>      | 225      | 19.9 ± 8.9                       | 0.59              | -5.767   | 0.0001         |
| <b>YES</b>     | 185      | 24.5 ± 7.0                       | 0.52              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

Participants who engaged in begging reported significantly higher victimization scores ( $M = 24.45$ ,  $SD = 7.00$ ) compared to those not involved in begging ( $M = 19.93$ ,  $SD = 8.86$ ). On independent t test this difference was statistically significant,  $t = -5.77$ ,  $p < 0.05$ . This finding indicates a strong association between begging and higher levels of victimization.

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**Table – 78:**

**Relation of Sex Work with Victimization: (n = 410)**

| <b>SEX WORK</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error</b> | <b>t</b>      | <b>p Value</b> |
|-----------------|----------|----------------------------------|-------------------|---------------|----------------|
| <b>NO</b>       | 209      | 19.4 ± 8.5                       | 0.6               | <b>-6.670</b> | <b>0.0001</b>  |
| <b>YES</b>      | 201      | 24.6 ± 7.4                       | 0.52              |               |                |

**t – Test :  $p < 0.05$  = statistically significant**

It is evident from the above table that participants involved in sex work reported significantly higher victimization scores ( $M = 24.64$ ,  $SD = 7.41$ ) compared to those not involved ( $M = 19.40$ ,  $SD = 8.46$ ). On independent t test this difference was statistically significant,  $t = -6.67$ ,  $p < 0.05$ . This indicates that sex work is associated with a significantly greater experience of victimization.

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**Table – 79:**

**Relation of Other Work with Victimization: (n = 410)**

| <b>OTHER<br/>WORK</b> | <b>N</b> | <b>Mean ±<br/>Std.Deviation</b> | <b>Std. Error</b> | <b>t</b> | <b>p Value</b> |
|-----------------------|----------|---------------------------------|-------------------|----------|----------------|
| <b>NO</b>             | 253      | 24.7 ± 7.6                      | 0.48              | 9.345    | 0.0001         |
| <b>YES</b>            | 157      | 17.5 ± 7.7                      | 0.61              |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

Above table states that Individuals not involved in "other work" reported significantly higher victimization scores ( $M = 24.74$ ,  $SD = 7.58$ ) compared to those involved in "other work" ( $M = 17.51$ ,  $SD = 7.66$ ). On independent t test this difference was statistically significant,  $t = 9.34$ ,  $p < 0.05$ . This finding implies that engagement in "other work" is associated with lower levels of victimization.

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**Table – 80:**

**Relation of HIV with Victimization: (n = 410)**

| <b>HIV<br/>Status</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error<br/>Mean</b> | <b>t</b> | <b>p Value</b> |
|-----------------------|----------|----------------------------------|----------------------------|----------|----------------|
| <b>NO</b>             | 365      | 20.5 ± 7.6                       | 0.39                       | -22.602  | 0.0001         |
| <b>YES</b>            | 45       | 34.1 ± 3.0                       | 0.45                       |          |                |

**t – Test :  $p < 0.05$  = statistically significant**

From the above table it is evident that individuals with a history of HIV reported drastically higher victimization scores ( $M = 34.09$ ,  $SD = 3.04$ ) compared to those with no history of HIV ( $M = 20.47$ ,  $SD = 7.57$ ). Independent t test demonstrates that this difference was statistically significant,  $t = -22.60$ ,  $p < 0.05$ . This finding strongly suggests that an HIV-positive status is linked to substantially higher levels of victimization.

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**Table – 81:****Relation of Tobacco Abuse with Victimization: (n = 410)**

| Tobacco Abuse  | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F      | p Value |
|----------------|-----|---------------------------|------------|----------------------------------|-------------|--------|---------|
|                |     |                           |            | Lower Bound                      | Upper Bound |        |         |
| No abuse       | 219 | 22.4 $\pm$ 8.3            | 0.56       | 21.279                           | 23.497      | 17.543 | 0.0001  |
| 1-5 times/week | 121 | 18.9 $\pm$ 6.6            | 0.60       | 17.716                           | 20.103      |        |         |
| >5 times/week  | 70  | 25.9 $\pm$ 9.3            | 1.11       | 23.717                           | 28.169      |        |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

Our study reported that Heavy Tobacco users with >5 times/ two weeks show highest victimization(25.94). While Moderate users with 1-5 times/week usage shows the lowest (18.91). On using One Way ANOVA there was strong overall difference ( $F=17.54$ ,  $p < 0.05$ ) observed between the groups. On Post Hoc analysis Heavy Tobacco users differ from both Non-users and Moderate users ( $p < 0.05$ ). Also Moderate users report lower victimization than non-users ( $p < 0.05$ ).

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**Table – 82:****Relation of Alcohol Abuse with Victimization: (n = 410)**

| Alcohol Abuse | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F     | p Value |
|---------------|-----|---------------------------|------------|----------------------------------|-------------|-------|---------|
|               |     |                           |            | Lower Bound                      | Upper Bound |       |         |
| NIL           | 228 | 21.3 $\pm$ 8.1            | 0.54       | 20.211                           | 22.325      | 6.585 | 0.002   |
| 1-5 TIMES     | 163 | 22.2 $\pm$ 8.5            | 0.67       | 20.885                           | 23.520      |       |         |
| >5 TIMES      | 19  | 28.4 $\pm$ 7.9            | 1.83       | 24.519                           | 32.218      |       |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

From the above table it is evident that Heavy alcohol usage >5 times had dramatically higher mean of victimization (28.37) vs. 1-5 times usage (22.20) and non-users (21.27). Heavy alcohol use is strongly linked to victimization. One Way ANOVA shows significant overall difference ( $F=6.59$ ,  $p < 0.05$ ) between the groups. On Post Hoc analysis Heavy users differ from both Non-users and Moderate users ( $p < 0.05$ ). No other differences were significant. Heavy alcohol use (>5 times) is linked to severe victimization, suggesting heightened vulnerability (e.g., impaired judgment, targeting).

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**Table – 83:**

**Relation of Frequency of Sexual Partners with Victimization:**

**(n = 410)**

| <b>FREQUENCY OF<br/>SEXUAL<br/>PARTNERS</b> | <b>N</b> | <b>Mean ±<br/>Std. Deviation</b> | <b>Std. Error<br/>Mean</b> | <b>t</b>      | <b>p Value</b> |
|---------------------------------------------|----------|----------------------------------|----------------------------|---------------|----------------|
| <b>&lt; 5 PEOPLE</b>                        | 264      | 20.9 ± 9.0                       | 0.55                       | <b>-3.589</b> | <b>0.0001</b>  |
| <b>&gt;5 PEOPLE</b>                         | 146      | 23.8 ± 6.8                       | 0.56                       |               |                |

**ANOVA ;  $p < 0.05$  = statistically significant**

Independent samples t test reveals that individuals reporting more than 5 sexual partners had significantly higher victimization scores ( $M = 23.79$ ,  $SD = 6.76$ ) compared to those reporting fewer than 5 sexual partners ( $M = 20.96$ ,  $SD = 9.00$ ). This difference was statistically significant,  $t = -3.59$ ,  $p < 0.05$ . This suggests that having a larger number of sexual partners is associated with a greater experience of victimization.

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**Table – 84:****Relation of Frequency of Anal Sex with Victimization:****(n = 410)**

| Frequency of Anal Sex | N   | Mean ± Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F      | p Value |
|-----------------------|-----|-----------------------|------------|----------------------------------|-------------|--------|---------|
|                       |     |                       |            | Lower Bound                      | Upper Bound |        |         |
| NEVER                 | 163 | 20.3 ± 8.3            | 0.65       | 19.005                           | 21.571      | 19.141 | 0.0001  |
| 1-5 TIMES             | 207 | 21.9 ± 8.1            | 0.56       | 20.819                           | 23.026      |        |         |
| >5 TIMES              | 40  | 29.1 ± 6.6            | 1.05       | 26.926                           | 31.174      |        |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

Participants who never engaged in anal sex had a mean score of 20.29 (SD = 8.30), those reporting 1–5 times had a slightly higher mean of 21.92 (SD = 8.05), while individuals reporting more than 5 times had substantially higher victimization scores (M = 29.05, SD = 6.64). Overall ANOVA shows that Victimization scores increased significantly with frequency of anal sex ( $F = 19.141$ ,  $p < 0.05$ ). Post-hoc comparisons using Bonferroni's correction showed that the group reporting >5 times had significantly higher victimization scores than other two groups ( $p < 0.05$ ).

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**Table – 85:****Relation of Depressive Disorder with Victimization:****(n = 410)**

| Depression Disorder              | N   | Mean $\pm$ Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | F      | p Value |
|----------------------------------|-----|---------------------------|------------|----------------------------------|-------------|--------|---------|
|                                  |     |                           |            | Lower Bound                      | Upper Bound |        |         |
| <b>NO DEPRESSIVE DISORDER</b>    | 274 | 19.4 $\pm$ 7.1            | 0.43       | 18.547                           | 20.227      | 69.121 | 0.0001  |
| <b>OTHER DEPRESSIVE DISORDER</b> | 66  | 23.5 $\pm$ 8.1            | 0.99       | 21.469                           | 25.441      |        |         |
| <b>MAJOR DEPRESSIVE DISORDER</b> | 70  | 30.7 $\pm$ 7.2            | 0.86       | 28.957                           | 32.385      |        |         |

**ANOVA ;  $p < 0.05$  = statistically significant**

Our study reported Highest victimization among Major depressive disorder (Mean = 30.67), followed by other depressive disorder (23.45) and Lowest victimization among No depressive disorder (19.39). Major depressive disorder shows a high magnitude of increase in victimization (~11 points higher than no disorder). One Way ANOVA reported extremely significant overall difference ( $F=69.12$ ,  $p < 0.001$ ) between the groups. Post Hoc analysis reported all pairwise comparisons to be statistically significant ( $p < 0.05$ ). Depressive disorders are strongly linked to Victimization.

**Table – 86:**

**Correlation Analysis of Factors Affecting Psychosocial Health Conditions: (n = 410)**

| <b>Factors</b>                                               |                        | <b>DEPRESSION</b>   | <b>HIGH RISK<br/>BEHAVIOR</b> | <b>VICTIMIZATION</b> | <b>ALCOHOL<br/>ABUSE</b> |
|--------------------------------------------------------------|------------------------|---------------------|-------------------------------|----------------------|--------------------------|
| <b>DEPRESSION</b>                                            | Pearson<br>Correlation | 1                   | 0.123 <sup>*</sup>            | 0.611 <sup>**</sup>  | 0.166 <sup>**</sup>      |
|                                                              | p Value                |                     | 0.013                         | 0.0001               | 0.001                    |
| <b>HIGH RISK<br/>BEHAVIOR</b>                                | Pearson<br>Correlation | 0.123 <sup>*</sup>  | 1                             | 0.241 <sup>**</sup>  | 0.178 <sup>**</sup>      |
|                                                              | p Value                | 0.013               |                               | 0.0001               | 0.0001                   |
| <b>VICTIMIZATION</b>                                         | Pearson<br>Correlation | 0.611 <sup>**</sup> | 0.241 <sup>**</sup>           | 1                    | 0.140 <sup>**</sup>      |
|                                                              | p Value                | 0.0001              | 0.0001                        |                      | 0.004                    |
| <b>ALCOHOL<br/>ABUSE</b>                                     | Pearson<br>Correlation | 0.166 <sup>**</sup> | 0.178 <sup>**</sup>           | 0.140 <sup>**</sup>  | 1                        |
|                                                              | p Value                | 0.001               | 0.0001                        | 0.004                |                          |
| <b>N</b>                                                     |                        | 410                 | 410                           | 410                  | 410                      |
| *. Correlation is significant at the 0.05 level (2-tailed).  |                        |                     |                               |                      |                          |
| **. Correlation is significant at the 0.01 level (2-tailed). |                        |                     |                               |                      |                          |

**Correlation ;  $p < 0.05$  = statistically significant**

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Correlation analysis revealed a strong positive correlation between victimization and depression (  $r = 0.61$ ,  $p < 0.001$  ), suggesting that individuals experiencing victimization are at heightened risk for depressive symptoms. High-risk behavior showed moderate correlations with both victimization (  $r = 0.24$ ,  $p < 0.001$  ) and alcohol abuse (  $r = 0.18$ ,  $p < 0.001$  ) which shows that victimization is linked to increased engagement in high-risk behaviors (e.g., unsafe sex) and alcohol (substance) use, possibly as a coping mechanism. High risk behavior has weak Positive Correlation with depression (  $r = 0.123$ ,  $p = 0.013$  ) which shows that depression has a mild association with high-risk behavior. Alcohol abuse is moderately linked to all three variables, alcohol abuse with Depression: (  $r = 0.166$ ,  $p = 0.001$  ), alcohol abuse with HRB: (  $r = 0.178$ ,  $p < 0.001$  ), alcohol abuse with victimization: (  $r = 0.140$ ,  $p = 0.004$  ) with the strongest tie to high-risk behavior. This supports the idea that substance use often co-occurs with risky behaviors and psychological distress.

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**Table – 87:**

**Binary Logistic Regression Analysis Factors Influencing HIV Acquisition Risk : (n = 410)**

| <b>Factors</b>             | <b>B (Beta Coefficient)</b> | <b>Odds Ratio [Exp(B)]</b> | <b>95% CI for Exp(B)</b> | <b>p-value</b> |
|----------------------------|-----------------------------|----------------------------|--------------------------|----------------|
| <b>Depression</b>          | 0.126                       | 1.134                      | 1.048–1.227              | 0.002*         |
| <b>High-Risk Behaviour</b> | 0.110                       | 1.116                      | 1.004–1.240              | 0.042*         |
| <b>Victimization</b>       | 0.192                       | 1.211                      | 1.130–1.298              | <0.001*        |
| <b>Constant</b>            | -9.435                      | 0.000                      | —                        | <0.001*        |

**Regression ;  $p < 0.05$  = statistically significant**

On doing Binary Logistic regression the odds of acquiring HIV increased with higher depression scores, high risk behavior scores and victimization scores. Among the participants, each 1-unit increase in depression raises the HIV odds by 1.134 times ( $p = 0.002$ ) adjusting for high risk behavior and victimization. Participants with High Risk Behaviour are at 1.116 times the odds of getting HIV ( $p = 0.042$ ) adjusted for depression and victimization. Victimization is the strongest predictor - each 1-unit increase raises HIV odds by 1.211times ( $p < 0.001$ ).

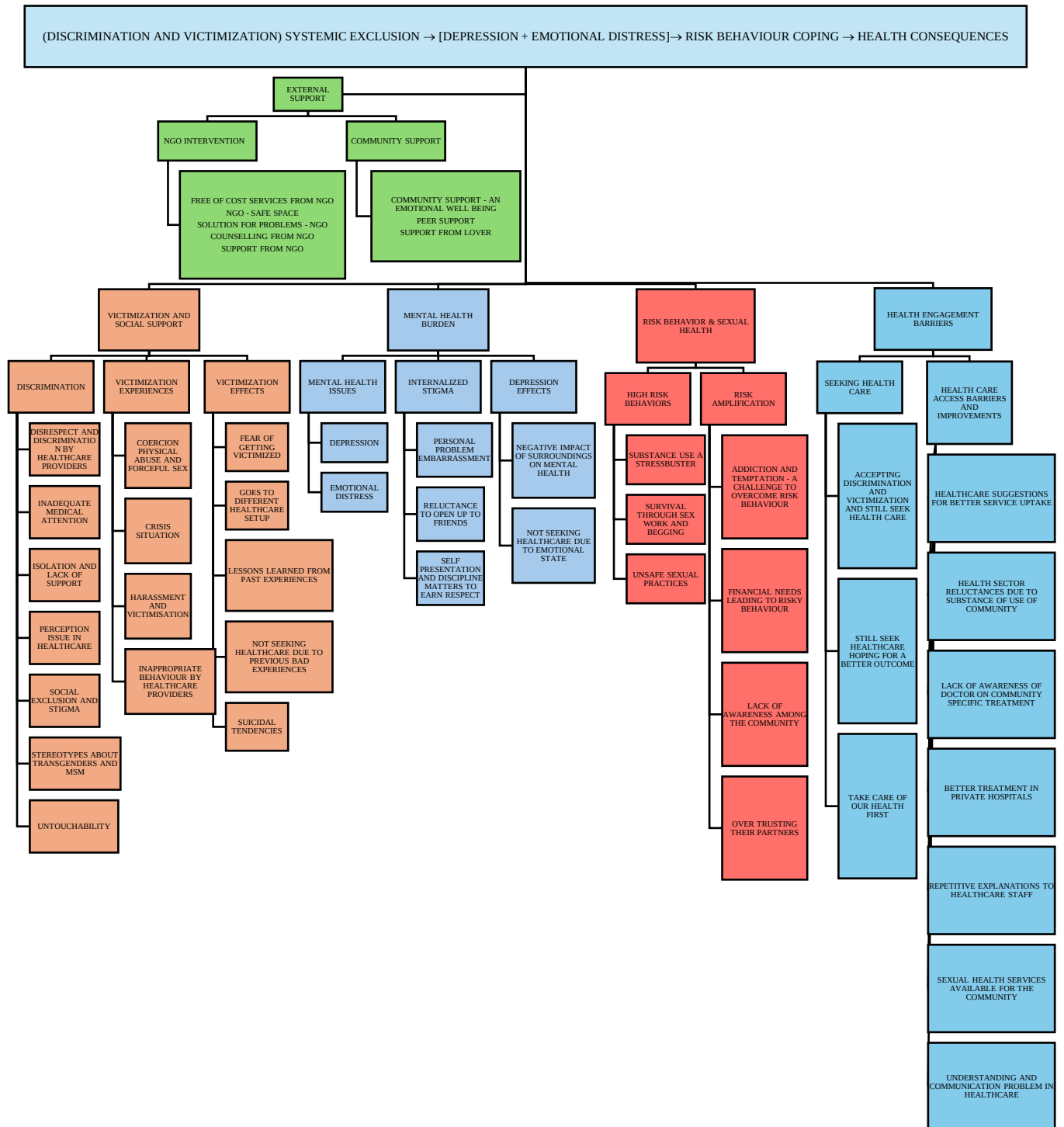
Victimization is the strongest predictor of HIV status, likely due to link to trauma, risky coping behaviors (e.g., substance use, unprotected sex), sexual coercion. Depression and HRB are significant but weaker predictors.

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## **QUALITATIVE ANALYSIS**

On three days, Focus Group Discussions (FGD) were held for three groups of ten participants each. Interview guide questions were used to evaluate such domains as Mental health & Depression, High Risk Behaviours, Discrimination and Victimization. The objectives of the study were presented and all the participants provided Informed consent. There was the ice-breaking session where by a video clip was demonstrated. After that their views of the video were discussed. The procedure of FGD rules was explained and session was started. The recorded audio was then transcribed into data. Thematic Analysis was done. The transcribed data was analysed and meaningful quotations were identified. As a Learn as you go approach, Inductive coding was done. Further the obtained codes are clubbed under broader Category. Some categories kept as a provisional start list prior to the data collection were applied as an approach of Deductive coding. The obtained categories are later framed under four themes. The themes were further reframed to form a single theory.

**Fig – 7 : THEMATIC ANALYSIS:**



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Fig – 8 :Word Cloud of Highly Grounded Codes:



**Key Code Groundedness:**

The most grounded individual codes are:

1. **Disrespect and Discrimination by Healthcare Providers** (Gr=41)
2. **Support from NGOs** (Gr=43)
3. **Harassment and Victimization** (Gr=19)
4. **Emotional Distress** (Gr=22)
5. **Depression** (Gr=19)
6. **Inadequate Medical Attention** (Gr=17)
7. **Not seeking health care due to emotional state** (Gr=17)
8. **Stereotypes about Transgenders and MSM** (Gr=15)
9. **Crisis Situations** (Gr=15)
10. **Perception Issues in Healthcare** (Gr=14)

This groundedness analysis reveals that healthcare provider attitudes and NGO support are the most frequently referenced experiences in the study participants' narratives, indicating their central importance in the lived experiences documented.

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## Significant Co-occurrence Relationships among the codes:

**Fig – 9:**

### Healthcare Discrimination and Mental Health:

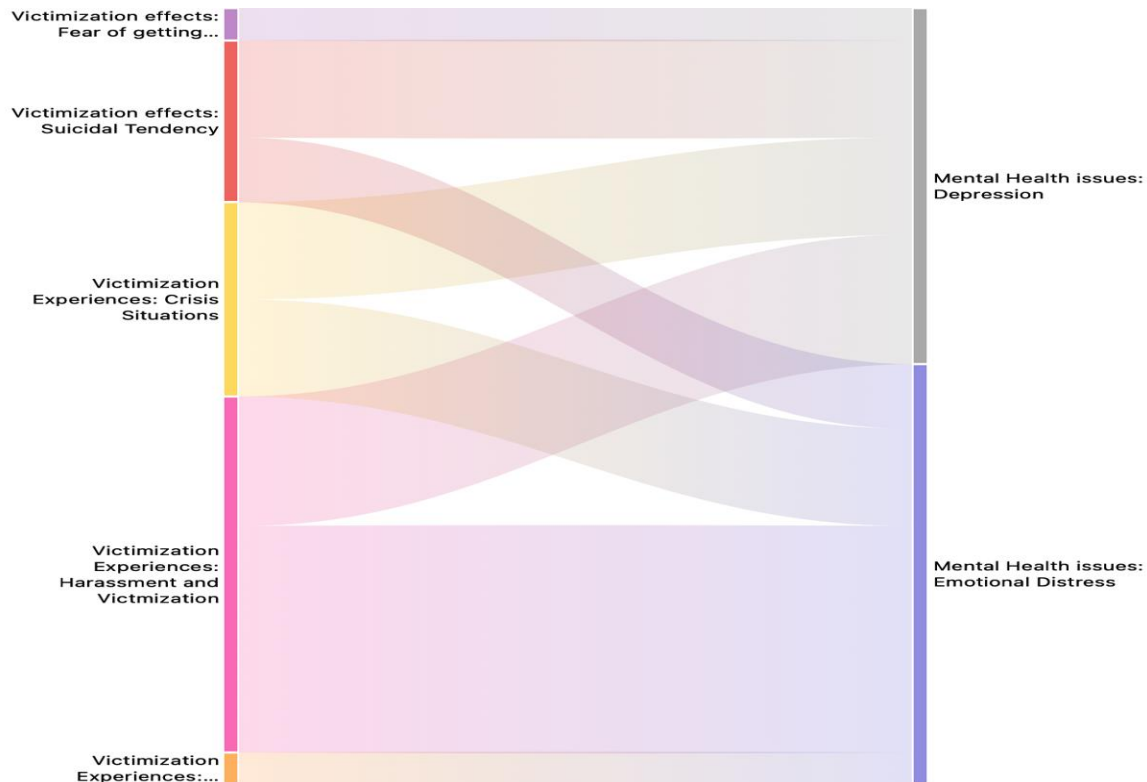


The Sankey diagrams reveal strong connections from "Disrespect and Discrimination by Healthcare Providers" to "Mental Health Issues: Depression" (14 co-occurrences) and "Mental Health Issues: Emotional Distress" (12 co-occurrences). This represents one of the strongest pathways in the data, confirming healthcare discrimination as a primary driver of mental health challenges.

As visualized in the Sankey diagram, the thickness of the flow from discrimination nodes to mental health outcomes demonstrates the substantial impact of discriminatory experiences on psychological wellbeing.

**Fig – 10:**

**Crisis and Victimization to Mental Health:**



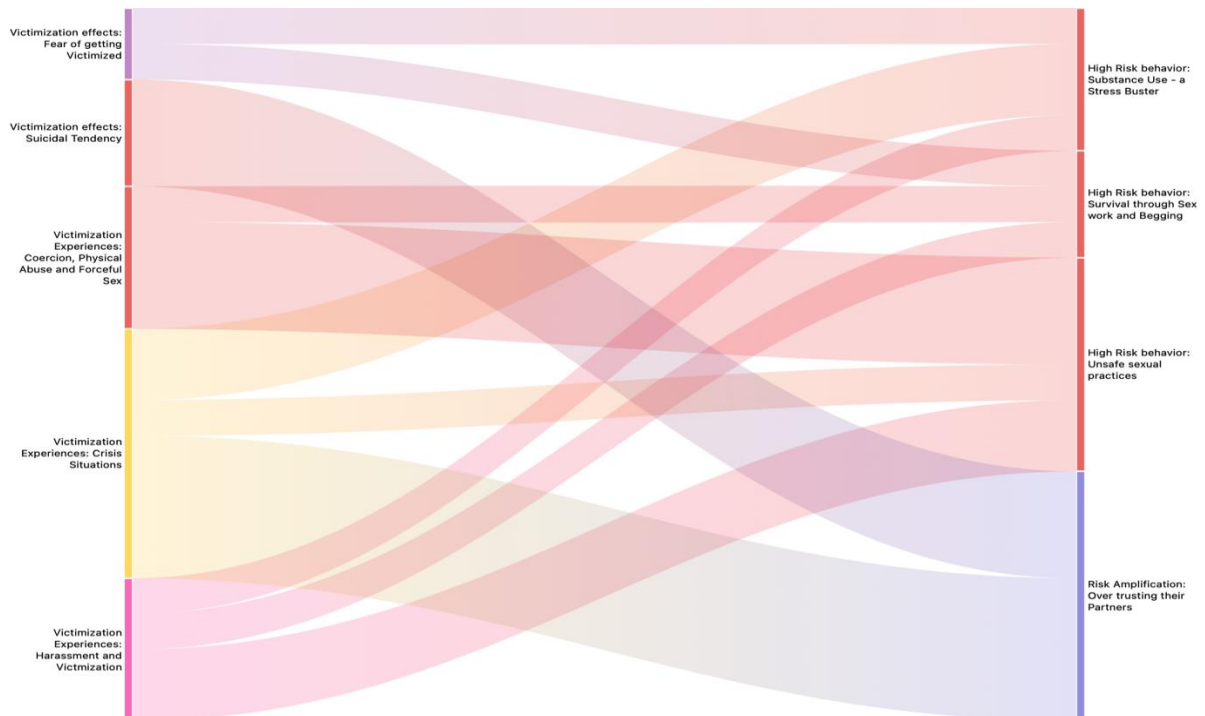
This Sankey diagram shows:

- Strong flows from "Victimization effects: Suicidal Tendency" to "Depression"
- Significant pathways from "Crisis Situations" to both "Depression" and "Emotional Distress"
- A notable connection between "Harassment & Victimization" and "Emotional Distress"

This visualization provides compelling evidence that traumatic victimization experiences directly precipitate serious mental health consequences, with crisis situations particularly linked to depression.

**Fig – 11:**

**Victimization Pathways to Risk Behaviors:**



The above Sankey diagram clearly illustrates how different forms of victimization connect to high-risk behaviors :

- "Victimization Experiences: Coercion, Physical Abuse and Forceful Sex" flows strongly to "Survival through Sex work and Begging" (4 co-occurrences).
- "Crisis Situations" connects prominently to "Substance Use - a Stress Buster" (3 co-occurrences).
- "Harassment and Victimization" links to "Unsafe sexual practices" (3 co-occurrences).

This visualization supports the finding that victimization experiences drive maladaptive high-risk behaviors as coping mechanisms rather than as individual moral failings.

**Fig – 12:**

**Depression Effects on High risk Behaviors:**



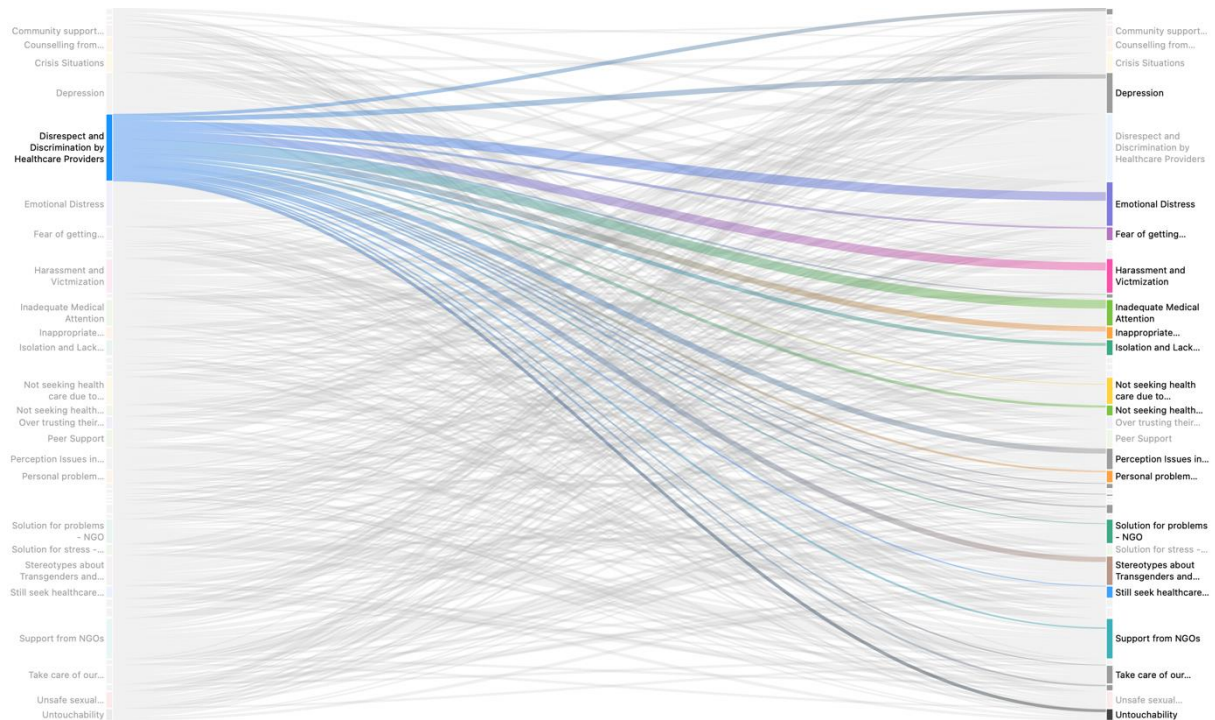
The Sankey diagram illustrates the critical pathway from the effects of depression to High risk behaviors;

- "Substance Use - a Stress Buster" has a substantial connection to "Depression effects: Negative Impact of Surroundings on Mental Health"
- Both high-risk behavior codes flow prominently to "Depression effects: Not seeking health care due to emotional state"

This demonstrates how mental health issues resulting from discrimination and victimization directly contribute to healthcare avoidance, creating a reinforcing cycle of poor health outcomes by incorporating high risk behaviors.

**Fig – 13 :**

## Complex System Visualization

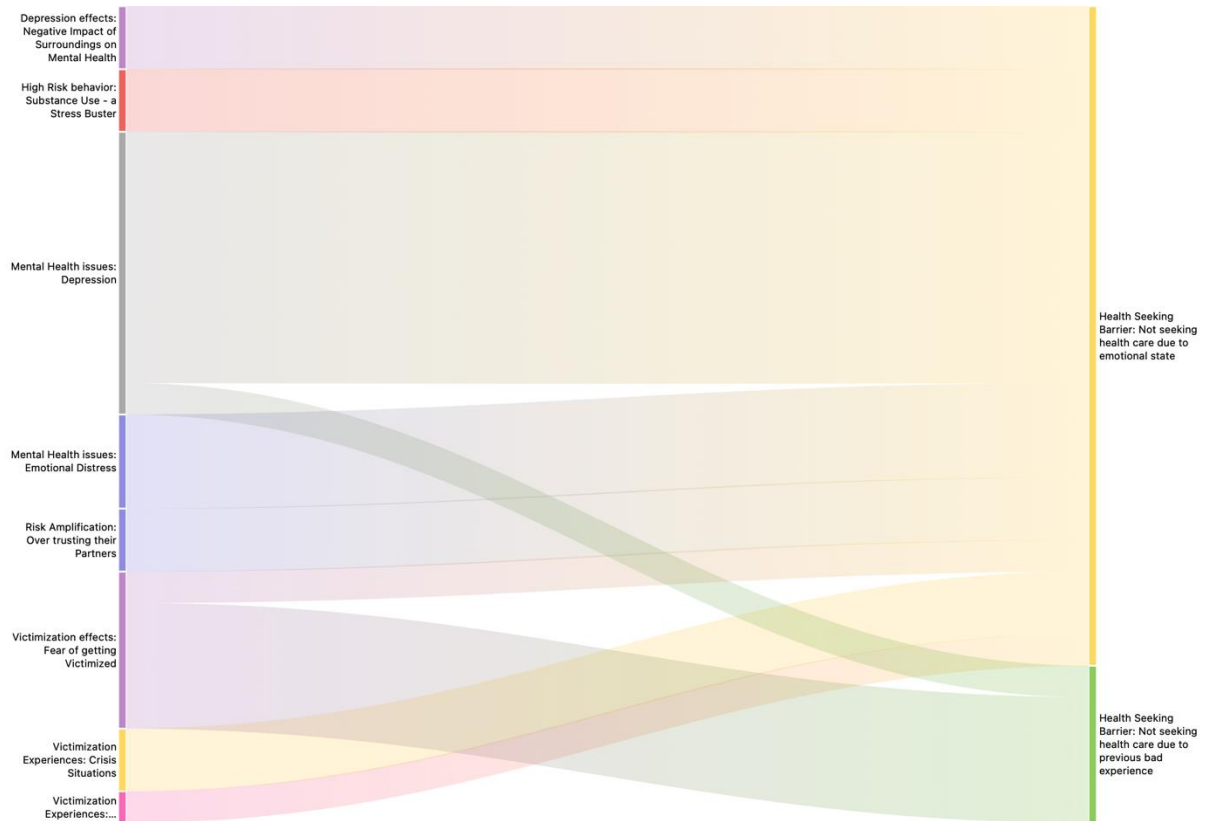


The above Sankey diagram presents a comprehensive view of the entire system, showing how discrimination and victimization form the foundation of a complex cascade of effects leading ultimately to health-seeking barriers.

The intricate flows between nodes in this visualization reinforce the syndemic nature of these interconnected issues that they don't exist in isolation but rather form a complex, mutually reinforcing system of health disparities.

**Fig – 14 :**

**Pathways to Health Seeking Barriers:**



This Sankey diagram provides a compelling visualization of how victimization experiences, mental health issues, high-risk behaviors, and depression effects collectively contribute to health seeking barriers among marginalized populations.

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## **Mental Health to Health Seeking Barriers:**

The diagram shows a prominent flow from **Mental Health Issues: Depression** to **Health Seeking Barrier: Not seeking health care due to emotional state**, representing the strongest pathway (9 co-occurrences). This thick flow illustrates how depression directly impedes healthcare access by creating emotional barriers to seeking help.

## **Emotional Distress Contribution**

**Mental Health Issues: Emotional Distress** also shows substantial connection to health seeking barriers (3 co-occurrences), demonstrating how psychological distress beyond clinical depression similarly contributes to healthcare avoidance.

## **Victimization Effects**

- **Victimization Effects: Fear of getting Victimized** creates a direct flow to health seeking barriers (2 co-occurrences), illustrating how anticipated victimization deters healthcare seeking.
- **Victimization Experiences: Crisis Situations** shows connections to both mental health nodes and directly to **Health Seeking Barrier: Not seeking health care due to previous bad experience** (3 co-occurrences).

## **Risk Amplification**

**Risk Amplification: Over trusting their Partners** creates a notable flow to health seeking barriers, highlighting how relationship dynamics can impact healthcare decision-making.

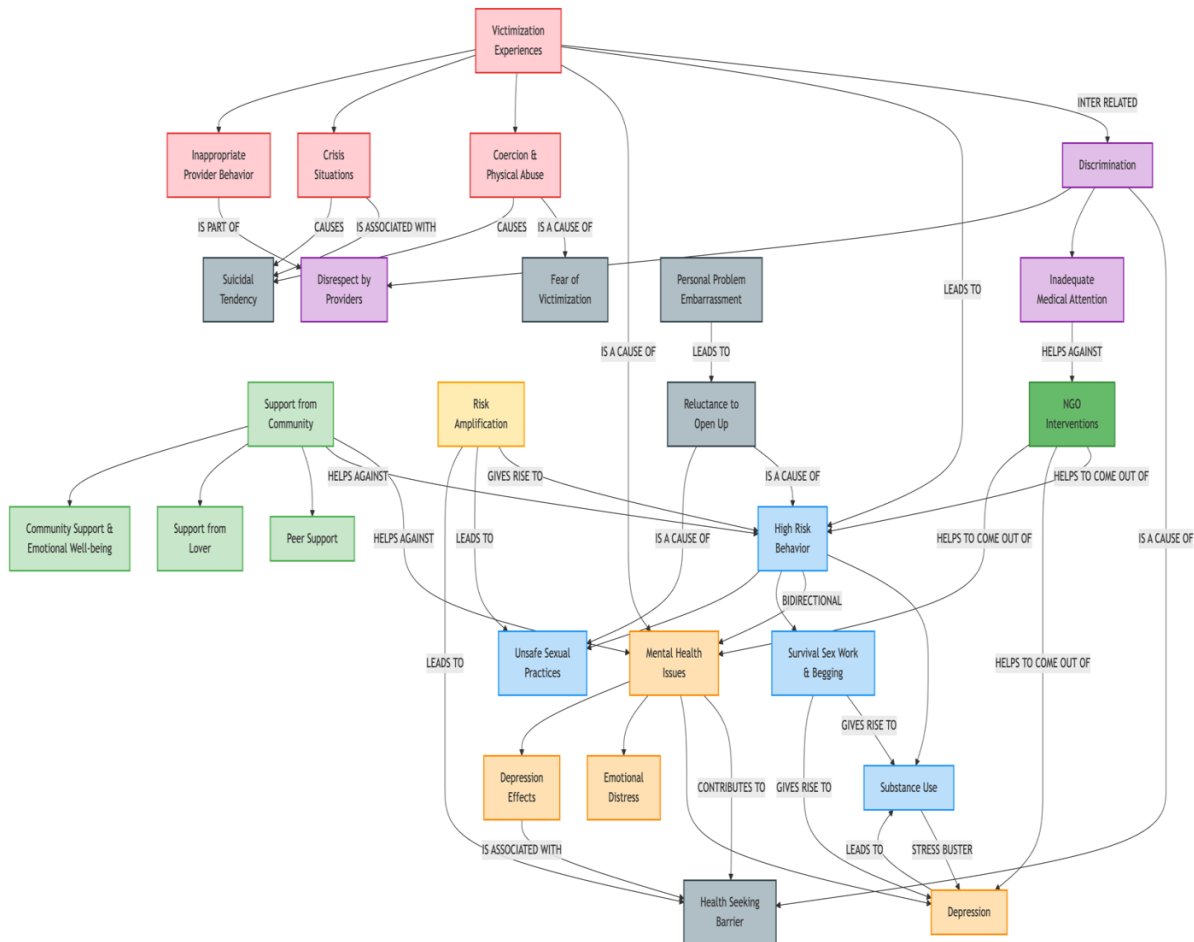
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## Substance Use as Mediator

**High Risk behavior : Substance Use - a Stress Buster** serves as a significant intermediary, receiving flows from depression effects and connecting to health seeking barriers, demonstrating how substance use as a coping mechanism further complicates healthcare access.

This visualizations effectively demonstrates that health seeking barriers are not primarily individual choices but rather the downstream consequences of interconnected traumatic experiences, psychological distress, and adaptive coping behaviors. The multiple pathways converging at health seeking barriers illustrate the complex, syndemic nature of healthcare access challenges among marginalized populations.

**Fig – 15:Force - Directed Network Analysis:**



### Force-Directed Network Analysis:

The above force-directed network analysis provides a comprehensive visual representation of complex interpersonal, social, and structural factors affecting health-seeking behaviors among marginalized populations.

### Primary Drivers: Victimization and Discrimination

The analysis clearly establishes **victimization experiences** and **discrimination** as the fundamental drivers within this system, with their "INTER RELATED" bidirectional

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connection illustrating how these phenomena reinforce each other to create cascading negative outcomes.

### **Victimization Experiences:**

The network reveals victimization operating through three primary mechanisms:

1. **Coercion & Physical Abuse:** This form of victimization directly causes "Fear of Victimization" and "Suicidal Tendency," illustrating immediate psychological harm from traumatic experiences
2. **Crisis Situations:** These acute events are both associated with and cause "Suicidal Tendency," highlighting how traumatic crisis events can precipitate extreme psychological distress
3. **Inappropriate Provider Behavior:** This connects directly to "Disrespect by Providers" in the discrimination category, illustrating how institutional mistreatment becomes a form of secondary victimization

The direct "LEADS TO" connection from victimization to high-risk behavior and "IS A CAUSE OF" connection to mental health issues underscore victimization's role as an upstream determinant that initiates negative health pathways.

### **Discrimination:**

Discrimination operates through two key pathways:

1. **Inadequate Medical Attention:** Significantly, this connects to "NGO Interventions," suggesting the necessity of third-party interventions when formal healthcare systems fail marginalized populations

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2. **Disrespect by Providers:** This emerges as particularly crucial, serving as a focal point where victimization experiences (via inappropriate provider behavior) translate into systemic discrimination

The network clearly shows that discrimination "IS A CAUSE OF" health-seeking barriers, establishing a direct link between discriminatory practices and healthcare access difficulties.

### **Causal Pathway to Mental Health Issues:**

The analysis provides clear evidence for how victimization and discrimination contribute to mental health problems:

1. Mental health issues manifest through three interconnected nodes:
  - **Depression:** Central node showing bidirectional relationship with substance use
  - **Emotional Distress:** Represents broader psychological impact
  - **Depression Effects:** Shows specific outcomes of depressive states
2. The direct "IS A CAUSE OF" pathway from victimization to mental health issues demonstrates that psychological distress emerges directly from experiences of victimization
3. The network shows mental health issues "CONTRIBUTES TO" health-seeking barriers, creating a direct pathway whereby psychological distress impedes healthcare access

This illuminates how mental health challenges are not inherent to the population but emerge as responses to victimization and discrimination.

### **Progression to High-Risk Behaviors:**

The network demonstrates a clear progression to high-risk behaviors through multiple pathways:

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1. **Direct relationship from victimization:** The "LEADS TO" connection from victimization to high-risk behavior suggests that such behaviors represent adaptive responses to traumatic experiences.
  2. **Bidirectional relationship with mental health:** The "BIDIRECTIONAL" connection between mental health issues and high-risk behavior illustrates a complex feedback loop where each exacerbates the other.
  3. **Substance use dynamics:** The positioning of "Substance Use" with its "STRESS BUSTER" relationship to depression illustrates how substance use functions as a maladaptive coping mechanism.
  4. **Survival strategies:** "Survival Sex Work & Begging" connected to both depression and substance use illustrates how economic insecurity drives high-risk behaviors
  5. **Role of internal barriers:** The pathway from "Personal Problem Embarrassment" to "Reluctance to Open Up" to high-risk behaviors shows how internalized stigma contributes to risk taking.

These multiple pathways demonstrate that high-risk behaviors emerge from complex interplays of external factors rather than from individual moral failings.

### **Risk Amplification and Unsafe Sexual Practices:**

The network highlights "Risk Amplification" as a catalytic node that:

1. "GIVES RISE TO" high-risk behavior broadly
2. "LEADS TO" unsafe sexual practices specifically
3. "LEADS TO" health-seeking barriers directly

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This suggests that environments or conditions that amplify risk operate as accelerants within the system, intensifying negative outcomes.

### **Culmination in Health-Seeking Barriers**

The network analysis reveals health-seeking barriers as the ultimate outcome of these interrelated factors:

1. **Multiple contributors:** Health-seeking barriers receive direct inputs from:
  - Risk amplification (with "LEADS TO" connection)
  - Mental health issues (with "CONTRIBUTES TO" connection)
  - Discrimination (with "IS A CAUSE OF" connection)
2. **Position in network:** Health-seeking barriers appear as a terminal node, suggesting they represent the ultimate outcome of these cascading factors.
3. **Absence of direct connection from reluctance:** While "Reluctance to Open Up" directly contributes to high-risk behaviors, the absence of a direct connection to health-seeking barriers suggests that structural factors like discrimination play a more significant role than individual reluctance.

This positioning emphasizes that barriers to healthcare access are primarily structural rather than resulting from individual negligence.

### **Mitigating Factors: Support Systems and Interventions:**

The network identifies two major protective or mitigating factors:

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### **Support from Community:**

Community support operates through three mechanisms:

1. **Peer Support:** Social connections with similarly situated individuals.
2. **Support from Lover:** Intimate partner support providing emotional resources.
3. **Community Support & Emotional Well-being:** Broader community acceptance and validation.

The "HELPS AGAINST" connections from community support to both mental health issues and high-risk behavior illustrate how social resources can interrupt negative cascades at multiple points.

### **NGO Interventions:**

NGO interventions demonstrate three key functions:

1. "HELPS TO COME OUT OF" high-risk behaviour
2. "HELPS TO COME OUT OF" depression specifically
3. "HELPS TO COME OUT OF" mental health issues broadly

Also the "HELPS AGAINST" connection from "Inadequate Medical Attention" to NGO interventions illustrates how NGOs often emerge in response to healthcare system failures.

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# **DISCUSSION**

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## **DISCUSSION:**

This mixed-methods study provides robust evidence for the syndemic clustering of depression, victimization, and high-risk behaviors among MSM and transgender persons in Kolar district, and the significant role these factors play in heightening HIV and STI vulnerability. The study involved 410 participants (259 transgender individuals and 151 MSM) and employed both quantitative and qualitative methodologies to comprehensively explore these interrelationships.

Syndemic theory posits that multiple co-occurring epidemics interact synergistically, producing greater health burdens than would be expected from each condition in isolation.<sup>126,127</sup> Our findings align with this framework, demonstrating that depression, high-risk behaviors, and victimization cluster together and mutually reinforce one another, ultimately increasing vulnerability to HIV and other STIs among these marginalized populations.

### **Sociodemographic Context and Vulnerabilities**

#### **Population Characteristics**

The study population comprised diverse gender identities within the transgender and MSM communities, with transsexuals (44.6%) forming the largest group, followed by kothis (22.2%), TGs (18.5%), and double deckers (14.6%).

The study population consisted largely of socioeconomically marginalized individuals, mirroring other Indian studies on transgender women and MSM. The majority were Hindus (comparable to national demographic patterns for transgender communities), with significant proportions having only primary or middle-school education, consistent with previous research indicating education deprivation as a key axis of vulnerability in these groups.<sup>56,128</sup>

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## **Occupational and Economic Vulnerabilities**

Most worked in elementary (62.7%) and 12.9% reporting unemployment, with sex work and begging being leading sources of livelihood, indicating significant economic marginalization — a finding structurally aligned with existing documentation on social exclusion and economic insecurity in Indian transgender and MSM communities.<sup>129,130</sup>

The proportion engaging in sex work (49%) or collection work (45.1%) is comparable to earlier urban Indian data where 44% to 65% of transgender women and kothi-identified MSM report sex work or similar marginal employment. These occupational structures compound both risk exposure and barriers to health and social services.<sup>129,131</sup>

While many participants belonged to upper middle (46.3%) or upper socioeconomic class (42.0%) according to BG Prasad classification, this finding must be interpreted cautiously as it may reflect temporary income from sex work rather than stable economic security.

These sociodemographic characteristics reflect broader patterns of social exclusion and marginalization that create fertile ground for syndemic health conditions. As noted by Brennan et al. (2012), social marginalization serves as both a catalyst and consequence of syndemic health problems among transgender populations.<sup>126</sup>

## **Mental Health: Burden and Correlates**

### **Prevalence and Patterns**

A striking burden of depressive disorders was found, with 33.2% of participants showing clinically relevant depression, with 17.1% satisfying criteria for the Major Depressive Disorder (MDD) and 16.1% for Other Depressive Disorder. This significant figure echoes national multi-site estimates for transgender women (23.8%–43% clinical depression) and

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Indian MSM (28%–38%).<sup>56,132,133</sup> This high prevalence also aligns with international literature documenting elevated rates of depression among transgender and MSM populations.<sup>126,134,135</sup>

### **Differential Vulnerability by Gender Identity**

This research also showed an important relationship between particular genders subgroups and depression, with 26.2% of transsexual participants and 19.7% of TGs reporting major depressive symptoms, compared to lower rates among kothis (12.1%) and double deckers. This finding is resonating with research in South Asia and the US showing more feminine-presenting and socially visible transgender persons are at heightened risk for targeted violence, family rejection, and psychological distress.<sup>56,96</sup>

### **Association with Socioeconomic Factors**

Notably, Depression showed significant associations with education level, occupation, and HIV status. Among illiterate participants, 31% had major depressive disorder, compared to lower rates among those with higher education. Unemployment was strongly associated with depression, with 26.4% of unemployed participants reporting major depressive symptoms. Most strikingly, 55.6% of HIV-positive participants exhibited major depressive disorder, highlighting the complex interplay between HIV status and mental health. These paralleled with longitudinal findings in India and globally that social exclusion, HIV infection, and educational deprivation are potent predictors of depression.<sup>56,134</sup>

These findings are consistent with syndemic theory, which emphasizes how social and structural conditions shape psychological vulnerabilities among marginalized populations.<sup>136</sup> The qualitative force-directed network analysis further illuminated these connections,

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demonstrating how discrimination and victimization serve as upstream determinants of mental health problems.

## **Victimization and Structural Barriers**

### **Patterns and Disparities**

Victimization emerged as a pervasive experience, ranging from verbal harassment, physical violence, to discrimination by healthcare workers, with significant variations (mean victimization scores) across gender identities. TGs (24.76) and transsexuals (25.07) reported substantially higher victimization scores compared to kothis (17.81) and double deckers (15.27). These findings align with those studies from India, Central America and Indonesia, where physical and sexual violence, police harassment, and rampant social exclusion are widely documented more among Transgenders compared to MSM.<sup>66,137,138</sup>

### **Structural and Occupational Vulnerability:**

Transgenders and MSM often working in environments with rigid hierarchical structures may face higher levels of workplace discrimination and harassment. The nature of clerical work, which can involve significant interaction with the public and colleagues, may expose transgender individuals and MSM to increased risks of victimization, including gender-based violence and harassment. This finding is in par with the current study where participants with clerical works reported mean Victimization score: 27.45.<sup>139,140</sup>

Collection/ Begging work (mean victimization score: 24.45) and sex work (mean: 24.64) were strongly associated with victimization.<sup>141</sup> HIV-positive participants reported dramatically higher victimization (34.09) compared to HIV-negative individuals (20.47), highlighting how health status intersects with social stigma to compound vulnerability.<sup>142,143</sup>

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## Healthcare Discrimination - Victimization

Healthcare discrimination emerged as a central barrier with qualitative analysis revealing the centrality of "Disrespect and Discrimination by Healthcare Providers" - the most grounded code (Gr=41), revealing how healthcare settings often become sites of secondary victimization. The Sankey diagrams showed strong connections from healthcare discrimination to mental health issues, with 14 co-occurrences between healthcare discrimination and depression.

Participants reported ‘experiences of humiliation, verbal attacks, and threats of having their sexual orientation revealed’. As one transgender woman reported in the focus group: “In hospital settings, everything is gendered into binary – be it the OPD lines, medical records, wards or washrooms”.

These findings reflect broader patterns of institutional discrimination against transgender and MSM populations in healthcare settings in India. As documented by recent studies, transgender individuals face significant barriers in accessing healthcare, including provider discrimination, unavailability of appropriate services, and fear of mistreatment.<sup>129</sup> Altogether it agrees with nationwide evidence of “systemic institutional discrimination” against gender and sexual minorities in Indian healthcare settings.<sup>120,144,145</sup>

Our study reported pervasive avoidance of formal health facilities due to anticipated or prior abuse which is found to be a consistent barrier in both Indian and international researches.<sup>120,146</sup> Fear of being “outed,” mocked, or denied care restricts appropriate medical engagement, pushing many to rely on NGOs or informal/unregulated health providers, as our qualitative data also demonstrates.<sup>146</sup>

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## High-Risk Behaviors: Patterns, Syndemic Interactions, and HIV Acquisition

### Substance Use Patterns

Substance use was observed among participants, with 9.8% regularly using tobacco (more than 10 times in the past two weeks) and 3.2% frequently consuming alcohol—patterns that may suggest emerging dependency. Notably, these rates are substantially lower than those reported in a prior study among MSM in Chennai, India, where 28% of respondents reported drinking alcohol at least weekly to inebriation and 25% said they were weekly tobacco users. This stark difference highlights a considerable variation in substance use patterns between the two populations.<sup>147</sup>

Substance use—especially alcohol and tobacco—was strongly associated with both risk behaviors and depression, consistent with the “risk clustering” documented in Indian and global syndemics research.<sup>56,148</sup> Alcohol, tobacco, and similar substances are described as coping mechanisms in the qualitative data, echoing the “survival stress” paradigm identified in multiple qualitative studies with transgender women and MSM in South India.<sup>131,149</sup>

Marijuana and cocaine use were rare, with 96.1% and 99.3% respectively reporting lifetime abstinence.

### Sexual Risk Behaviors

High rates of condomless, multiple-partner, or transactional sex—especially among Transsexuals and TGs—were observed in the current study, similar to Indian and Southeast Asian findings that economically and socially marginalized transfeminine individuals engage in significantly elevated rates of transactional sex and risky sexual practices.<sup>127,129,130,150</sup>

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Among those who had sex with more than 10 people in the previous month, 81.5% were transsexuals. Similarly, anal sex was frequently reported, with associations varying by gender identity and occupation. Sex workers demonstrated substantially higher frequencies of both multiple partners and anal sex compared to non-sex workers. Similar patterns of risk behaviors were observed among TGs and MSM in a previous Chinese study.<sup>151</sup>

### **Risk amplification and HIV acquisition:**

The finding that participants engaging in sex with more than ten partners or frequent anal sex had the highest HIV prevalence demonstrates the direct link between behavioral and biological risk, as seen in earlier epidemiological studies.<sup>148,152</sup>

### **Syndemic Interactions with Risk Behaviors**

#### **Correlation Analysis**

The correlation analysis further demonstrated the interrelationships among syndemic conditions. Victimization showed a strong positive correlation with depression ( $r=0.61$ ,  $p<0.001$ ) and moderate correlations with high-risk behavior ( $r=0.24$ ,  $p<0.001$ ). High-risk behavior and depression demonstrated a weak positive correlation ( $r=0.123$ ,  $p=0.013$ ), while alcohol abuse was moderately linked to all three variables. This precisely mirror the “syndemic triad” described in several Indian and US studies.<sup>56,126,149</sup> Such findings reinforce the need to view mental health, violence, and risky behaviors as mutually reinforcing—driven by social exclusion and structural inequalities.

The qualitative analysis provides crucial context, revealing how high-risk behaviors often emerge as adaptive responses to traumatic experiences rather than individual moral failings. The Sankey diagram clearly illustrated pathways from victimization experiences to high-risk behaviors, with "Victimization Experiences: Coercion, Physical Abuse and Forceful Sex"

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strongly linked to "Survival through Sex work and Begging" (4 co-occurrences) and "Crisis Situations" connected to "Substance Use - a Stress Buster" (3 co-occurrences).

These findings align with syndemic theory, which conceptualizes risk behaviors not as isolated choices but as responses to overlapping social, economic, and psychological vulnerabilities. Also transgender individuals' risk behaviors often reflect immediate survival needs rather than health priorities.<sup>135,136</sup>

### **The Syndemic Model and HIV Vulnerability: Empirical Evidence**

The binary logistic regression analysis provided compelling evidence for syndemic effects on HIV vulnerability. Each unit increase in depression score increased HIV odds by 1.134 times ( $p=0.002$ ), each unit increase in high-risk behavior increased odds by 1.116 times ( $p=0.042$ ), and most significantly, each unit increase in victimization increased HIV odds by 1.211 times ( $p<0.001$ ).

This along with correlation analyses offer clear syndemic evidence: each unit increase in depression, high-risk behavior, and victimization independently and cumulatively predicted elevated HIV risk, even after adjustment for standard confounders.

These findings support the syndemic hypothesis that co-occurring psychosocial conditions interact to amplify HIV vulnerability, as validated among both the Global and Indian MSM and Trans women.<sup>56,135,148</sup>

### **Qualitative Analysis: Pathways and Barriers**

#### **Patterns of Healthcare Avoidance**

The study revealed significant barriers to healthcare access, with depression, victimization, and prior negative experiences all contributing to healthcare avoidance. The Sankey diagram

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demonstrated a prominent flow from depression to "Not seeking health care due to emotional state" (9 co-occurrences), illustrating how mental health conditions directly impede healthcare access.

Thematic and network analyses further elucidated how discrimination and victimization fundamentally drive downstream health problems within this syndemic system, with bidirectional connections illustrating how these phenomena reinforce each other. "Disrespect by healthcare providers" and harassment/victimization appear as root nodes, leading to depressive symptoms, substance use, which in turn contribute to health-seeking barriers and ultimately to syndemic accumulation. Importantly, these themes reiterate findings from other qualitative research in Indian healthcare settings, where anticipatory stigma and traumatic encounters with providers create durable barriers to care.<sup>120,144,146</sup>

### **NGO Support as Mitigation:**

The qualitative analysis identified NGO interventions and Community support as crucial mitigating factors, with "Support from NGOs" emerging as the second most grounded code (Gr=43). NGO interventions demonstrated three key functions: helping individuals overcome high-risk behaviors, addressing depression, and mitigating broader mental health issues. Also Community Support helped individuals overcome mental health issues and high risk behaviours. The "HELPS AGAINST" connection from "Inadequate Medical Attention" to NGO interventions illustrated how NGOs often emerge in response to healthcare system failures.

NGO and community support emerged as significant mitigating factors in addressing syndemic health conditions when formal healthcare systems fail marginalized populations. However, it also underscores the need for structural reforms to make healthcare systems more inclusive and responsive to the needs of transgender and MSM populations. This

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critical finding is also endorsed in studies showing that peer-driven and grassroots services are effective in enhancing resilience, health service access, and psychological wellbeing among MSM and transgender populations.<sup>150,153</sup>

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# **STRENGTHS OF THE**

# **STUDY**

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### **STRENGTHS OF THE STUDY:**

This study has several notable strengths:

- The mixed-methods design that merged quantitative statistical data on syndemic conditions with qualitative narrative insights done on MSM and Transgender groups provides a comprehensive understanding of syndemic interactions.
- By adopting a mixed method approach, the present study analyzed statistical evidence on quantitative aspect and narrative stories on qualitative aspect, providing culturally sensitive ideas and community based intervention strategies.
- The large sample size (N=410) enhances the reliability of the quantitative findings, while the focus group discussions provide nuanced perspectives on lived experiences.
- The inclusion of diverse gender identities within the transgender and MSM communities allows for comparative analysis across subgroups, revealing important variations in vulnerability and resilience.

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# **LIMITATIONS OF THE**

# **STUDY**

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### **LIMITATIONS OF THE STUDY:**

- The cross-sectional design limits causal inferences, particularly regarding the directionality of relationships among syndemic conditions.
- Longitudinal studies are needed to establish temporal sequences.
- The study's focus on one district (Kolar) may limit generalizability to other regions of India with different socio-cultural contexts.
- In addition, the use of self-reported measures for sensitive issues such as the sexual risk behaviors and substance abuse may bias the reporting.

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## **RECOMMENDATIONS:**

- Create safe, judgment-free healthcare spaces that genuinely respect gender identity and provide comprehensive, affirming care without discrimination
- Develop holistic support systems that simultaneously address mental health, economic vulnerability, sexual health, and social protection among Transgenders and MSM.
- Implement economic empowerment programs that provide meaningful alternatives to survival sex work and create pathways for financial independence and dignity
- Design educational interventions that are sensitive to unique community challenges, focusing on skill development, personal safety, and social integration
- Establish community-led support networks that build resilience, provide psychological support, and create collective advocacy platforms
- Create legal and policy frameworks that explicitly protect against discrimination in healthcare, employment, education, and public spaces
- Provide trauma-informed mental health services that understand the complex intersections of social marginalization, violence, and psychological well-being
- Develop culturally competent sexual health education and prevention programs that go beyond medical interventions and address underlying social determinants of health
- Foster healthcare provider training that cultivates empathy, eliminates bias, and ensures respectful, equitable treatment for transgender and MSM individuals.
- Support community-driven research and intervention design that centers the lived experiences and expertise of marginalized populations themselves

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# **SUMMARY**

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## **SUMMARY**

This study explores the complex health experiences of Men who have Sex with Men (MSM) and Transgender populations in Kolar district, Karnataka, India, through an innovative syndemic framework. Challenging traditional epidemiological approaches, the research examines the intricate interconnections between psychological distress, social marginalization, sexual risk behaviors, and sexually transmitted infections.

Conducted over 18 months, the study involved 410 participants, including 259 Transgender individuals and 151 MSM, utilizing a mixed-method research design. Comprehensive data collection incorporated standardized quantitative assessment tools, focus group discussions, and narrative interviews, coupled with advanced analytical techniques.

Key findings revealed significant mental health challenges, with 26.2% of Transsexuals diagnosed with major depressive disorder. The research uncovered profound syndemic connections, demonstrating how psychological distress, social marginalization, and health risks are intimately linked. Victimization experiences strongly correlated with increased depression scores, while drug use emerged as a critical coping mechanism.

The study provides transformative insights that challenge existing medical research paradigms, emphasizing the urgent need for integrated, culturally sensitive healthcare practices. It calls for comprehensive support systems, policy interventions to reduce structural discrimination, and a fundamental redesign of healthcare delivery for marginalized communities, highlighting the profound interconnectedness of health, social experiences, and individual resilience.

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# **CONCLUSION**

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## **CONCLUSION**

This mixed-methods study provides compelling evidence for a syndemic of depression, high-risk behaviors, and victimization among transgender and MSM populations in Kolar district, with significant implications for HIV vulnerability. Our findings highlight how these conditions cluster together and interact synergistically, creating a burden of health problems greater than the sum of its parts. The qualitative analysis illuminates the mechanisms underlying these interactions, establishing discrimination and victimization as fundamental drivers within this syndemic system.

These findings call for integrated interventions that address multiple syndemic conditions simultaneously, healthcare system reforms to reduce discrimination and improve access, and structural interventions targeting the social determinants of health inequities. Through a syndemic framework in addressing these interconnected issues, we could create better ways of enhancing the health and wellbeing of transgender and MSM populations in India.

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# **ANNEXURES**

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## ANNEXURE - I

### PRO FORMA DATA COLLECTION / ಮಾಹಿತಿ ಸಂಗ್ರಹ ನಮೂನೆಯ ಬಳಕೆಗೆ

\_\_\_\_\_

Date / ದಿನಾಂಕ

Form No. / ನಮೂನೆ ಸಂಖ್ಯೆ \_\_\_\_\_

ID/Name / ಗುರುತು/ಹೆಸರು \_\_\_\_\_

### QUESTIONNAIRE / ಪ್ರಶ್ನಾವಳಿ

#### SECTION A / ವಿಭಾಗ ಅ

#### SOCIO-DEMOGRAPHIC PROFILE / ಸಾಮಾಜಿಕ-ಜನಾಂಕಿಕ ವ್ಯಕ್ತಿಚಿತ್ರ

|       |                  |          |        |    |       |                  |            |
|-------|------------------|----------|--------|----|-------|------------------|------------|
| 1 / ೧ | Name /<br>ಹೆಸರು  |          |        |    |       |                  |            |
| 2 / ೨ | Age /<br>ವಯಸ್ಸು  |          |        |    |       |                  |            |
| 3 / ೩ | Gender /<br>ಲಿಂಗ | MAL<br>E | FEMALE | TG | KOTHI | DOUBLEDECK<br>ER | TRANSEXUAL |

|       |                                                      |                         |                                  |                                                                   |                                           |                                                         |                                                                               |              |                                                       |                  |                                                           |  |
|-------|------------------------------------------------------|-------------------------|----------------------------------|-------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------|--------------|-------------------------------------------------------|------------------|-----------------------------------------------------------|--|
| 4 / ૪ | Religion /<br>ધર્મ                                   | HINDU                   |                                  |                                                                   | CHRISTIAN                                 |                                                         | MUSLIM                                                                        |              |                                                       |                  |                                                           |  |
| 5 / ૫ | Education /<br>શિક્ષણ                                | ILLIT<br>ERAT<br>E      | PRIM<br>ARY                      | SECONDA<br>RY                                                     | HIGHE<br>R<br>SECON<br>DARY               | DIPL<br>OMA                                             | GRADUA<br>TE                                                                  | POSTGRADUATE |                                                       |                  |                                                           |  |
| 6 / ૬ | Occupatio<br>n /<br>વ્યવસ્થા                         | UNE<br>EMPL<br>OYE<br>D | ELEMEN<br>TARY<br>OCCUPA<br>TION | PLANT<br>&<br>MACHI<br>NE<br>OPERA<br>TOR<br>AND<br>ASSEM<br>BLER | CRAFT<br>AND<br>RELAT<br>ED<br>WORK<br>ER | SKILLED<br>AGRICUL<br>TURAL<br>AND<br>FISHERY<br>WORKER | SKILL<br>ED<br>WORK<br>ER,<br>SHOP<br>&<br>MARK<br>ET<br>SALES<br>WORK<br>ERN | CLE<br>RK    | TECHNI<br>CIAN /<br>ASSOCI<br>ATE<br>PROFES<br>SIONAL | PROFESSI<br>ONAL | LEGISL<br>ATOR,<br>SENIOR<br>OFFICIA<br>L,<br>MANAG<br>ER |  |
| 7 / ૭ | Income<br>per capita /<br>તલા<br>અદાય                |                         |                                  |                                                                   |                                           |                                                         |                                                                               |              |                                                       |                  |                                                           |  |
| 8 / ૮ | Socioecono<br>mic class /<br>સામાજિક,<br>અર્થિક વર્ગ | I                       | II                               | III                                                               | IV                                        | V                                                       |                                                                               |              |                                                       |                  |                                                           |  |
|       |                                                      |                         |                                  |                                                                   |                                           |                                                         |                                                                               |              |                                                       |                  |                                                           |  |

|            |                                                                                                                                                                                                                                           |                                   |              |        |              |                     |           |     |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|--------|--------------|---------------------|-----------|-----|
| 9 /<br>೯   | Medical history /<br>ಆರೋಗ್ಯ ಪೂರ್ವನಕ್ಷೆ                                                                                                                                                                                                    | Diabetes                          | Hypertension | Asthma | Tuberculosis | Thyroid<br>Disorder | Epilepsy  | HIV |
| 10 /<br>೧೦ | <b>History of Substance<br/>Usage / ಪದಾರ್ಥಗಳ<br/>ಬಳಕೆಯ ಇತಿಹಾಸ</b><br><br><b>If yes, how many<br/>times have you<br/>consumed it in the<br/>past two weeks?</b><br><br>ಹೌದಾದಲ್ಲಿ ಕಳೆದ ಎರಡು<br>ವಾರಗಳಲ್ಲಿ ಅದನ್ನು ಎಷ್ಟು<br>ಬಾರಿ ಸೇವಿಸಿದ್ದೀರಿ? | <b>Substances /<br/>ಪದಾರ್ಥಗಳು</b> | NEVER/NIL    | 1 Time | 2-5 Times    | 6-10 Times          | >10 Times |     |
|            |                                                                                                                                                                                                                                           | Alcohol /<br>ಮದ್ಯ                 |              |        |              |                     |           |     |
|            |                                                                                                                                                                                                                                           | Tobacco /<br>ತಂಬಾಕು               |              |        |              |                     |           |     |
|            |                                                                                                                                                                                                                                           | Marijuana /<br>ಗಾಂಜಾ              |              |        |              |                     |           |     |
|            |                                                                                                                                                                                                                                           | Cocaine /<br>ಕೊಕೇನ್               |              |        |              |                     |           |     |
|            |                                                                                                                                                                                                                                           | Heroin /<br>ಹೆರೋಯಿನ್              |              |        |              |                     |           |     |

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**SECTION B / ವಿಭಾಗ ಆ****PARTICIPANT HEALTH PROFILE (PHQ-9) / ಪ್ರಯೋಗಾರ್ಥಿಯ ಆರೋಗ್ಯ ವ್ಯಕ್ತಿಚಿತ್ರ  
(ಪಿ.ಎಚ್.ಕ್ಯು-೯)**

Over the last two weeks, how often have you been bothered by any of the following problems? Write ✓ to indicate your answer.

ಕಳೆದ ಎರಡು ವಾರಗಳಲ್ಲಿ ಈ ಕೆಳಗಿನ ಯಾವುದೇ ಸಮಸ್ಯೆಗಳಿಂದ ನೀವು ಎಷ್ಟು ಬಾರಿ ಪೀಡಿತಗೊಂಡಿರುವಿರಿ?

ನಿಮ್ಮ ಉತ್ತರವನ್ನು ಸೂಚಿಸಲು ✓ ಬರೆಯಿರಿ.

|          |                                                                                            | Not at all /<br>ಇಲ್ಲವೇ ಇಲ್ಲವು | Several days /<br>ಹಲವು ದಿನಗಳು | More than half the<br>days /<br>ಅರ್ಧಕ್ಕಿಂತಲೂ ಅಧಿಕ<br>ದಿನಗಳು | Nearly every day /<br>ಬಹುತೇಕ ಪ್ರತಿ ದಿನ |
|----------|--------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------------------------------|----------------------------------------|
| a /<br>ಅ | Little interest or pleasure in<br>doing things<br>ಕೆಲಸಗಳಲ್ಲಿ ಆಸಕ್ತಿ ಅಥವಾ<br>ತೃಪ್ತಿಯಿಲ್ಲ    | 0 / 0                         | 1 / 0                         | 2 / ೨                                                       | 3 / ೩                                  |
| b /<br>ಆ | Feeling down, depressed or<br>hopeless<br>ಖಿನ್ನತೆ, ನಿರುತ್ಸಾಹ, ಅಥವಾ<br>ಹತಾಶಾ ಭಾವನೆ          | 0 / 0                         | 1 / 0                         | 2 / ೨                                                       | 3 / ೩                                  |
| c /<br>ಇ | Trouble falling or staying<br>asleep, or sleeping too much<br>ನಿದ್ರಾರಹಿತ, ನಿದ್ರಾ ಭಂಗ, ಅಥವಾ | 0 / 0                         | 1 / 0                         | 2 / ೨                                                       | 3 / ೩                                  |

|          |                                                                                                                                                                                                                     |       |       |       |       |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
|          | ವಿಪರೀತ ನಿಧ್ರೆ                                                                                                                                                                                                       |       |       |       |       |
| d /<br>ಈ | Feeling tired or having little energy<br>ನಿಶ್ಯಕ್ತಿ ಅಥವಾ ಆಯಾಸದ ಭಾವನೆ                                                                                                                                                 | 0 / 0 | 1 / 0 | 2 / 9 | 3 / ೩ |
| e /<br>ಉ | Poor appetite or overeating<br>ಹಸಿವಿನ ಕೊರತೆ ಅಥವಾ<br>ಅತಿಯಾದ ತಿನ್ನುವಿಕೆ                                                                                                                                               | 0 / 0 | 1 / 0 | 2 / 9 | 3 / ೩ |
| f /<br>ಉ | Feeling bad about yourself, that you are a failure, or that you have let yourself or your family down<br>ನಿಮ್ಮ ಬಗ್ಗೆ ನಿಮಗೆ ಅಲ್ಪ/ಹೀನ ಭಾವನೆ, ನೀವು ವಿಫಲರು, ಅಥವಾ ನಿಮ್ಮನ್ನು ಅಥವಾ ನಿಮ್ಮ ಕುಟುಂಬವನ್ನು ನಿರಾಸೆಗೊಳಿಸಿರುವ ಭಾವನೆ | 0 / 0 | 1 / 0 | 2 / 9 | 3 / ೩ |
| g /<br>ಋ | Trouble concentrating on things, such as reading the newspaper or watching television<br>ದಿನಪತ್ರಿಕೆ ಓದುವುದು, ದೂರದರ್ಶನ ನೋಡುವುದು, ಮುಂತಾದ ಕ್ರಿಯೆಗಳ ಮೇಲೆ                                                                | 0 / 0 | 1 / 0 | 2 / 9 | 3 / ೩ |

|          |                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
|          | ಏಕಾಗ್ರತೆ ಕೊರತೆ                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| h /<br>ಎ | <p>Moving or speaking so slowly that other people could have noticed, or the opposite—being so fidgety or restless that you have been moving around a lot more than usual</p> <p>ಇತರರು ಗಮನಿಸಬಹುದಾದಷ್ಟು ನಿಧಾನ ಚಲಿಕೆ ಅಥವಾ ಮಾತನಾಟ. ಅಥವಾ, ಇದಕ್ಕೆ ವಿರುದ್ಧವಾಗಿ, ಸಾಮಾನ್ಯಕ್ಕಿಂತ ಹೆಚ್ಚು ಚಲಿಕೆ, ಚತುರತೆ, ಅಥವಾ ಪ್ರಕ್ಷುಬ್ಧತೆ</p> | 0 / 0 | 1 / 0 | 2 / 9 | 3 / ೩ |
| i /<br>ಏ | <p>Thoughts that you would be better off dead or of hurting yourself</p> <p>ನೀವು ಸತ್ತರೆ ಉತ್ತಮ ಎಂಬ ಭಾವನೆ ಅಥವಾ ನಿಮ್ಮನ್ನು ನೋಯಿಸಿಕೊಳ್ಳುವ ಆಲೋಚನೆಗಳು</p>                                                                                                                                                                  | 0 / 0 | 1 / 0 | 2 / 9 | 3 / ೩ |
|          | Add / ಕೂಡಿಕೆ                                                                                                                                                                                                                                                                                                        |       |       |       |       |
|          | Total / ಮೊತ್ತ                                                                                                                                                                                                                                                                                                       |       |       |       |       |

|                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                          | Not<br>difficult at<br>all | Somewhat<br>difficult | Very difficult | Extremely difficult |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------|----------------|---------------------|
| j /<br>ಬ                                                                                                                                                                                       | <p>If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?</p> <p>ನೀವು ಯಾವುದೇ ಸಮಸ್ಯೆಗಳನ್ನು ಪರಿಶೀಲಿಸಿದರೆ, ನಿಮ್ಮ ಕೆಲಸವನ್ನು ಮಾಡಲು, ಮನೆಯಲ್ಲಿ ವಸ್ತುಗಳನ್ನು ನೋಡಿಕೊಳ್ಳಲು ಅಥವಾ ಇತರ ಜನರೊಂದಿಗೆ ಬೆರೆಯಲು ಈ ಸಮಸ್ಯೆಗಳು ಎಷ್ಟು ಕಷ್ಟಕರವಾಗಿವೆ?</p> |                            |                       |                |                     |
| <p>Healthcare professional: please refer to the scorecard in the end to interpret the total</p> <p>ಸ್ವಾಸ್ಥ್ಯ ವೃತ್ತಿಕರ: ಮೊತ್ತವನ್ನು ಅರ್ಥೈಸಿಕೊಳ್ಳಲು ದಯವಿಟ್ಟು ಕಡೆಯಲ್ಲಿರುವ ಅಂಕಪಟ್ಟಿಯನ್ನು ನೋಡಿರಿ</p> |                                                                                                                                                                                                                                                                                                                                          |                            |                       |                |                     |

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## PHQ-9 DEPRESSION QUESTIONNAIRE

ಪಿ.ಎಚ್.ಕ್ಯು-೯ ಖಿನ್ನತೆ ಪ್ರಶ್ನಾವಳಿ

**Initial diagnosis / ಆರಂಭಿಕ ರೋಗನಿರ್ಣಯ**

1. The patient completed the PHQ-9 Quick Depression Assessment / ರೋಗಿಯು ಪಿ.ಎಚ್.ಕ್ಯು-೯ ತ್ವರಿತ

ಖಿನ್ನತೆಯ ಮೌಲ್ಯಮಾಪನವನ್ನು ಪೂರ್ಣಗೊಳಿಸುತ್ತಾನೆ

2. If there are at least four ✓s (on columns 2 & 3) in the responses (including Questions 1 and 2),

determine the depressive disorder. Assign a score to determine the severity / ಕನಿಷ್ಠ ನಾಲ್ಕು ✓ಗಳು

ಇದ್ದರೆ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆಯನ್ನು ಪರಿಗಣಿಸಿ. ತೀವ್ರತೆಯನ್ನು ನಿರ್ಧರಿಸಲು ಅಂಕ ಸೇರಿಸಿ:

- a. Major Depressive Disorder/ ಪ್ರಮುಖ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆ: if there are at least five ✓s (on columns 2

& 3) in the responses (one of which corresponds to either Question 1 or Question 2), deem it a

Major Depressive Disorder / ಕನಿಷ್ಠ ಐದು ✓ ಇದ್ದರೆ (ಅವುಗಳಲ್ಲಿ ಒಂದು ಪ್ರಶ್ನೆ ೧ ಅಥವಾ ೨

ಅನುರೂಪವಾಗಿದೆ) ಇದು ಪ್ರಮುಖ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆ

- b. Other Depressive Disorder / ಇತರ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆ: if there are two to four ✓s (on columns 2

& 3) in the responses (one of which corresponds to Question 1 or Question 2), then deem it as

Other Depressive Disorder / ೨ರಿಂದ ೪ ✓ ಇದ್ದರೆ (ಅವುಗಳಲ್ಲಿ ಒಂದು ಪ್ರಶ್ನೆ ೧ ಅಥವಾ ೨

ಅನುರೂಪವಾಗಿದೆ) ಇದು ಇತರ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆ

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**Note:** Since the questionnaire relies on the patient's self-reporting, all responses should be verified by a clinician and a definitive diagnosis is made on clinical grounds taking into account how well the patient understood the questionnaire as well as other relevant information from the patient.

Diagnoses of Major Depressive Disorder or Other Depressive Disorder also require impairment of social, occupational, or other important areas of functioning (Question 10), and ruling out normal bereavement, a history of a manic episode (bipolar disorder), and a physical disorder, medication, or other drug as the biological cause of the depressive symptoms.

ಗಮನಿಸಿ: ಪ್ರಶ್ನಾವಳಿಯು ರೋಗಿಯ ಸ್ವಯಂ-ವರದಿಯನ್ನು ಅವಲಂಬಿಸಿರುವುದರಿಂದ ಎಲ್ಲಾ ಪ್ರತಿಕ್ರಿಯೆಗಳನ್ನು ವೈದ್ಯರು ಪರಿಶೀಲಿಸಬೇಕು ಮತ್ತು ರೋಗಿಯು ಪ್ರಶ್ನಾವಳಿಯನ್ನು ಎಷ್ಟು ಚೆನ್ನಾಗಿ ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದಾರೆ ಮತ್ತು ರೋಗಿಯ ಇತರ ಸಂಬಂಧಿತ ಮಾಹಿತಿಯನ್ನು ಗಣನೆಗೆ ತೆಗೆದುಕೊಂಡು ಲಾಕ್ಷಣಿಕ ಆಧಾರದ ಮೇಲೆ ನಿರ್ಣಾಯಕ ರೋಗನಿರ್ಣಯವನ್ನು ಮಾಡಬೇಕು.

ಪ್ರಮುಖ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆ ಅಥವಾ ಇತರ ಖಿನ್ನತೆಯ ಅಸ್ವಸ್ಥತೆಯ ರೋಗನಿರ್ಣಯಗಳಿಗೆ ಸಾಮಾಜಿಕ, ಬೆದ್ದೋಗಿಕ ಅಥವಾ ಇತರ ಪ್ರಮುಖ ಕಾರ್ಯಕ್ಷೇತ್ರಗಳ ದುರ್ಬಲತೆಯ ಅಗತ್ಯವಿರುತ್ತದೆ (ಪ್ರಶ್ನೆ ೧೦) ಮತ್ತು ಸಾಮಾನ್ಯ ದುಃಖ, ಉನ್ನಾದ ಸಂಚಿಕೆ (ಬೈಪೋಲಾರ್ ಡಿಸಾರ್ಡರ್) ಇತಿಹಾಸ ಮತ್ತು ದೈಹಿಕ ಅಸ್ವಸ್ಥತೆ, ಬೆಡಧಿ, ಅಥವಾ ಇತರ ಬೆಡಧವು ಖಿನ್ನತೆಯ ರೋಗಲಕ್ಷಣಗಳ ಜೈವಿಕ ಕಾರಣವಾಗಿದೆ.

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### **Monitoring severity / ತೀವ್ರತೆಯನ್ನು ಮೇಲ್ವಿಚಾರಣೆ**

To monitor severity over time for newly diagnosed patients or patients in current treatment for depression, follow the following steps:

1. The patient may complete the questionnaire at baseline and at regular intervals (*e.g.*, every two weeks) at home and bring them in at their next appointment for scoring, or they may complete the questionnaire during each scheduled appointment
2. Add up the following columns if checked:
  - a. several days = 1
  - b. more than half the days = 2
  - c. nearly every day = 3
3. Add together column scores to get a *total* score
4. Refer to the accompanying PHQ-9 Scoring Box to interpret the *total* score
5. The results may be included in the patient's files to assist you in setting up a treatment goal, determining the degree of response, as well as guiding treatment intervention

### **Scoring**

Add up all the checked boxes in PHQ-9 for the following checks:

1. not at all = 0
2. several days = 1
3. more than half the days = 2
4. nearly every day = 3

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### Interpretation of the total score

| Total score / ಮೊತ್ತ ಅಂಕ | Depression severity / ಖಿನ್ನತೆ ತೀವ್ರತೆ               |
|-------------------------|-----------------------------------------------------|
| 1 to 4<br>೧ ರಿಂದ ೪      | Minimal depression<br>ಕನಿಷ್ಠ ಖಿನ್ನತೆ                |
| 5 to 10<br>೫ ರಿಂದ ೧೦    | Mild depression<br>ಸೌಮ್ಯ ಖಿನ್ನತೆ                    |
| 10 to 14<br>೧೦ ರಿಂದ ೧೪  | Moderate depression<br>ಮಧ್ಯಮ ಖಿನ್ನತೆ                |
| 15 to 19<br>೧೫ ರಿಂದ ೧೯  | Moderately severe depression<br>ಮಧ್ಯಮ ತೀವ್ರ ಖಿನ್ನತೆ |
| 20 to 27<br>೨೦ ರಿಂದ ೨೭  | Severe depression<br>ತೀವ್ರ ಖಿನ್ನತೆ                  |

SECTION C / ವಿಭಾಗ ಇ

H.I.V. RISK BEHAVIOUR SCALE / ಎಚ್.ಐ.ವಿ. ಪ್ರಮಾದ ನಡವಳಿಕೆ ಮಾಪನ

| DRUG USE / ಮಾದಕದ್ರವ್ಯ ಬಳಕೆ                                                                                                                                                                                                  |                                                                                                                                                           |                             |                                                                   |                                                               |                                      |                                                                  |                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------|
|                                                                                                                                                                                                                             |                                                                                                                                                           | Not at all /<br>ಇಲ್ಲವೇ ಇಲ್ಲ | Once or<br>fewer a<br>week /<br>ವಾರಕ್ಕೊಮ್ಮೆ<br>ಅಥವಾ ಇನ್ನು<br>ವಿಳರ | More than<br>once a<br>week /<br>ವಾರಕ್ಕೆ<br>ಒಮ್ಮಿಗಿಂತ<br>ಅಧಿಕ | Once a<br>day /<br>ದಿನಕ್ಕೊಮ್ಮೆ       | Twice or<br>thrice a<br>day /<br>ದಿನಕ್ಕೆ<br>ಎರಡು<br>ಮೂರು<br>ಬಾರಿ | More<br>than<br>thrice a<br>day /<br>ದಿನಕ್ಕೆ<br>ಮೂರು<br>ಕ್ಕಿಂತ<br>ಅಧಿಕ |
| 1 /<br>೧                                                                                                                                                                                                                    | How many times have you<br>hit up (i.e., injected any<br>drugs) in the last month?<br><br>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ನೀವು ಎಷ್ಟು ಬಾರಿ<br>ಮಾದಕ ವ್ಯಸನವನ್ನು ಚುಚ್ಚಿದ್ದೀರಿ? | 0 / ೦                       | 1 / ೧                                                             | 2 / ೨                                                         | 3 / ೩                                | 4 / ೪                                                            | 5 / ೫                                                                  |
| <p>If the subject hasn't injected in the last month, score zero for the drug use section, and go to question 7.</p> <p>ಪ್ರಯೋಗಾರ್ಥಿ ಕಳೆದ ತಿಂಗಳು ಚುಚ್ಚುಮದ್ದು ಹಾಕದಿದ್ದರೆ ಔಷಧ ಬಳಕೆ ವಿಭಾಗಕ್ಕೆ ಶೂನ್ಯ ಹಾಕಿ ಪ್ರಶ್ನೆ ೭ಕ್ಕೆ ಹೋಗಿ.</p> |                                                                                                                                                           |                             |                                                                   |                                                               |                                      |                                                                  |                                                                        |
|                                                                                                                                                                                                                             |                                                                                                                                                           | Never /<br>ಇಲ್ಲವೇ ಇಲ್ಲ      | Once /<br>ಒಮ್ಮೆ                                                   | Twice /<br>ಎರಡು ಬಾರಿ                                          | 3 to 5<br>times /<br>೩ರಿಂದ ೫<br>ಬಾರಿ | 6 to 10<br>times /<br>೬ರಿಂದ<br>೧೦ ಬಾರಿ                           | More<br>than 10<br>times /<br>೧೦ಕ್ಕಿಂತ<br>ಲೂ<br>ಅಧಿಕ<br>ಬಾರಿ           |

|       |                                                                                                                                                                                                               |                        |                        |                        |                                 |                                  |                                                |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|------------------------|---------------------------------|----------------------------------|------------------------------------------------|
| 2 / 9 | <p><b>How many times in the last month have you used the same needle after someone else had already used it?</b></p> <p>ೇರೆಯವರು ಈಗಾಗಲೇ ಬಳಸಿದ ನಂತರ ನೀವು ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ಎಷ್ಟು ಾರಿ ಅದೇ ಸೂಜಿಯನ್ನು ಬಳಸಿದ್ದೀರಿ?</p> | 0 / 0                  | 1 / 0                  | 2 / 9                  | 3 / 2                           | 4 / 4                            | 5 / 8                                          |
|       |                                                                                                                                                                                                               | None /<br>ಇಲ್ಲವೇ ಇಲ್ಲ  | One person /<br>ಒಬ್ಬರು | Two people /<br>ಇಬ್ಬರು | 3 to 5 people /<br>3ರಿಂದ 5 ಜನರು | 6 to 10 people /<br>6ರಿಂದ 10 ಜನ  | More than 10 people /<br>10ಕ್ಕಿಂತ ಲಾ ಅಧಿಕ ಜನರು |
| 3 / 2 | <p><b>How many different people have used the same needle before you in the last month?</b></p> <p>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ನಿಮ್ಮ ಮುಂದೆ ಎಷ್ಟು ವಿಭಿನ್ನ ಜನರು ಒಂದೇ ಸೂಜಿಯನ್ನು ಬಳಸಿದ್ದಾರೆ?</p>                               | 0 / 0                  | 1 / 0                  | 2 / 9                  | 3 / 2                           | 4 / 4                            | 5 / 8                                          |
|       |                                                                                                                                                                                                               | Never /<br>ಇಲ್ಲವೇ ಇಲ್ಲ | Once /<br>ಒಮ್ಮೆ        | Twice /<br>ಎರಡು ಬಾರಿ   | 3 to 5 times /<br>3ರಿಂದ 5 ಬಾರಿ  | 6 to 10 times /<br>6ರಿಂದ 10 ಬಾರಿ | More than 10 times /<br>10ಕ್ಕಿಂತ ಲಾ            |

|          |                                                                                                                                                                                     |                                   |                        |                     |                            |                  | ಅಧಿಕ<br>ಬಾರಿ              |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|---------------------|----------------------------|------------------|---------------------------|
| 4 /<br>೪ | <p>How many times in the last month has someone used the same needle after you have used it?</p> <p>ನೀವು ಬಳಸಿದ ನಂತರ ಅದೇ ಸೂಜಿಯನ್ನು ಯಾರಾದರೂ ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ಎಷ್ಟು ಬಾರಿ ಬಳಸಿದ್ದಾರೆ?</p> | 0 / ೦                             | 1 / ೧                  | 2 / ೨               | 3 / ೩                      | 4 / ೪            | 5 / ೫                     |
|          |                                                                                                                                                                                     | Don't reuse /<br>ಮರುಉಪಯೋಗ<br>ಇಲ್ಲ | Every time<br>/<br>ಸದಾ | Often /<br>ಹಲವೊಮ್ಮೆ | Sometime<br>/<br>ಕೆಲವೊಮ್ಮೆ | Rarely /<br>ವಿರಳ | Never /<br>ಇಲ್ಲವೇ<br>ಇಲ್ಲ |
| 5 /<br>೫ | <p>How often in the last month have you cleaned needles before re-using them?</p> <p>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ಸೂಜಿಗಳನ್ನು ಮರುಬಳಕೆ ಮಾಡುವ ಮೊದಲು ನೀವು ಎಷ್ಟು ಬಾರಿ ಸ್ವಚ್ಛಗೊಳಿಸಿದ್ದೀರಿ?</p>          | 0 / ೦                             | 1 / ೧                  | 2 / ೨               | 3 / ೩                      | 4 / ೪            | 5 / ೫                     |
|          |                                                                                                                                                                                     | Don't reuse /<br>ಮರುಉಪಯೋಗ<br>ಇಲ್ಲ | Every time<br>/<br>ಸದಾ | Often /<br>ಹಲವೊಮ್ಮೆ | Sometime<br>/<br>ಕೆಲವೊಮ್ಮೆ | Rarely /<br>ವಿರಳ | Never /<br>ಇಲ್ಲವೇ<br>ಇಲ್ಲ |
| 6 /<br>೬ | <p>Before using needles again, how often in the last month did you use bleach to clean them?</p>                                                                                    | 0 / ೦                             | 1 / ೧                  | 2 / ೨               | 3 / ೩                      | 4 / ೪            | 5 / ೫                     |

|                                                          |                                                                                                                                                                             |                                                 |                                   |                                   |                                            |                                            |                                                           |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------------------------------------------|--------------------------------------------|-----------------------------------------------------------|
|                                                          | <p>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ಸೂಜಿಗಳನ್ನು</p> <p>ಮತ್ತೆ ಬಳಸುವ ಮೊದಲು</p> <p>ಅವುಗಳನ್ನು ಸ್ವಚ್ಛಗೊಳಿಸಲು ನೀವು</p> <p>ಎಷ್ಟು ಬಾರಿ ಬ್ಲೀಚ್‌ಅನ್ನು</p> <p>ಬಳಸಿದ್ದೀರಿ?</p>                             |                                                 |                                   |                                   |                                            |                                            |                                                           |
| <p>Drugs use subtotal</p> <p>ಮಾದಕದ್ರವ್ಯ ಬಳಕೆ ಉಪಮೊತ್ತ</p> |                                                                                                                                                                             |                                                 |                                   |                                   |                                            |                                            |                                                           |
| SEXUAL BEHAVIOUR / ಲೈಂಗಿಕ ನಡವಳಿಕೆ                        |                                                                                                                                                                             |                                                 |                                   |                                   |                                            |                                            |                                                           |
|                                                          |                                                                                                                                                                             | <p>None /</p> <p>ಇಲ್ಲವೇ ಇಲ್ಲ</p>                | <p>One person /</p> <p>ಒಬ್ಬರು</p> | <p>Two people /</p> <p>ಇಬ್ಬರು</p> | <p>3 to 5 people /</p> <p>೩ರಿಂದ ೫ ಜನರು</p> | <p>6 to 10 people /</p> <p>೬ರಿಂದ ೧೦ ಜನ</p> | <p>More than 10 people /</p> <p>೧೦ಕ್ಕಿಂತ ಲೂ ಅಧಿಕ ಜನರು</p> |
| <p>7 /</p> <p>೭</p>                                      | <p>How many people, including clients, have you had sex with in the last month?</p> <p>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ಗ್ರಾಹಕರು ಸೇರಿದಂತೆ ಎಷ್ಟು ಜನರೊಂದಿಗೆ ನೀವು ಲೈಂಗಿಕ ಕ್ರಿಯೆ ನಡೆಸಿದ್ದೀರಿ?</p> | <p>0 / ೦</p>                                    | <p>1 / ೧</p>                      | <p>2 / ೨</p>                      | <p>3 / ೩</p>                               | <p>4 / ೪</p>                               | <p>5 / ೫</p>                                              |
|                                                          |                                                                                                                                                                             | <p>No regular partner /</p> <p>ನಿತ್ಯ ಸಂಗಾತಿ</p> | <p>Every time /</p> <p>ಸದಾ</p>    | <p>Often /</p> <p>ಹಲವೊಮ್ಮೆ</p>    | <p>Sometime /</p> <p>ಕೆಲವೊಮ್ಮೆ</p>         | <p>Rarely /</p> <p>ವಿರಳ</p>                | <p>Never /</p> <p>ಇಲ್ಲವೇ</p>                              |

|          |                                                                                                                                                                                                                    | ಇಲ್ಲ                                                    |                                |                                |                                    |                             | ಇಲ್ಲ                              |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------|--------------------------------|------------------------------------|-----------------------------|-----------------------------------|
| 8 /<br>ಲ | <p>How often have you used condoms when having sex with your regular partner(s) in the last month?</p> <p>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ನಿಮ್ಮ ನಿತ್ಯ ಸಂಗಾತಿ(ಗಳ) ಜೊತೆ ಲೈಂಗಿಕ ಕ್ರಿಯೆ ನಡೆಸುವಾಗ ನೀವು ಎಷ್ಟು ಬಾರಿ ಕಾಂಡಮ್ ಬಳಸಿದ್ದೀರಿ?</p> | 0 / 0                                                   | 1 / 0                          | 2 / 9                          | 3 / ೩                              | 4 / ೪                       | 5 / ೫                             |
|          |                                                                                                                                                                                                                    | <p>No casual partner /</p> <p>ನೈಮಿತ್ತಿಕ ಸಂಗಾತಿ ಇಲ್ಲ</p> | <p>Every time /</p> <p>ಸದಾ</p> | <p>Often /</p> <p>ಹಲವೊಮ್ಮೆ</p> | <p>Sometime /</p> <p>ಕೆಲವೊಮ್ಮೆ</p> | <p>Rarely /</p> <p>ವಿರಳ</p> | <p>Never /</p> <p>ಇಲ್ಲವೇ ಇಲ್ಲ</p> |
| 9 /<br>಼ | <p>How often did you use condoms when you had sex with casual partners?</p> <p>ನೀವು ನೈಮಿತ್ತಿಕ ಪಾಲುದಾರರೊಂದಿಗೆ ಲೈಂಗಿಕ ಕ್ರಿಯೆ ನಡೆಸಿದಾಗ ಎಷ್ಟು ಬಾರಿ ಕಾಂಡೋಮ್ ಬಳಸಿದ್ದೀರಿ?</p>                                             | 0 / 0                                                   | 1 / 0                          | 2 / 9                          | 3 / ೩                              | 4 / ೪                       | 5 / ೫                             |
|          |                                                                                                                                                                                                                    | <p>No paid sex /</p> <p>ಹಣಕ್ಕೆ ಮಾಡೆನು</p>               | <p>Every time /</p> <p>ಸದಾ</p> | <p>Often /</p> <p>ಹಲವೊಮ್ಮೆ</p> | <p>Sometime /</p> <p>ಕೆಲವೊಮ್ಮೆ</p> | <p>Rarely /</p> <p>ವಿರಳ</p> | <p>Never /</p> <p>ಇಲ್ಲವೇ ಇಲ್ಲ</p> |
| 10 /     | <p>How often have you used condoms when you have</p>                                                                                                                                                               | 0 / 0                                                   | 1 / 0                          | 2 / 9                          | 3 / ೩                              | 4 / ೪                       | 5 / ೫                             |

|                                                                                                                          |                                                                                                                                      |                        |                 |                      |                                      |                                        |                                                              |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|----------------------|--------------------------------------|----------------------------------------|--------------------------------------------------------------|
| ೧೦                                                                                                                       | <p>been paid for sex in the last month?</p> <p>ಳೆದ ತಿಂಗಳಲ್ಲಿ ಲೈಂಗಿಕತೆಗಾಗಿ ನಿಮಗೆ ಹಣ ಪಾವತಿಸಿದಾಗ ನೀವು ಎಷ್ಟು ಬಾರಿ ಕಾಂಡಮ್ ಬಳಸಿದ್ದೀರಿ?</p> |                        |                 |                      |                                      |                                        |                                                              |
|                                                                                                                          |                                                                                                                                      | Never /<br>ಇಲ್ಲವೇ ಇಲ್ಲ | Once /<br>ಒಮ್ಮೆ | Twice /<br>ಎರಡು ಬಾರಿ | 3 to 5<br>times /<br>೩ರಿಂದ ೫<br>ಬಾರಿ | 6 to 10<br>times /<br>೬ರಿಂದ<br>೧೦ ಬಾರಿ | More<br>than 10<br>times /<br>೧೦ಕ್ಕಿಂತ<br>ಲೂ<br>ಅಧಿಕ<br>ಬಾರಿ |
| 11<br>/<br>೧೧                                                                                                            | <p>How many times did you have anal sex in the last month?</p> <p>ಕಳೆದ ತಿಂಗಳಲ್ಲಿ ನೀವು ಎಷ್ಟು ಬಾರಿ ಗುದ ಸಂಭೋಗ ಮಾಡಿದ್ದೀರಿ?</p>           | 0 / ೦                  | 1 / ೧           | 2 / ೨                | 3 / ೩                                | 4 / ೪                                  | 5 / ೫                                                        |
| <p><b>Sexual behaviour subtotal</b></p> <p>ಲೈಂಗಿಕ ನಡವಳಿಕೆ ಉಪಮೊತ್ತ</p>                                                    |                                                                                                                                      |                        |                 |                      |                                      |                                        |                                                              |
| <p><b>Total (drug use + sexual behaviour subtotals)</b></p> <p>ಮೊತ್ತ = (ಮಾದಕದ್ರವ್ಯ ಬಳಕೆ + ಲೈಂಗಿಕ ನಡವಳಿಕೆ ಉಪಮೊತ್ತಗಳು)</p> |                                                                                                                                      |                        |                 |                      |                                      |                                        |                                                              |

SECTION D / ವಿಭಾಗ ಈ

LGBT MINORITY STRESS MEASURE / ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಅಲ್ಪಸಂಖ್ಯಾತ ಒತ್ತಡ ಮಾಪನ

**Instructions:** please read each statement carefully and then indicate how frequently the situation described occurs in your life or how much you agree or disagree with the statement.

ಸೂಚನೆಗಳು: ದಯವಿಟ್ಟು ಪ್ರತಿ ಹೇಳಿಕೆಯನ್ನು ಎಚ್ಚರಿಕೆಯಿಂದ ಓದಿರಿ, ನಂತರ ವಿವರಿಸಿದ ಪರಿಸ್ಥಿತಿಯು ನಿಮ್ಮ ಜೀವನದಲ್ಲಿ ಎಷ್ಟು ಬಾರಿ ಸಂಭವಿಸುತ್ತದೆ ಅಥವಾ ಹೇಳಿಕೆಯನ್ನು ನೀವು ಎಷ್ಟು ಒಪ್ಪುತ್ತೀರಿ ಅಥವಾ ಒಪ್ಪಿರಿ ಎಂಬುದನ್ನು ಸೂಚಿಸಿ.

**Scoring:** The measure is scored by averaging all items. The total scores can range from 1 to 5, higher scores indicating greater LGBT minority stress.

ಶ್ರೇಣೀಕರಣ: ಎಲ್ಲಾ ಅಂಶಗಳನ್ನು ಸರಾಸರಿ ಮಾಡುವ ಮೂಲಕ ಅಳತೆಯನ್ನು ಶ್ರೇಣೀಕರಿಸಲಾಗುವುದು. ಒಟ್ಟು ಅಂಕವು ೧ರಿಂದ ೫ರವರೆಗೆ ಇರುವುದು; ಹೆಚ್ಚಿನ ಅಂಕವು ಹೆಚ್ಚಿನ ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಅಲ್ಪಸಂಖ್ಯಾತ ಒತ್ತಡವನ್ನು ಸೂಚಿಸುತ್ತದೆ

|                                 |                                                                                                                                        | Never happens<br>(1)<br><br>ಎಂದಿಗೂ<br>ಆಗದು<br>(೧) | Happens a little<br>(2)<br><br>ಕೆಲವೊಮ್ಮೆ<br>ಆಗುವುದು<br>(೨) | Happens sometimes<br>(3)<br><br>ಹಲವೊಮ್ಮೆ<br>ಆಗುವುದು<br>(೩) | Happens a lot (4)<br><br>ಬಹಳಷ್ಟು<br>ಆಗುವುದು<br>(೪) | Happens all the time (5)<br><br>ಎಲ್ಲ<br>ಸಮಯ<br>ಆಗುವುದು<br>(೫) |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------|
| <b>Discrimination / ತಾರತಮ್ಯ</b> |                                                                                                                                        |                                                   |                                                            |                                                            |                                                    |                                                               |
| 1 / ೧                           | I have been excluded from an organisation (e.g., a religious group, sports team, etc.) because I am LGBT<br><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ |                                                   |                                                            |                                                            |                                                    |                                                               |

|          |                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
|          | ಕಾರಣಕ್ಕಾಗಿ ನನ್ನನ್ನು<br>ಸಂಸ್ಥೆಗಳಿಂದ ಹೊರಗಿಡಲಾಗಿದೆ<br>(ಉದಾ. ಧಾರ್ಮಿಕ ಗುಂಪು,<br>ಕ್ರೀಡಾ ತಂಡ, ಇತ್ಯಾದಿ)                                                                                                                                                                                                                                                    |  |  |  |  |  |
| 2 /<br>9 | <p><b>I have been pressured to receive unnecessary services or been denied service by a</b></p> <p><b>healthcare professional because I am LGBT</b></p> <p>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br/>ಕಾರಣಕ್ಕಾಗಿ ಅನಗತ್ಯ<br/>ಸೇವೆಗಳನ್ನು ಪಡೆಯುವಂತೆ ನನ್ನ<br/>ಮೇಲೆ ಒತ್ತಡ ಹೇರಲಾಗಿದೆ<br/>ಅಥವಾ ಸೇವೆಯನ್ನು<br/>ನಿರಾಕರಿಸಲಾಗಿದೆ</p>                                           |  |  |  |  |  |
| 3 /<br>೩ | <p><b>I have been denied housing or been mistreated by others in my housing organisation (e.g., college dorm, homeowner's association, homeless shelter, etc.) because I am LGBT</b></p> <p>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br/>ಕಾರಣಕ್ಕಾಗಿ ನನ್ನ ವಸತಿ<br/>ಸಂಸ್ಥೆಯಲ್ಲಿ ನನಗೆ ವಸತಿ<br/>ನಿರಾಕರಿಸಲಾಗಿದೆ ಅಥವಾ<br/>ಇತರರಿಂದ ಕೆಟ್ಟದಾಗಿ<br/>ನಡೆಸಿಕೊಳ್ಳಲಾಗಿದೆ (ಉದಾ.</p> |  |  |  |  |  |

|                                  |                                                                                                                                                                                                                                     |  |  |  |  |  |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
|                                  | ಕಾಲೇಜು ವಸತಿ ನಿಲಯ, ಮನೆ<br>ಮಾಲೀಕರ ಸಂಘ, ವಸತಿರಹಿತ<br>ಆಶ್ರಯ, ಇತ್ಯಾದಿ)                                                                                                                                                                    |  |  |  |  |  |
| 4 /<br>೪                         | <b>I have received poor<br/>service at a business<br/>because I am LGBT</b><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br>ಕಾರಣಕ್ಕಾಗಿ ವ್ಯವಹಾರದಲ್ಲಿ<br>ಕಳಪೆ ಸೇವೆಯನ್ನು ಪಡೆದಿದ್ದೇನೆ                                                                      |  |  |  |  |  |
| 5 /<br>೫                         | <b>I am forced to consider<br/>my LGBT identity when I<br/>think about politics</b><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br>ಕಾರಣಕ್ಕಾಗಿ ನಾನು ರಾಜಕೀಯ<br>ವಿಷಯಗಳ ಬಗ್ಗೆ ಯೋಚಿಸುವಾಗ<br>ನನ್ನ ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಗುರುತನ್ನು<br>ಪರಿಗಣಿಸಲು<br>ಒತ್ತಾಯಿಸಲಾಗುತ್ತದೆ |  |  |  |  |  |
| 6 /<br>೬                         | <b>I have been treated<br/>unfairly by supervisors or<br/>teachers because I am<br/>LGBT</b><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br>ಕಾರಣಕ್ಕಾಗಿ ಮೇಲ್ವಿಚಾರಕರು<br>ಅಥವಾ ಶಿಕ್ಷಕರು ನನ್ನನ್ನು<br>ಅನ್ಯಾಯವಾಗಿ<br>ನಡೆಸಿಕೊಂಡಿದ್ದಾರೆ                       |  |  |  |  |  |
| <b>Victimisation / ಬಲಿಪಶುತ್ವ</b> |                                                                                                                                                                                                                                     |  |  |  |  |  |

|         |                                                                                                                                                                                                                                                                      |  |  |  |  |  |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| 7 / ೭   | <p><b>I have been verbally harassed or called names because I am LGBT</b></p> <p>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ ಕಾರಣಕ್ಕಾಗಿ ನನಗೆ ವಾಚಕ ಕಿರುಕುಳ ನೀಡಲಾಗಿದೆ ಅಥವಾ ನಿಂದಿಸಲ್ಪಟ್ಟಿದ್ದೇನೆ</p>                                                                                          |  |  |  |  |  |
| 8 / ೮   | <p><b>I have received unwanted sexual attention or been asked inappropriate questions about my sexual life because I am LGBT</b></p> <p>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ ಕಾರಣಕ್ಕಾಗಿ ನಾನು ಅನಗತ್ಯ ಲೈಂಗಿಕ ಗಮನವನ್ನು ಪಡೆದಿದ್ದೇನೆ ಅಥವಾ ನನ್ನ ಬಗ್ಗೆ ಅನುಚಿತ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗಿದೆ</p> |  |  |  |  |  |
| 9 / ೯   | <p><b>I have been physically attacked because I am LGBT</b></p> <p>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ ಕಾರಣಕ್ಕಾಗಿ ನನ್ನ ಮೇಲೆ ದೈಹಿಕ ಹಲ್ಲೆ ನಡೆಸಲಾಗಿದೆ</p>                                                                                                                            |  |  |  |  |  |
| 10 / ೧೦ | <p><b>My personal property was purposefully damaged by others because I am LGBT</b></p> <p>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ</p>                                                                                                                                                |  |  |  |  |  |

|               |                                                                                                                                                                  |  |  |  |  |  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
|               | ಕಾರಣಕ್ಕಾಗಿ ನನ್ನ ವೈಯಕ್ತಿಕ<br>ಸ್ವತ್ತನ್ನು ಇತರರು<br>ಉದ್ದೇಶಪೂರ್ವಕವಾಗಿ<br>ಹಾನಿಗೊಳಿಸಿದ್ದಾರೆ                                                                             |  |  |  |  |  |
| 11<br>/<br>೧೧ | <b>I have endured unwanted<br/>sexual contact because I<br/>am LGBT</b><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br>ಕಾರಣಕ್ಕಾಗಿ ಅನಗತ್ಯ ಲೈಂಗಿಕ<br>ಸಂಪರ್ಕವನ್ನು<br>ಸಹಿಸಿಕೊಂಡಿದ್ದೇನೆ |  |  |  |  |  |
| 12<br>/<br>೧೨ | <b>Others have threatened to<br/>harm me because I am<br/>LGBT</b><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br>ಕಾರಣಕ್ಕಾಗಿ ಇತರರು ನನಗೆ<br>ಹಾನಿ ಮಾಡುವುದಾಗಿ ಬೆದರಿಕೆ<br>ಹಾಕಿದ್ದಾರೆ   |  |  |  |  |  |
| 13<br>/<br>೧೩ | <b>I have been bullied by<br/>others because I am<br/>LGBT</b><br>ನಾನು ಎಲ್.ಜಿ.ಬಿ.ಟಿ. ಎಂಬ<br>ಕಾರಣಕ್ಕಾಗಿ ನನ್ನನ್ನು ಇತರರು<br>ಬೆದರಿಸಿದ್ದಾರೆ                           |  |  |  |  |  |

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SECTION E / ವಿಭಾಗ ಉ

FOCUS GROUP DISCUSSIONS (QUALITATIVE) / ಗುಂಪು ಚರ್ಚೆ ಸಂದರ್ಶನ (ಗುಣಾತ್ಮಕ)

| DOMAIN                             | SL NO. | QUESTIONS (ENGLISH & KANNADA)                                                                                                                                                   |
|------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Mental Health & Depression      | 1      | <p>What mental health support services are available in your community?</p> <p>ನಿಮ್ಮ ಸಮುದಾಯದಲ್ಲಿ ಲಭ್ಯವಿರುವ ಮಾನಸಿಕ ಆರೋಗ್ಯ ಬೆಂಬಲ ಸೇವೆಗಳೇನು?</p>                                   |
|                                    | 2      | <p>Can you share experiences where mental health concerns were ignored by providers?</p> <p>ಮಾನಸಿಕ ಆರೋಗ್ಯ ಚಿಂತೆಗಳನ್ನು ಸೇವಾ ಒದಗಿಸುವವರು ಕಡೆಗಣಿಸಿದ ಅನುಭವಗಳನ್ನು ಹಂಚಿಕೊಳ್ಳಬಹುದೇ?</p> |
|                                    | 3      | <p>What support systems help you manage depression?</p> <p>ಅವಸಾದವನ್ನು ನಿರ್ವಹಿಸಲು ಯಾವ ಬೆಂಬಲ ವ್ಯವಸ್ಥೆಗಳು ಸಹಾಯ ಮಾಡುತ್ತವೆ?</p>                                                      |
|                                    | 4      | <p>How does your emotional state influence healthcare decisions?</p> <p>ನಿಮ್ಮ ಭಾವನಾತ್ಮಕ ಸ್ಥಿತಿ ಆರೋಗ್ಯ ನಿರ್ಧಾರಗಳಿಗೆ ಹೇಗೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ?</p>                                   |
| 2. Social Support & Discrimination | 5      | <p>What discrimination have you faced from healthcare providers?</p> <p>ಆರೋಗ್ಯ ಸೇವಾ ಒದಗಿಸುವವರಿಂದ ನೀವು ಯಾವ ಭೇದಭಾವಕ್ಕೆ ಒಳಗಾಗಿದ್ದೀರಿ?</p>                                          |

|                                   |    |                                                                                                                                              |
|-----------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | 6  | <p><b>How does stigma affect your access to healthcare?</b></p> <p>ಕಳಂಕವು ನಿಮ್ಮ ಆರೋಗ್ಯ ಸೇವೆಗಳ ಪ್ರವೇಶಕ್ಕೆ ಹೇಗೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ?</p>          |
|                                   | 7  | <p><b>What community resources are available for support?</b></p> <p>ಬೆಂಬಲಗಾಗಿ ಲಭ್ಯವಿರುವ ಸಮುದಾಯ ಸಂಪನ್ಮೂಲಗಳೇನು?</p>                           |
| 3. Risk Behaviors & Sexual Health | 8  | <p><b>What challenges exist in accessing sexual health services?</b></p> <p>ಲೈಂಗಿಕ ಆರೋಗ್ಯ ಸೇವೆಗಳನ್ನು ಪಡೆಯಲು ಯಾವ ಸವಾಲುಗಳಿವೆ?</p>              |
|                                   | 9  | <p><b>What support systems help manage high-risk behaviors?</b></p> <p>ಹೆಚ್ಚು ಅಪಾಯಕಾರಿ ನಡೆಯಿಕೆಗಳನ್ನು ನಿರ್ವಹಿಸಲು ಯಾವ ಬೆಂಬಲ ವ್ಯವಸ್ಥೆಗಳಿವೆ?</p> |
|                                   | 10 | <p><b>What barriers exist to practicing safe sexual behaviors?</b></p> <p>ಸುರಕ್ಷಿತ ಲೈಂಗಿಕ ನಡೆಯಿಕೆಗಳನ್ನು ಅಭ್ಯಾಸಿಸಲು ಯಾವ ಅಡ್ಡಿಗಳಿವೆ?</p>       |
| 4. Victimization & Safety         | 11 | <p><b>How does victimization impact your healthcare interactions?</b></p> <p>ಪೀಡನೆಯು ನಿಮ್ಮ ಆರೋಗ್ಯ ಸಂಪರ್ಕಗಳಿಗೆ ಹೇಗೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ?</p>     |

|  |    |                                                                                                                                                                              |
|--|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 12 | <p><b>What support systems exist for dealing with harassment or violence?</b></p> <p>ಹೀಯಿಸುವಿಕೆ ಅಥವಾ ಹಿಂಸೆಯನ್ನು ಎದುರಿಸಲು ಯಾವ ಬೆಂಬಲ ವ್ಯವಸ್ಥೆಗಳಿವೆ?</p>                        |
|  | 13 | <p><b>How does fear of discrimination affect your healthcare choices?</b></p> <p>ಭೇದಭಾವದ ಭಯವು ನಿಮ್ಮ ಆರೋಗ್ಯ ಆಯ್ಕೆಗಳಿಗೆ ಹೇಗೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ?</p>                             |
|  | 14 | <p><b>What measures help you feel safe when seeking healthcare?</b></p> <p>ಆರೋಗ್ಯ ಸೇವೆಗಳನ್ನು ಹುಲಿಗೊಳಿಸಲು ನಿಮಗೆ ಯಾವ ಕ್ರಮಗಳು ಸುರಕ್ಷಿತ ಅನುಭವ ನೀಡುತ್ತವೆ?</p>                     |
|  | 15 | <p><b>How do past traumatic experiences influence current healthcare decisions?</b></p> <p>ಹಿಂದಿನ ಭಾವನಾತ್ಮಕ ಅನುಭವಗಳು ಪ್ರಸ್ತುತ ಆರೋಗ್ಯ ನಿರ್ಧಾರಗಳಿಗೆ ಹೇಗೆ ಪ್ರಭಾವ ಬೀರುತ್ತವೆ?</p> |

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## **ANNEXURE – II**

### **INFORMATION SHEET**

*for participating in the interview for the study of the*

SYNDEMICS OF DEPRESSION, HIGH RISK BEHAVIOURS, VICTIMISATION, AND THEIR ASSOCIATION WITH SEXUALLY TRANSMITTED INFECTIONS AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDERS IN KOLAR: A MIXED-METHOD STUDY

Dr G. Mohan Babu

Department of Community Medicine,

Devaraj Urs Medical College, Kolar

Cell: 9943992112

#### **ABSTRACT**

*Men who have sex with men (MSM) and the transgender (TG) community in India, as in most countries, are disproportionately affected by the HIV epidemic. Among the MSM and TG population, one particularly disturbing consequence due to victimisation and depression is engaging in behaviours such as substance abuse and sexual activities that put oneself at the risk of HIV infections.*

This study is being carried out to research HIV-related risks among MSM and TG in Kolar. This study has been reviewed by the local ethical review board and has been started upon its approval.

#### **DISCLOSURE**

This study seeks to find out the association of psycho-social habits with HIV with the following questionnaire. You are free to skip any question which you do not wish to answer. However, your honest answers to these questions will help accurately understand the current situation. We greatly appreciate your help in responding to the questionnaire.

Participation in this study does not incur you any monetary cost. This study is not only beneficial for you but also to the community at large. The results arrived at from this study will be beneficial in informing policymakers.

All information collected from you will be strictly confidential and will not be disclosed to any outsider unless compelled by law. The information collected will be used only for research.

There is no compulsion to participate in this study. You will be in no way affected if you do not wish to participate in this study. You are required to sign only if you *voluntarily agree* to participate in this study. Further, you are at liberty to withdraw from the study at any time you so wish. The decision to participate in this study is solely up to you.

This document will be stored in a safe locked in the Department of Community Medicine, Devaraj Urs Medical College, Kolar, and a copy of this document will be provided to you for your records.

For further clarification, please feel free to contact the principal investigator at the aforementioned cell phone number.

ಮಾಹಿತಿ ಪತ್ರ

ಖಿನ್ನತೆ, ಅಪಾಯಕಾರಿ ನಡವಳಿಕೆ, ಮತ್ತು ಬಲಿಪಶುತ್ವಗಳ ಸಮನ್ವಿತ ಉಲ್ಬಣ ಹಾಗೂ ಕೋಲಾರದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪುರುಷರಲ್ಲಿ ಮತ್ತು ಮಂಗಳಮುಶಿಯರಲ್ಲಿ ಹರಡುವ ಲೈಂಗಿಕ ಸೋಂಕುಗಳೊಡೆ ಅವುಗಳ ಸಂಬಂಧಗಳು: ಒಂದು ಸಂಯುಕ್ತ ಅಧ್ಯಯನ

ಡಾ. ಜಿ. ಮೋಹನ್ ಬಾಬು

ಸಾಮುದಾಯಿಕ ಚಿಕಿತ್ಸಾ ವಿಭಾಗ,

ದೇವರಾಜ ಅರಸು ವೈದ್ಯಕೀಯ ಕಾಲೇಜು, ಕೋಲಾರ

ದೂ: ೯೯೪೩೯೯೨೧೧೨

**ಸಂಕ್ಷೇಪ**

ಹಲವು ದೇಶಗಳಂತೆ ಭಾರತದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪರುಷ ಮತ್ತು ಮಂಗಳಮುಖಿ ಸಮುದಾಯಗಳು ಎಚ್.ಐ.ವಿ.ಯ ಸಾಂಕ್ರಮಿಕೆಯ ಪರಿಣಾಮಗಳನ್ನು ಅಪಪ್ರಮಾಣದಲ್ಲಿ ಎದುರಿಸುತ್ತಿರುವವು. ಸಲ್ಫಿಂಗಿಕ ಪರುಷ ಮತ್ತು ಮಂಗಳಮುಖಿ ಸಮುದಾಯಗಳಲ್ಲಿ ಖಿನ್ನತೆ ಮತ್ತು ಬಲಿಪಶುತ್ವಗಳ ಕಳವಳಕಾರಕ ಪರಿಣಾಮಗಳು ಮಾದಕ ವ್ಯಸನವು ಹಾಗೂ ಎಚ್.ಐ.ವಿ. ಸೋಂಕಿನ ಅಪಾಯಕ್ಕೆ ಒಳಗಾಗುವ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆಗಳಲ್ಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುವುದು.

ಈ ಅಧ್ಯಯನವು ಕೋಲಾರದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪರುಷ ಮತ್ತು ಮಂಗಳಮುಖಿಯರಲ್ಲಿ ಎಚ್.ಐ.ವಿ. ಸಂಬಂಧಿತ ಅಪಾಯಗಳನ್ನು ಪರಿಶೀಲಿಸಲು ಕೈಗೊಳ್ಳಲಾಗಿದೆ. ಈ ಅಧ್ಯಯನವನ್ನು ಸ್ಥಳೀಯ ನೈತಿಕ ಪರಿಶೀಲನಾ ಮಂಡಳಿಯು ಪರಿಶೀಲಿಸಿದೆ, ಮತ್ತು ಅದರ ಅನುಮೋದನೆಯ ಮೇರೆಗೆ ಪ್ರಾರಂಭಿಸಲಾಗಿದೆ.

**ಪ್ರಕಟಣೆ**

ಎಚ್.ಐ.ವಿ. ಸಂಬಂಧಿತ ಮಾನಸಿಕ-ಸಾಮಾಜಿಕ ಅಭ್ಯಾಸಗಳನ್ನು ಪರಿಶೀಲಿಸಲು ಈ ಅಧ್ಯಯನವು ಕೆಳಗಿನ ಪ್ರಶ್ನಾವಳಿಯನ್ನು ಸಿದ್ಧಪಡಿಸಿದೆ. ನೀವು ಉತ್ತರಿಸಲು ಬಯಸದ ಯಾವುದೇ ಪ್ರಶ್ನೆಯನ್ನು ಉತ್ತರಿಸಬೇಕಾಗಿಲ್ಲ. ಆದರೆ ನೀವು ಉತ್ತರಿಸುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ತಮ್ಮ ಪ್ರಾಮಾಣಿಕ ಉತ್ತರಗಳು ಪ್ರಸ್ತುತ ಪರಿಸ್ಥಿತಿಯನ್ನು ನಿಖರವಾಗಿ ಅರ್ಥಮಾಡಿಕೊಳ್ಳಲು ನೆರವಾಗುವವು. ಈ ಪ್ರಶ್ನಾವಳಿಯಲ್ಲಿ ಪ್ರತಿಕ್ರಿಯಿಸುವುದರೊಂದಿಗೆ ತಮ್ಮ ನೆರೆಗೆ ಧನ್ಯವಾದಗಳು.

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ತಮಗೆ ಯಾವುದೇ ಹಣವೆಚ್ಚವಿಲ್ಲ. ಈ ಅಧ್ಯಯನವು ಕೇವಲ ತಮಗಲ್ಲದೆ ಸಾಮಾನ್ಯವಾಗಿ ಸಮುದಾಯಕ್ಕೂ ಉಪಯುಕ್ತವು. ಈ ಅಧ್ಯಯನದಲಗಲ್ಲಿ ಗಮನಿಸಲಾಗುವ ಫಲಿತಾಂಶಗಳು ನಿರ್ಣಾಯಕರಿಗೆ ತಿಳಿಸುವಲ್ಲಿ ಪ್ರಯೋಜನಕಾರಿಯು.

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ನಿಮ್ಮಿಂದ ಸಂಗ್ರಹಿಸಲಾದ ಎಲ್ಲಾ ಮಾಹಿತಿಯು ಕಟ್ಟುನಿಟ್ಟಾಗಿ ಗೌಪ್ಯವಾಗಿರುತ್ತದೆ, ಮತ್ತು ಕಾನೂನಿನ ಹಕ್ಕನ್ನು/ಒತ್ತಾಯವನ್ನು ಹೊರತು ಯಾವುದೇ ಹೊರಗಿನವರಿಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ. ಈ ಪ್ರಶ್ನಾವಳಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಲಾಗುವ ಮಾಹಿತಿಯನ್ನು ಕೇವಲ ಸಂಶೋಧನೆಗೆ ಬಳಸಲಾಗುವುದು.

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಯಾವುದೇ ಒತ್ತಾಯವಿಲ್ಲ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಬಯಸದಿರುವುದರಿಂದ ಯಾವುದೇ ರೀತಿಯಲ್ಲಿ ನಿಮಗೆ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ. ನೀವು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಸ್ವಯಂಪ್ರೇರಿತರಾಗಿ ಭಾಗವಹಿಸಲು ಇಚ್ಛಿಸಿದ ಮಾತ್ರದಲ್ಲಿ ಈ ಭಾಗವಹಿಕೆಗೆ ನೀವು ಸಹಿ ಮಾಡಬೇಕಾಗುತ್ತದೆ. ಹಾಗೂ ನೀವು ಬಯಸಿದ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನೀವು ಸ್ವತಂತ್ರರು. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವ ನಿರ್ಧಾರವು ಸಂಪೂರ್ಣವಾಗಿ ನಿಮ್ಮದು.

ಈ ಕಡತವನ್ನು ದೇವರಾಜ ಅರಸು ವೈದ್ಯಕೀಯ ಕಾಲೇಜಿನ ಸಾಮುದಾಯಿಕ ಚಿಕಿತ್ಸಾ ವಿಭಾಗದ ಸುರಕ್ಷಿತವಾಗಿ ಕೀಲಿಸಿದ ಸೆಳೆಗವೊಂದರಲ್ಲಿ ಇಡಲಾಗುವುದು ಮತ್ತು ಇದರ ಪ್ರತಿಯೊಂದನ್ನಯ ನಿಮ್ಮ ದಾಖಲೆಗಳಿಗಾಗಿ ಒದಗಿಸಲಾಗುವುದು.

ಹೆಚ್ಚಿನ ಮಾಹಿತಿಗಾಗಿ ದಯವಿಟ್ಟು ಮೇಲೆ ತಿಳಿಸಿದ ಫೋನ್ ಸಂಖ್ಯೆಯಲ್ಲಿ ಪ್ರಧಾನ ಸಂಶೋಧಕರನ್ನು ಸಂಪರ್ಕಿಸಿರಿ.

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## INFORMED CONSENT FORM

*for participating in the interview for the study of the*

SYNDEMICS OF DEPRESSION, HIGH RISK BEHAVIOURS, VICTIMISATION, AND THEIR ASSOCIATION WITH SEXUALLY TRANSMITTED INFECTIONS AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDERS IN KOLAR: A MIXED-METHOD STUDY

Sl. No. \_\_\_\_\_

I, the undersigned, agree to participate in this study and to undergo counselling and disclosure of my personal information as outlined in this consent form.

I have been read out/explained in my local language, *i.e.*, Kannada, and understand that the purpose of this study and the confidential nature of the information that will be collected and disclosed during the study.

I have had the opportunity to ask questions regarding the various aspects of this study and my questions have been answered to my full satisfaction. The information collected will be used only for research.

I understand that I remain free to withdraw from this study at any time. Participation in this study is under my sole discretion and does not incur me any monetary cost.

\_\_\_\_\_

Date

\_\_\_\_\_

Subject's name and signature/thumb impression

\_\_\_\_\_

Name and signature of Witness 1

\_\_\_\_\_

Name and signature of Witness 2

\_\_\_\_\_

Dr G Mohan Babu, principal investigator and interviewer

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ಸಂದರ್ಶನ ಭಾಗವಹಿಕೆ

ಮಾಹಿತಿ ತಿಳಿವಿಕೆ ಒಪ್ಪಿಗೆ ನಮೂನೆ

ಖಿನ್ನತೆ, ಅಪಾಯಕಾರಿ ನಡವಳಿಕೆ, ಮತ್ತು ಬಲಿಪಶುತ್ವಗಳ ಸಮನ್ವಿತ ಉಲ್ಬಣ ಹಾಗೂ ಕೋಲಾರದಲ್ಲಿ ಸಲ್ಮಂಗಿಕ ಪುರುಷರಲ್ಲಿ ಮತ್ತು ಮಂಗಳಮುಶಿಯರಲ್ಲಿ ಹರಡುವ ಲೈಂಗಿಕ ಸೋಂಕುಗಳೊಡೆ ಅವುಗಳ ಸಂಬಂಧಗಳು: ಒಂದು ಸಂಯುಕ್ತ ಅಧ್ಯಯನ

ಕ್ರ. ಸಂ. \_\_\_\_\_

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು, ಸಂದರ್ಶನ ನೀಡಲು, ಮತ್ತು ಈ ಒಪ್ಪಿಗೆ ನಮೂನೆಯಲ್ಲಿ ವಿವರಿಸಿದಂತೆ ನನ್ನ ವೈಯಕ್ತಿಕ ವಿವರಗಳನ್ನು ನೀಡಲು ಈ ಕೆಳಗೆ ಸಹಿ ಮಾಡಿರುವ ನನಗೆ ಒಪ್ಪಿಗೆ ಇರುವುದು.

ಈ ಅಧ್ಯಯನದ ಉದ್ದೇಶವನ್ನು ಮತ್ತು ಇದರಲ್ಲಿ ಸಂಗ್ರಹಿಲಾಗುವ ಮಾಹಿತಿಯ ಗೌಪ್ಯತೆಯನ್ನು ಮತ್ತು ಪ್ರಕಟಣೆಯನ್ನು ನನಗೆ ಪ್ರಾದೇಶಿಕ ಭಾಷೆಯಾದ ಕನ್ನಡದಲ್ಲಿ ಓದಲಾಗಿದೆ/ವಿವರಿಸಲಾಗಿದೆ.

ಈ ಅಧ್ಯಯನವನ್ನು ಕುರಿತ ವಿವಿಧ ಅಂಶಗಳ ಬಗ್ಗೆ ನನಗೆ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುವ ಅವಕಾಶ ಕೊಡಲಾಗಿದ್ದು ನನ್ನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನನಗೆ ತೃಪ್ತಿಪೂರಕವಾಗಿ ಉತ್ತರಿಸಲಾಗಿದೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಸಂಗ್ರಹಿಲಾಗುವ ಮಾಹಿತಿಯನ್ನು ಕೇವಲ ಅಧ್ಯಯನಕ್ಕೆ ಉಪಯೋಗಿಸಲಾಗುವುದು ಎಂದು ನನಗೆ ತಿಳಿಸಲಾಗಿದೆ.

ನಾನು ಬಯಸಿದ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನಾನು ಸ್ವತಂತ್ರ ಎಂಬುದು ನನಗೆ ತಿಳಿದಿರುವುದು. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನನಗೆ ಯಾವುದೇ ಹಣವೆಚ್ಚವಿಲ್ಲ ಎಂಬುದೂ ನಮಗೆ ತಿಳಿಸಲಾಗಿದೆ, ಹಾಗೂ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಾನು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿ ಭಾಗವಹಿಸಲು ಸಮ್ಮತಿಸಿರುವೆ.

\_\_\_\_\_

ದಿನಾಂಕ

\_\_\_\_\_

ಪ್ರಯೋಗಾಧೀಯ ಹೆಸರು ಮತ್ತು ಸಹಿ/ಹೆಬ್ಬರಳಿನ ಗುರುತು

\_\_\_\_\_

ಹೆಸರು ಮತ್ತು ಸಹಿ, ಸಾಕ್ಷಿ ೧

\_\_\_\_\_

ಹೆಸರು ಮತ್ತು ಸಹಿ, ಸಾಕ್ಷಿ ೨

\_\_\_\_\_

ಡಾ. ಜಿ. ಮೋಹನ್ ಬಾಬು, ಪ್ರಧಾನ ಸಂಶೋಧಕರು ಹಾಗೂ ಸಂದರ್ಶಕರು

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## **INFORMATION SHEET**

*for participating in focus group discussion for the study of the*

**SYNDEMICS OF DEPRESSION, HIGH RISK BEHAVIOURS, VICTIMISATION, AND THEIR ASSOCIATION WITH SEXUALLY TRANSMITTED INFECTIONS AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDERS IN KOLAR: A MIXED-METHOD STUDY**

Dr G. Mohan Babu

Department of Community Medicine,

Devaraj Urs Medical College, Kolar

Cell: 9943992112

### **ABSTRACT**

*Men who have sex with men (MSM) and the transgender (TG) community in India, as in most countries, are disproportionately affected by the HIV epidemic. Among the MSM and TG population, one particularly disturbing consequence due to victimisation and depression is engaging in behaviours such as substance abuse and sexual activities that put oneself at the risk of HIV infections.*

This study is being carried out to research HIV-related risks among MSM and TG in Kolar. This study has been reviewed by the local ethical review board and has been started upon its approval.

### **DISCLOSURE**

This study seeks to find out the association of psycho-social habits with HIV with the following questionnaire. You are free to skip any question which you do not wish to answer. However, your honest answers to these questions will help accurately understand the current situation. We greatly appreciate your participation in this focus group discussion; *this participation will be audio recorded.*

Participation in this study does not incur you any monetary cost. This study is not only beneficial for you but also to the community at large. The results arrived at from this study will be beneficial in informing policymakers.

All information collected from you will be strictly confidential and will not be disclosed to any outsider unless compelled by law. The information collected will be used only for research.

There is no compulsion to participate in this study. You will be in no way affected if you do not wish to participate in this study. You are required to sign only if you *voluntarily agree* to participate in this study. Further, you are at liberty to withdraw from the study at any time you so wish. The decision to participate in this study is solely up to you.

This document will be stored in a safe locked in the Department of Community Medicine, Devaraj Urs Medical College, Kolar, and a copy of this document will be provided to you for your records.

For further clarification, please feel free to contact the principal investigator at the aforementioned cell phone number.

ಮಾಹಿತಿ ಪತ್ರ

ಖಿನ್ನತೆ, ಅಪಾಯಕಾರಿ ನಡವಳಿಕೆ, ಮತ್ತು ಬಲಿಪಶುತ್ವಗಳ ಸಮನ್ವಿತ ಉಲ್ಬಣ ಹಾಗೂ ಕೋಲಾರದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪುರುಷರಲ್ಲಿ ಮತ್ತು ಮಂಗಳಮುಖಿಯರಲ್ಲಿ ಹರಡುವ ಲೈಂಗಿಕ ಸೋಂಕುಗಳೊಡೆ ಅವುಗಳ ಸಂಬಂಧಗಳು: ಒಂದು ಸಂಯುಕ್ತ ಅಧ್ಯಯನ

ಡಾ. ಜಿ. ಮೋಹನ್ ಬಾಬು

ಸಾಮುದಾಯಿಕ ಚಿಕಿತ್ಸಾ ವಿಭಾಗ,

ದೇವರಾಜ ಅರಸು ವೈದ್ಯಕೀಯ ಕಾಲೇಜು, ಕೋಲಾರ

ದೂ: ೯೯೪೩೯೯೨೦೦೨

**ಸಂಕ್ಷೇಪ**

ಹಲವು ದೇಶಗಳಂತೆ ಭಾರತದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪರುಷ ಮತ್ತು ಮಂಗಳಮುಖಿ ಸಮುದಾಯಗಳು ಎಚ್.ಐ.ವಿ.ಯ ಸಾಂಕ್ರಮಿಕೆಯ ಪರಿಣಾಮಗಳನ್ನು ಅಪಪ್ರಮಾಣದಲ್ಲಿ ಎದುರಿಸುತ್ತಿರುವವು. ಸಲ್ಫಿಂಗಿಕ ಪರುಷ ಮತ್ತು ಮಂಗಳಮುಖಿ ಸಮುದಾಯಗಳಲ್ಲಿ ಖಿನ್ನತೆ ಮತ್ತು ಬಲಿಪಶುತ್ವಗಳ ಕಳವಳಕಾರಕ ಪರಿಣಾಮಗಳು ಮಾದಕ ವ್ಯಸನವು ಹಾಗೂ ಎಚ್.ಐ.ವಿ. ಸೋಂಕಿನ ಅಪಾಯಕ್ಕೆ ಒಳಗಾಗುವ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆಗಳಲ್ಲಿ ತೊಡಗಿಸಿಕೊಳ್ಳುವುದು.

ಈ ಅಧ್ಯಯನವು ಕೋಲಾರದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪರುಷ ಮತ್ತು ಮಂಗಳಮುಖಿಯರಲ್ಲಿ ಎಚ್.ಐ.ವಿ. ಸಂಬಂಧಿತ ಅಪಾಯಗಳನ್ನು ಪರಿಶೀಲಿಸಲು ಕೈಗೊಳ್ಳಲಾಗಿದೆ. ಈ ಅಧ್ಯಯನವನ್ನು ಸ್ಥಳೀಯ ನೈತಿಕ ಪರಿಶೀಲನಾ ಮಂಡಳಿಯು ಪರಿಶೀಲಿಸಿದೆ, ಮತ್ತು ಅದರ ಅನುಮೋದನೆಯ ಮೇರೆಗೆ ಪ್ರಾರಂಭಿಸಲಾಗಿದೆ.

**ಪ್ರಕಟಣೆ**

ಎಚ್.ಐ.ವಿ. ಸಂಬಂಧಿತ ಮಾನಸಿಕ-ಸಾಮಾಜಿಕ ಅಭ್ಯಾಸಗಳನ್ನು ಪರಿಶೀಲಿಸಲು ಈ ಅಧ್ಯಯನವು ಕೆಳಗಿನ ಪ್ರಶ್ನಾವಳಿಯನ್ನು ಸಿದ್ಧಪಡಿಸಿದೆ. ನೀವು ಉತ್ತರಿಸಲು ಬಯಸದ ಯಾವುದೇ ಪ್ರಶ್ನೆಯನ್ನು ಉತ್ತರಿಸಬೇಕಾಗಿಲ್ಲ. ಆದರೆ ನೀವು ಉತ್ತರಿಸುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ತಮ್ಮ ಪ್ರಾಮಾಣಿಕ ಉತ್ತರಗಳು ಪ್ರಸ್ತುತ ಪರಿಸ್ಥಿತಿಯನ್ನು ನಿಖರವಾಗಿ ಅರ್ಥಮಾಡಿಕೊಳ್ಳಲು ನೆರವಾಗುವವು. ಈ ಪ್ರಶ್ನಾವಳಿಯಲ್ಲಿ ಪ್ರತಿಕ್ರಿಯಿಸುವುದರೊಂದಿಗೆ ತಮ್ಮ ನೆರೆಗೆ ಧನ್ಯವಾದಗಳು. ಈ ಭಾಗವಹಿಸುವಿಕೆಯನ್ನು ಧ್ವನಿ ರೆಕಾರ್ಡ್ ಮಾಡಲಾಗುವುದು.

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ತಮಗೆ ಯಾವುದೇ ಹಣವೆಚ್ಚವಿಲ್ಲ. ಈ ಅಧ್ಯಯನವು ಕೇವಲ ತಮಗಲ್ಲದೆ ಸಾಮಾನ್ಯವಾಗಿ ಸಮುದಾಯಕ್ಕೂ ಉಪಯುಕ್ತವು. ಈ ಅಧ್ಯಯನದಲಲ್ಲಿ ಗಮನಿಸಲಾಗುವ ಫಲಿತಾಂಶಗಳು ನಿರ್ಣಾಯಕರಿಗೆ ತಿಳಿಸುವಲ್ಲಿ ಪ್ರಯೋಜನಕಾರಿಯು.

ನಿಮ್ಮಿಂದ ಸಂಗ್ರಹಿಸಲಾದ ಎಲ್ಲಾ ಮಾಹಿತಿಯು ಕಟ್ಟುನಿಟ್ಟಾಗಿ ಗೌಪ್ಯವಾಗಿರುತ್ತದೆ, ಮತ್ತು ಕಾನೂನಿನ ಹಕ್ಕನ್ನು/ಒತ್ತಾಯವನ್ನು ಹೊರತು ಯಾವುದೇ ಹೊರಗಿನವರಿಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ. ಈ ಪ್ರಶ್ನಾವಳಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಲಾಗುವ ಮಾಹಿತಿಯನ್ನು ಕೇವಲ ಸಂಶೋಧನೆಗೆ ಬಳಸಲಾಗುವುದು.

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ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಯಾವುದೇ ಒತ್ತಾಯವಿಲ್ಲ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಬಯಸದಿರುವುದರಿಂದ ಯಾವುದೇ ರೀತಿಯಲ್ಲಿ ನಿಮಗೆ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ. ನೀವು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಸ್ವಯಂಪ್ರೇರಿತರಾಗಿ ಭಾಗವಹಿಸಲು ಇಚ್ಛಿಸಿದ ಮಾತ್ರದಲ್ಲಿ ಈ ಭಾಗವಹಿಕೆಗೆ ನೀವು ಸಹಿ ಮಾಡಬೇಕಾಗುತ್ತದೆ. ಹಾಗೂ ನೀವು ಬಯಸಿದ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನೀವು ಸ್ವತಂತ್ರರು. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವ ನಿರ್ಧಾರವು ಸಂಪೂರ್ಣವಾಗಿ ನಿಮ್ಮದು.

ಈ ಕಡತವನ್ನು ದೇವರಾಜ ಅರಸು ವೈದ್ಯಕೀಯ ಕಾಲೇಜಿನ ಸಾಮುದಾಯಿಕ ಚಿಕಿತ್ಸಾ ವಿಭಾಗದ ಸುರಕ್ಷಿತವಾಗಿ ಕೀಲಿಸಿದ ಸೆಳೆಗೆವೊಂದರಲ್ಲಿ ಇಡಲಾಗುವುದು ಮತ್ತು ಇದರ ಪ್ರತಿಯೊಂದನ್ನಯ ನಿಮ್ಮ ದಾಖಲೆಗಳಿಗಾಗಿ ಒದಗಿಸಲಾಗುವುದು.

ಹೆಚ್ಚಿನ ಮಾಹಿತಿಗಾಗಿ ದಯವಿಟ್ಟು ಮೇಲೆ ತಿಳಿಸಿದ ಫೋನ್ ಸಂಖ್ಯೆಯಲ್ಲಿ ಪ್ರಧಾನ ಸಂಶೋಧಕರನ್ನು ಸಂಪರ್ಕಿಸಿರಿ.

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## INFORMED CONSENT FORM

*for participating in focus group discussion for the study of the*

SYNDEMICS OF DEPRESSION, HIGH RISK BEHAVIOURS, VICTIMISATION, AND THEIR ASSOCIATION WITH SEXUALLY TRANSMITTED INFECTIONS AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDERS IN KOLAR: A MIXED-METHOD STUDY

Sl. No. \_\_\_\_\_

I, the undersigned, agree to participate in this focus group discussion (FGD), to undergo counselling, disclosure of my personal information, and to allow to record the same as outlined in this consent form.

I have been read out/explained in my local language, *i.e.*, Kannada, and understand that the purpose of this study and the confidential nature of the information that will be collected and disclosed during the study.

I have had the opportunity to ask questions regarding the various aspects of this study and my questions have been answered to my full satisfaction. The information collected will be used only for research.

I understand that I remain free to withdraw from this study at any time. Participation in this study is under my sole discretion and does not incur me any monetary cost.

\_\_\_\_\_

Date

\_\_\_\_\_

Subject's name and signature/thumb impression

\_\_\_\_\_

Name and signature of Witness 1

\_\_\_\_\_

Name and signature of Witness 2

\_\_\_\_\_

Dr G Mohan Babu, principal investigator and interviewer

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ಗುಂಪು ಚರ್ಚೆ ಸಂದರ್ಶನ ಭಾಗವಹಿಕೆ

ಮಾಹಿತಿ ತಿಳಿವಿಕೆ ಒಪ್ಪಿಗೆ ನಮೂನೆ

ಖಿನ್ನತೆ, ಅಪಾಯಕಾರಿ ನಡವಳಿಕೆ, ಮತ್ತು ಬಲಿಪಶುತ್ವಗಳ ಸಮನ್ವಿತ ಉಲ್ಬಣ ಹಾಗೂ ಕೋಲಾರದಲ್ಲಿ ಸಲ್ಫಿಂಗಿಕ ಪುರುಷರಲ್ಲಿ ಮತ್ತು ಮಂಗಳಮುಶಿಯರಲ್ಲಿ ಹರಡುವ ಲೈಂಗಿಕ ಸೋಂಕುಗಳೊಡೆ ಅವುಗಳ ಸಂಬಂಧಗಳು: ಒಂದು ಸಂಯುಕ್ತ ಅಧ್ಯಯನ

ಕ್ರ. ಸಂ. \_\_\_\_\_

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು, ಗುಂಪು ಚರ್ಚೆ ಸಂದರ್ಶನದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳಲು, ಈ ಒಪ್ಪಿಗೆ ನಮೂನೆಯಲ್ಲಿ ವಿವರಿಸಿದಂತೆ ನನ್ನ ವೈಯಕ್ತಿಕ ವಿವರಗಳನ್ನು ನೀಡಲು, ಮತ್ತು ಈ ಸಂದರ್ಶನದಲ್ ಧ್ವನಿ ರೆಕಾರ್ಡ್ ಮಾಡಲು ಈ ಕೆಳಗೆ ಸಹಿ ಮಾಡಿರುವ ನನಗೆ ಒಪ್ಪಿಗೆ ಇರುವುದು.

ಈ ಅಧ್ಯಯನದ ಉದ್ದೇಶವನ್ನು ಮತ್ತು ಇದರಲ್ಲಿ ಸಂಗ್ರಹಿಲಾಗುವ ಮಾಹಿತಿಯ ಗೌಪ್ಯತೆಯನ್ನು ಮತ್ತು ಪ್ರಕಟಣೆಯನ್ನು ನನಗೆ ಪ್ರಾದೇಶಿಕ ಭಾಷೆಯಾದ ಕನ್ನಡದಲ್ಲಿ ಓದಲಾಗಿದೆ/ವಿವರಿಸಲಾಗಿದೆ.

ಈ ಅಧ್ಯಯನವನ್ನು ಕುರಿತ ವಿವಿಧ ಅಂಶಗಳ ಬಗ್ಗೆ ನನಗೆ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುವ ಅವಕಾಶ ಕೊಡಲಾಗಿದ್ದು ನನ್ನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನನಗೆ ತೃಪ್ತಿಪೂರಕವಾಗಿ ಉತ್ತರಿಸಲಾಗಿದೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಸಂಗ್ರಹಿಲಾಗುವ ಮಾಹಿತಿಯನ್ನು ಕೇವಲ ಅಧ್ಯಯನಕ್ಕೆ ಉಪಯೋಗಿಸಲಾಗುವುದು ಎಂದು ನನಗೆ ತಿಳಿಸಲಾಗಿದೆ.

ನಾನು ಬಯಸಿದ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ನಾನು ಸ್ವತಂತ್ರ ಎಂಬುದು ನನಗೆ ತಿಳಿದಿರುವುದು. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನನಗೆ ಯಾವುದೇ ಹಣವೆಚ್ಚವಿಲ್ಲ ಎಂಬುದೂ ನಮಗೆ ತಿಳಿಸಲಾಗಿದೆ, ಹಾಗೂ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಾನು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿ ಭಾಗವಹಿಸಲು ಸಮ್ಮತಿಸಿರುವೆ.

\_\_\_\_\_

ದಿನಾಂಕ

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ಪ್ರಯೋಗಾರ್ಥಿಯ ಹೆಸರು ಮತ್ತು ಸಹಿ/ಹೆಬ್ಬರಳಿನ ಗುರುತು

\_\_\_\_\_

ಹೆಸರು ಮತ್ತು ಸಹಿ, ಸಾಕ್ಷಿ ೧

\_\_\_\_\_

ಹೆಸರು ಮತ್ತು ಸಹಿ, ಸಾಕ್ಷಿ ೨

\_\_\_\_\_

ಡಾ ಜಿ. ಮೋಹನ್ ಬಾಬು, ಪ್ರಧಾನ ಸಂಶೋಧಕರು ಹಾಗೂ ಸಂದರ್ಶಕರು

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## **ANNEXURE – III**

### **DEFINITIONS OF VARIABLES:**

#### **1.AGE:**

The age was recorded as reported by the subject, rounded down to the nearest completed year.

**2. EDUCATION:** The highest level of formal education completed by the participant.

Categories:

Illiterate: Participants who cannot read or write.

Primary: Participants who have completed up to 5th grade.

Secondary: Participants who have completed up to 10th grade.

PUC (Pre-University Course): Participants who have completed up to 12th grade.

Diploma: Participants who have completed a technical or vocational course after secondary education, usually lasting 1-3 years.

Graduate: Participants who have completed a bachelor's degree.

Professional Degree: Participants who have completed professional courses such as engineering, medicine, law, etc

#### **3.OCCUPATION:**

##### **1. Unemployed:**

Individuals who are currently without paid employment or self-employment.

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## 2. **Elementary Occupation:**

Jobs involving simple and routine tasks requiring little or no formal education or training, such as cleaners, labourers, and helpers.

We have included sex work in this category. Sex work is classified under elementary occupation as it typically involves informal, low-skilled labour without formal training or certification. This placement reflects the routine, often unregulated nature of the work, similar to other elementary occupations.

## 3. **Plant & Machine Operator and Assembler:**

Workers operating industrial machinery or equipment and assembling products, usually requiring specialized skills or training.

## 4. **Craft and Related Worker:**

Skilled manual workers involved in the production of goods by hand or with tools, including artisans, carpenters, electricians, and metal workers.

## 5. **Skilled Agricultural and Fishery Worker:**

Workers engaged in farming, forestry, animal husbandry, and fishing activities requiring specialized knowledge or skills.

## 6. **Skilled Worker, Shop & Market Sales Worker:**

Workers performing skilled trades and retail activities, including shop assistants, cashiers, and salespersons.

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7. **Clerk:**

Persons performing clerical tasks such as record-keeping, typing, filing, and office support roles.

8. **Technician / Associate Professional:**

Workers with technical or practical knowledge supporting professionals, such as laboratory technicians, health associate professionals, and engineering assistants.

9. **Professional:**

Individuals engaged in jobs requiring advanced education and theoretical knowledge, including teachers, engineers, doctors, and lawyers.

10. **Legislator, Senior Official, Manager:**

People holding high-level administrative, managerial, or policy-making positions, including legislators, senior government officials, and managers of large organizations.

**4.PER CAPITA INCOME:**

Per capita income is calculated as the total family income divided by the family size.

PCI= Total family income/ No. of Family members

**5.SOCIO-ECONOMIC STATUS:**

Classified according to the Modified B.G. Prasad's classification based on per capita monthly income (Consumer Price Index for October 2024):

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| Socio-Economic Class     | Per Capita Monthly Income (₹) |
|--------------------------|-------------------------------|
| Class I (Upper)          | 9,098 and above               |
| Class II (Upper Middle)  | 4,549 – 9,097                 |
| Class III (Lower Middle) | 2,729 – 4,548                 |
| Class IV (Upper Lower)   | 1,364 – 2,728                 |
| Class V (Lower)          | Less than 1,364               |

## 6.CO-MORBIDITIES:

Presence of one or more of the following diseases were considered:

### a) **Diabetes**

### **Mellitus:**

A person with:

- Classical symptoms of diabetes (polyuria, polydipsia, unexplained weight loss) plus
- Random blood glucose > 200 mg/dL (11.1 mmol/L), or
- Fasting plasma glucose  $\geq$  126 mg/dL (7.0 mmol/L) on two separate occasions, or
- HbA1c  $\geq$  6.5%, or
- On anti-diabetic medication.

### b) **Hypertension:**

A person with:

- 
- Systolic blood pressure  $\geq 140$  mmHg and/or
  - Diastolic blood pressure  $\geq 90$  mmHg on two or more readings taken on different occasions, or
  - Currently on antihypertensive medication.

c) **Asthma:**

A person with:

- Recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, especially at night or early morning, and
- Documented reversible airway obstruction on pulmonary function tests (increase in FEV1  $\geq 12\%$  after bronchodilator use).

d) **Tuberculosis (TB):**

A person with:

- Clinical symptoms such as cough lasting more than two weeks, weight loss, fever, night sweats; and
- Laboratory confirmation by sputum smear microscopy, culture, or molecular tests; or
- Currently on anti-tubercular treatment.

e) **Thyroid Disorder:**

Diagnosis is generally clinical plus:

- Abnormal thyroid function tests (TSH and free T4);
- Includes both hypothyroidism and hyperthyroidism, or

- 
- Currently on medication.

f) **Epilepsy:**

A person with:

- Two or more unprovoked seizures more than 24 hours apart, or
- Currently on anti-epileptic medication.

g) **HIV (Human Immunodeficiency Virus):**

A person with:

- Positive HIV antibody tests confirmed by ELISA and/or Western blot according to national testing algorithm.
- Currently on Anti-Retroviral Therapy.

**7.SUBSTANCE USAGE:**

i. **Alcohol Usage:**

Consumption of any beverage containing ethanol, such as beer, wine, spirits, or liquor.

Frequency reflects how many occasions alcohol was consumed in the past two weeks.

- **Never:** The individual has never consumed alcohol in their lifetime (lifetime abstinence).
- **Nil:** The individual has consumed alcohol at some point in their life but did not consume any in the past two weeks.

ii. **Tobacco Usage:**

Use of any tobacco products, including cigarettes, cigars, bidis, chewing tobacco, or snuff.

Frequency indicates the number of times tobacco was used in the past two weeks.

- 
- **Never:** The individual has never used tobacco products in their lifetime (lifetime abstinence).
  - **Nil:** The individual has used tobacco before but not in the past two weeks.

iii. **Marijuana Usage:**

Consumption or inhalation of cannabis in any form—such as smoking, vaporizing, or ingesting cannabis products—within the past two weeks.

- **Never:** The individual has never used marijuana in their lifetime (lifetime abstinence).
- **Nil:** The individual has used marijuana before but not in the past two weeks.

iv. **Cocaine Usage:**

Use of cocaine in any form, including powder (snorted, injected) or crack cocaine (smoked), at least once within the past two weeks.

- **Never:** The individual has never used cocaine in their lifetime (lifetime abstinence).
- **Nil:** The individual has used cocaine before but not in the past two weeks.

v. **Heroin Usage:**

Use of heroin by any route (injection, snorting, or smoking) during the past two weeks.

- **Never:** The individual has never used heroin in their lifetime (lifetime abstinence).
- **Nil:** The individual has used heroin before but not in the past two weeks.

## ANNEXURE – IV

### GANTT CHART

| STEP | ACTIVITY                                   | TIME PERIOD |       |          |      |               |                  |          |         |          |       |       |  |
|------|--------------------------------------------|-------------|-------|----------|------|---------------|------------------|----------|---------|----------|-------|-------|--|
|      |                                            | 2023        |       | 2024     |      |               |                  |          | 2025    |          |       |       |  |
|      |                                            | Feb-march   | April | May-June | July | Aug-September | October-November | December | January | February | March | April |  |
| 1    | Topic search, selection & synopsis writing |             |       |          |      |               |                  |          |         |          |       |       |  |
| 2    | Synopsis submission                        |             |       |          |      |               |                  |          |         |          |       |       |  |
| 3    | Approval by IEC*                           |             |       |          |      |               |                  |          |         |          |       |       |  |
| 4    | Proforma Preparation and validation        |             |       |          |      |               |                  |          |         |          |       |       |  |
| 5    | Pilot project                              |             |       |          |      |               |                  |          |         |          |       |       |  |
| 6    | Review of literature                       |             |       |          |      |               |                  |          |         |          |       |       |  |
| 7    | Data collection                            |             |       |          |      |               |                  |          |         |          |       |       |  |
| 8    | Data analysis                              |             |       |          |      |               |                  |          |         |          |       |       |  |
| 9    | Dissertation writing                       |             |       |          |      |               |                  |          |         |          |       |       |  |
| 10   | Submission of dissertation                 |             |       |          |      |               |                  |          |         |          |       |       |  |

## ANNEXURE – V

### GALLERY



KGF



BANGARAPET

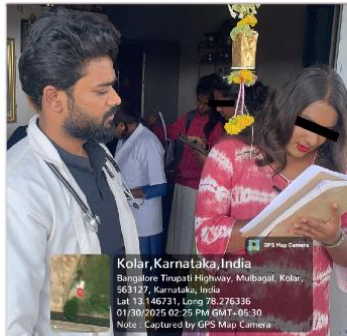


KOLAR

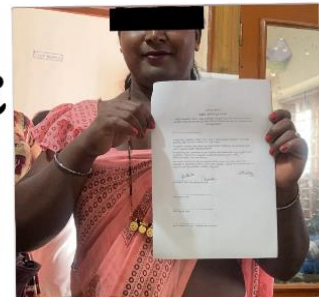


MALUR

**QUANTITATIVE  
SURVEY**



KOLAR



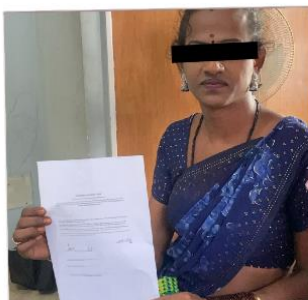
KGF



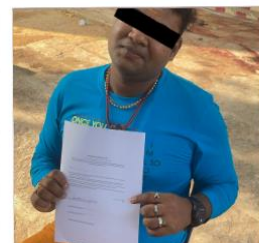
MULBAGAL



SRINIVASAPURA



MALUR



BANGARAPET



F  
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D



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# **MASTER CHART**

| Name | Age | Gender | Trans - Surgery<br>[Castration] | Trans - Surgery<br>[BREAST IMPLANT] | Trans - Surgery<br>[SRS] | Religion | Education | WORK [COLLECTION] | WORK [SEX WORK] | WORK [OTHERS] | Occupation | Number of Members in<br>the Family | Socioeconomic class | H0 [Diabetes] | H0 [Hypertension] | H0 [Cardiovascular<br>Diseased] | H0 [Asthma] | H0 [Tuberculosis] | H0 [Thyroid Disorder] | H0 [Epilepsy] | H0 [HIV] | H0 [SYPHILIS] | H0 Substance usage<br>[Tobacco] | H0 Substance usage<br>[Alcohol] | H0 Substance usage<br>[Marijuana] | H0 Substance usage<br>[Cocaine] | H0 Substance usage<br>[Heroin] | D_Q1 | D_Q2 | D_Q3 | D_Q4 | D_Q5 | D_Q6 | D_Q7 | D_Q8 | D_Q9 | D_Q10 | HR_D_Q1 | HR_D_Q2 | HR_D_Q3 | HR_D_Q4 | HR_D_Q5 | HR_D_Q6 | HR_S_Q7 | HR_S_Q8 | HR_S_Q9 | HR_S_Q10 | HR_S_Q11 | Dic_Q1 | Dic_Q2 | Dic_Q3 | Dic_Q4 | Dic_Q5 | Dic_Q6 | Vic_Q7 | Vic_Q8 | Vic_Q9 | Vic_Q10 | Vic_Q11 | Vic_Q12 | Vic_Q13 |   |   |   |   |   |
|------|-----|--------|---------------------------------|-------------------------------------|--------------------------|----------|-----------|-------------------|-----------------|---------------|------------|------------------------------------|---------------------|---------------|-------------------|---------------------------------|-------------|-------------------|-----------------------|---------------|----------|---------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|--------------------------------|------|------|------|------|------|------|------|------|------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---|---|---|---|---|
| P1   | 23  | 3      | 1                               | 1                                   | 0                        | 1        | 5         | 0                 | 1               | 0             | 2          | 1                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 99                              | 4                               | 99                                | 99                              | 99                             | 99   | 1    | 0    | 0    | 0    | 3    | 3    | 0    | 0    | 1     | 1       | 0       | 0       | 0       | 0       | 0       | 0       | 5       | 1       | 1        | 1        | 5      | 1      | 1      | 1      | 1      | 1      | 1      | 5      | 1      | 4       | 3       | 1       | 4       |   |   |   |   |   |
| P2   | 54  | 4      | 0                               | 0                                   | 0                        | 3        | 2         | 0                 | 0               | 0             | 1          | 1                                  | 5                   | 1             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 0                               | 4                                 | 1                               | 99                             | 2    | 3    | 3    | 1    | 3    | 2    | 1    | 3    | 2    | 1     | 3       | 2       | 1       | 0       | 0       | 0       | 0       | 0       | 0       | 1        | 1        | 1      | 0      | 1      | 1      | 1      | 4      | 2      | 1      | 2      | 3       | 5       | 1       | 1       | 4 | 1 | 2 |   |   |
| P3   | 25  | 3      | 1                               | 0                                   | 0                        | 1        | 6         | 0                 | 0               | 1             | 6          | 2                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 0                                 | 99                              | 99                             | 0    | 2    | 2    | 1    | 3    | 0    | 0    | 3    | 3    | 2     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0      | 1      | 2      | 3      | 1      | 1      | 1      | 1      | 1      | 1       | 1       | 1       | 1       |   |   |   |   |   |
| P4   | 37  | 3      | 1                               | 1                                   | 0                        | 1        | 3         | 0                 | 1               | 0             | 2          | 3                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 1                               | 0                                 | 99                              | 99                             | 0    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0      | 1      | 1      | 1      | 2      | 1      | 1      | 1      | 2      | 4       | 1       | 1       | 4       | 1 | 1 |   |   |   |
| P5   | 36  | 3      | 1                               | 1                                   | 1                        | 1        | 3         | 0                 | 0               | 1             | 2          | 1                                  | 1                   | 0             | 0                 | 1                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 0                                 | 99                              | 99                             | 2    | 2    | 1    | 0    | 1    | 0    | 0    | 3    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 4       | 1        | 1        | 0      | 0      | 1      | 1      | 1      | 1      | 1      | 4      | 1      | 1       | 1       | 2       | 2       | 1 |   |   |   |   |
| P6   | 28  | 3      | 1                               | 1                                   | 0                        | 1        | 2         | 0                 | 1               | 0             | 2          | 5                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 2                               | 0                                 | 99                              | 99                             | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 5       | 0       | 1        | 1        | 0      | 1      | 1      | 5      | 1      | 1      | 1      | 3      | 3      | 1       | 2       | 1       | 1       | 1 |   |   |   |   |
| P7   | 27  | 3      | 1                               | 0                                   | 0                        | 1        | 5         | 0                 | 1               | 0             | 2          | 4                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 1                               | 0                                 | 99                              | 99                             | 0    | 1    | 1    | 0    | 0    | 2    | 2    | 1    | 1    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 4       | 2       | 0        | 1        | 0      | 1      | 1      | 5      | 3      | 3      | 4      | 4      | 4      | 1       | 4       | 3       | 4       |   |   |   |   |   |
| P8   | 25  | 3      | 1                               | 0                                   | 0                        | 1        | 4         | 0                 | 1               | 0             | 2          | 5                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 3                               | 0                                 | 99                              | 99                             | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 5       | 1       | 0        | 1        | 0      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1       | 1       | 1       |         |   |   |   |   |   |
| P9   | 36  | 1      | 0                               | 0                                   | 0                        | 1        | 3         | 0                 | 1               | 1             | 9          | 6                                  | 5                   | 1             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 2                               | 0                               | 99                                | 99                              | 0                              | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 3       | 1        | 1        | 1      | 0      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1       | 1       | 1       | 1       |   |   |   |   |   |
| P10  | 27  | 4      | 0                               | 0                                   | 0                        | 1        | 3         | 0                 | 0               | 1             | 2          | 4                                  | 3                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 0                                 | 99                              | 99                             | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 3        | 0        | 1      | 0      | 0      | 1      | 1      | 1      | 1      | 1      | 1      | 2       | 1       | 1       | 2       | 1 | 1 |   |   |   |
| P11  | 46  | 5      | 0                               | 0                                   | 0                        | 0        | 1         | 3                 | 0               | 0             | 1          | 2                                  | 4                   | 3             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 0                                 | 99                              | 99                             | 3    | 2    | 2    | 2    | 0    | 3    | 0    | 2    | 0    | 1     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 3       | 5       | 1        | 0        | 1      | 3      | 2      | 1      | 1      | 1      | 1      | 4      | 3      | 2       | 1       | 1       | 1       | 2 |   |   |   |   |
| P12  | 32  | 3      | 0                               | 1                                   | 0                        | 1        | 1         | 1                 | 0               | 0             | 1          | 1                                  | 3                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 0                                 | 99                              | 99                             | 0    | 1    | 1    | 0    | 2    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0      | 1      | 1      | 1      | 2      | 1      | 3      | 3      | 1      | 1       | 1       | 1       | 1       | 1 |   |   |   |   |
| P13  | 25  | 1      | 0                               | 0                                   | 0                        | 3        | 3         | 1                 | 0               | 1             | 2          | 4                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 1                               | 99                                | 99                              | 2                              | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 1       | 5       | 0       | 0        | 5        | 2      | 1      | 1      | 1      | 1      | 2      | 3      | 4      | 1      | 1       | 4       | 3       | 3       |   |   |   |   |   |
| P14  | 25  | 3      | 1                               | 1                                   | 0                        | 1        | 4         | 1                 | 0               | 0             | 1          | 1                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 99                                | 99                              | 99                             | 99   | 0    | 2    | 2    | 0    | 1    | 2    | 1    | 2    | 2     | 1       | 2       | 2       | 1       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 1      | 1      | 0      | 0      | 3      | 1      | 1      | 1      | 1      | 1       | 4       | 4       | 5       | 1 | 1 | 3 | 1 | 2 |
| P15  | 25  | 3      | 1                               | 1                                   | 0                        | 3        | 6         | 1                 | 0               | 0             | 1          | 2                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 99                              | 99                                | 99                              | 99                             | 1    | 1    | 1    | 2    | 2    | 1    | 2    | 3    | 1    | 2     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 2        | 1      | 4      | 1      | 1      | 1      | 5      | 5      | 2      | 1      | 5       | 1       | 1       | 1       |   |   |   |   |   |
| P16  | 29  | 3      | 1                               | 1                                   | 0                        | 1        | 3         | 0                 | 1               | 0             | 2          | 1                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 99                              | 99                                | 99                              | 99                             | 1    | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 2     | 0       | 1       | 0       | 0       | 0       | 0       | 0       | 0       | 4       | 1        | 1        | 1      | 0      | 1      | 1      | 1      | 1      | 1      | 2      | 2      | 1       | 1       | 1       | 1       | 1 | 1 |   |   |   |
| P17  | 35  | 5      | 0                               | 0                                   | 0                        | 1        | 3         | 0                 | 0               | 1             | 2          | 6                                  | 4                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 99                              | 99                                | 99                              | 99                             | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 0    | 0    | 1     | 2       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1       | 5        | 0        | 0      | 0      | 2      | 1      | 2      | 1      | 1      | 1      | 1      | 1       | 1       | 1       | 3       |   |   |   |   |   |
| P18  | 25  | 5      | 0                               | 0                                   | 0                        | 0        | 1         | 3                 | 0               | 0             | 1          | 6                                  | 4                   | 2             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 2                               | 0                                 | 99                              | 99                             | 3    | 2    | 3    | 3    | 2    | 1    | 0    | 2    | 1    | 1     | 0       | 0       | 0       | 0       | 0       | 0       | 3       | 1       | 1       | 0        | 2        | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1       | 1       | 1       | 1       | 1 |   |   |   |   |
| P19  | 25  | 3      | 1                               | 0                                   | 0                        | 1        | 4         | 1                 | 1               | 0             | 2          | 5                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 2                               | 99                                | 99                              | 99                             | 1    | 0    | 1    | 0    | 0    | 2    | 0    | 0    | 2    | 0     | 0       | 1       | 0       | 0       | 0       | 0       | 0       | 0       | 5       | 1        | 0        | 1      | 0      | 1      | 1      | 1      | 1      | 1      | 1      | 4      | 5       | 1       | 2       | 3       | 1 | 1 |   |   |   |
| P20  | 34  | 1      | 0                               | 0                                   | 0                        | 1        | 5         | 1                 | 0               | 1             | 6          | 5                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 0                               | 99                                | 99                              | 99                             | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0      | 3      | 3      | 1      | 1      | 3      | 4      | 3      | 1      | 1       | 1       | 1       | 1       | 1 |   |   |   |   |
| P21  | 35  | 5      | 0                               | 0                                   | 0                        | 1        | 4         | 0                 | 0               | 1             | 2          | 10                                 | 2                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 1                               | 0                               | 99                                | 99                              | 99                             | 0    | 0    | 1    | 1    | 1    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1       | 5        | 0        | 0      | 0      | 1      | 1      | 1      | 2      | 2      | 1      | 1      | 1       | 2       | 2       | 1       |   |   |   |   |   |
| P22  | 26  | 1      | 1                               | 0                                   | 0                        | 3        | 1         | 1                 | 0               | 0             | 1          | 5                                  | 3                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 1                               | 2                               | 99                                | 99                              | 99                             | 1    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 1    | 1     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 5       | 0        | 1        | 1      | 1      | 1      | 1      | 2      | 2      | 1      | 2      | 2      | 1       | 2       | 1       | 1       |   |   |   |   |   |
| P23  | 32  | 3      | 1                               | 1                                   | 0                        | 1        | 3         | 0                 | 1               | 0             | 2          | 3                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 99                              | 99                                | 99                              | 99                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 1       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 4       | 0        | 0        | 1      | 0      | 1      | 1      | 5      | 1      | 1      | 1      | 3      | 3       | 1       | 1       | 1       | 1 | 1 | 1 |   |   |
| P24  | 40  | 1      | 0                               | 0                                   | 0                        | 1        | 1         | 1                 | 0               | 0             | 1          | 3                                  | 2                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 4                               | 99                                | 99                              | 99                             | 0    | 1    | 2    | 1    | 0    | 1    | 0    | 1    | 0    | 1     | 2       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 1      | 4      | 3      | 1      | 2      | 1      | 5      | 2      | 1      | 1       | 1       | 2       | 1       | 1 | 1 |   |   |   |
| P25  | 40  | 3      | 1                               | 1                                   | 0                        | 1        | 2         | 1                 | 0               | 0             | 1          | 2                                  | 2                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 1        | 0             | 99                              | 99                              | 99                                | 99                              | 99                             | 3    | 2    | 3    | 1    | 1    | 2    | 1    | 1    | 3    | 1     | 0       | 0       | 0       | 0       | 0       | 0       | 2       | 3       | 2       | 0        | 3        | 3      | 2      | 3      | 1      | 1      | 3      | 3      | 4      | 3      | 1       | 3       | 1       | 3       |   |   |   |   |   |
| P26  | 42  | 3      | 1                               | 0                                   | 0                        | 1        | 3         | 0                 | 0               | 0             | 6          | 2                                  | 2                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 1        | 0             | 99                              | 0                               | 99                                | 99                              | 99                             | 2    | 1    | 2    | 1    | 1    | 2    | 1    | 1    | 2    | 1     | 1       | 1       | 1       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 2        | 3      | 2      | 0      | 5      | 3      | 2      | 3      | 3      | 3      | 2       | 2       | 4       | 2       | 1 | 3 | 2 | 3 |   |
| P27  | 40  | 5      | 0                               | 0                                   | 0                        | 1        | 4         | 0                 | 0               | 0             | 6          | 2                                  | 3                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 99                              | 99                              | 99                                | 99                              | 99                             | 0    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0 | 0 | 0 |   |   |
| P28  | 22  | 3      | 1                               | 1                                   | 0                        | 1        | 3         | 1                 | 1               | 0             | 2          | 3                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 4                               | 1                               | 99                                | 99                              | 99                             | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 5        | 5        | 1      | 1      | 3      | 1      | 1      | 1      | 2      | 1      | 4      | 3       | 4       | 1       | 1       | 4 | 1 | 1 |   |   |
| P29  | 22  | 3      | 1                               | 1                                   | 0                        | 1        | 4         | 0                 | 1               | 0             | 2          | 3                                  | 1                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 99                              | 99                              | 99                                | 99                              | 1                              | 1    | 0    | 0    | 0    | 2    | 0    | 1    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 5       | 1        | 1        | 1      | 0      | 3      | 1      | 4      | 1      | 1      | 1      | 4      | 4       | 1       | 4       | 1       | 1 | 1 | 1 |   |   |
| P30  | 25  | 3      | 1                               | 1                                   | 0                        | 1        | 4         | 0                 | 1               | 1             | 2          | 2                                  | 2                   | 0             | 0                 | 0                               | 0           | 0                 | 0                     | 0             | 0        | 0             | 0                               | 1                               | 99                                | 99                              | 99                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 4       | 0        | 0        | 0      | 0      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 4       | 1       | 1       | 1       | 1 | 1 | 1 |   |   |
| P31  | 30  | 1      | 0                               | 0                                   | 0                        | 1        | 5         | 0                 | 1               | 0             | 2          | 2                                  | 2                   | 0             | 0                 | 0                               | 0</         |                   |                       |               |          |               |                                 |                                 |                                   |                                 |                                |      |      |      |      |      |      |      |      |      |       |         |         |         |         |         |         |         |         |         |          |          |        |        |        |        |        |        |        |        |        |         |         |         |         |   |   |   |   |   |

|      |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P93  | 34 | 3 | 1 | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 99 | 99 | 99 | 2  | 2  | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 3   | 4 | 1 | 1 | 4 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| P94  | 38 | 3 | 0 | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 99 | 99 | 99 | 2  | 2  | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1   | 3 | 4 | 1 | 1 | 4 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |
| P95  | 21 | 1 | 0 | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 99 | 99 | 99 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4   | 1 | 1 | 4 | 1 | 3 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P96  | 19 | 1 | 0 | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4  | 99 | 99 | 99 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 1 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 4 | 4   | 1 | 1 | 4 | 1 | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P97  | 20 | 1 | 0 | 0 | 0 | 1 | 6 | 1 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 1  | 99 | 99 | 3  | 3  | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3   | 3 | 3 | 3 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P98  | 47 | 4 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 2 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 1  | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3   | 1 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P99  | 32 | 5 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 6 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2   | 1 | 1 | 1 | 2 | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P100 | 32 | 4 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 6 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 99 | 99 | 99 | 2  | 2  | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1   | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P101 | 23 | 1 | 1 | 0 | 0 | 3 | 3 | 1 | 1 | 0 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 99 | 99 | 99 | 1  | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 1 | 0 | 2 | 2 | 2 | 2 | 2 | 1   | 2 | 2 | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P102 | 30 | 5 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0  | 0  | 99 | 99 | 99 | 3  | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2   | 1 | 3 | 4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P103 | 40 | 3 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 99 | 1  | 99 | 99 | 99 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4   | 1 | 1 | 4 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P104 | 40 | 3 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 99 | 99 | 99 | 0  | 0  | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 1   | 1 | 4 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P105 | 30 | 3 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 0  | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 3   | 4 | 1 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| P106 | 37 | 1 | 0 | 0 | 0 | 3 | 2 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 0  | 99 | 99 | 99 | 3  | 2 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 4 | 1 | 1 | 1 | 3 | 4   | 4 | 3 | 3 | 4 | 3 | 4 |   |   |   |   |   |   |   |   |   |   |   |   |
| P107 | 20 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3   | 4 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P108 | 26 | 3 | 1 | 0 | 1 | 1 | 4 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 4  | 99 | 99 | 99 | 2  | 2 | 0 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 1 | 1 | 0 | 1 | 1 | 4 | 3 | 3 | 4   | 4 | 3 | 4 | 4 | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P109 | 30 | 3 | 1 | 0 | 0 | 1 | 3 | 1 | 1 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 3 | 1 | 1 | 4 | 3   | 1 | 4 | 4 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P110 | 40 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 0  | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 4   | 3 | 1 | 2 | 3 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P111 | 34 | 3 | 1 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4  | 4  | 99 | 99 | 99 | 0  | 2 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 1 | 3   | 4 | 5 | 1 | 1 | 3 | 1 | 3 |   |   |   |   |   |   |   |   |   |   |   |
| P112 | 30 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 3  | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 4 | 4   | 2 | 1 | 3 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P113 | 18 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 2  | 0  | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P114 | 29 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 6 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 0  | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 5 | 2 | 1   | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P115 | 19 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 2 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 0  | 99 | 99 | 99 | 1  | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 4 | 1 | 1 | 1 | 5   | 5 | 2 | 5 | 5 | 1 | 1 | 5 | 4 | 1 |   |   |   |   |   |   |   |   |   |
| P116 | 25 | 4 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 1 | 2 | 5 | 4 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0  | 99 | 99 | 99 | 99 | 2  | 2 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1   | 4 | 1 | 2 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |
| P117 | 27 | 4 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 1 | 5 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1   | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 1 | 1 |   |   |   |   |   |   |   |   |   |
| P118 | 25 | 4 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 1  | 1 | 2 | 1 | 0 | 1 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 1 | 3 | 3 | 5 | 5   | 3 | 1 | 2 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P119 | 25 | 4 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| P120 | 55 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 0  | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 3 | 5 | 1 | 1   | 1 | 1 | 2 | 4 | 4 | 1 | 1 | 2 | 1 |   |   |   |   |   |   |   |   |   |
| P121 | 40 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |
| P122 | 27 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1   | 5 | 0 | 0 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 1 | 1 | 4 | 1 | 1 |
| P123 | 30 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 1  | 99 | 99 | 99 | 99 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 1 | 0 | 3 | 1 | 4   | 4 | 2 | 2 | 3 | 4 | 2 | 1 | 1 | 1 | 4 |   |   |   |   |   |   |   |   |
| P124 | 45 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 2 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 99 | 1  | 99 | 99 | 99 | 3  | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 0 | 2 | 3 | 3 | 2 | 2 | 3   | 2 | 2 | 1 | 2 | 3 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| P125 | 26 | 4 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 2  | 99 | 99 | 99 | 99 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1   | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |
| P126 | 29 | 4 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 1 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 99 | 99 | 99 | 99 | 1  | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1</ |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |





|      |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P387 | 29 | 3 | 1 | 1 | 0 | 1 | 3 | 1 | 1 | 0 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 3  | 99 | 99 | 99 | 3  | 3 | 3 | 2 | 1 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 3 | 2 | 3 | 2 | 2 | 3 | 3 | 4 | 1 | 4 | 3 | 2 | 3 |   |   |
| P388 | 25 | 3 | 1 | 1 | 0 | 1 | 3 | 1 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 1  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 3 | 2 | 3 | 2 | 2 | 3 | 5 | 4 | 2 | 3 | 3 | 3 | 3 |
| P389 | 31 | 3 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 2  | 99 | 99 | 99 | 3  | 3 | 3 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 3 | 3 | 4 | 3 | 1 | 4 | 2 | 5 | 3 | 2 | 3 |   |
| P390 | 24 | 3 | 1 | 1 | 0 | 3 | 2 | 1 | 1 | 0 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 2  | 99 | 99 | 99 | 3  | 3 | 3 | 1 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 3 | 2 | 4 | 3 | 4 | 4 | 3 | 1 | 4 | 1 | 5 | 3 | 1 | 3 |   |
| P391 | 27 | 3 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 2  | 99 | 99 | 99 | 3  | 3 | 3 | 1 | 1 | 1 | 2 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 3 | 3 | 1 | 3 | 4 | 3 | 1 | 4 | 2 | 1 | 3 | 2 | 3 |   |   |
| P392 | 26 | 3 | 1 | 1 | 0 | 1 | 4 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2  | 2  | 99 | 99 | 99 | 3  | 3 | 3 | 1 | 1 | 1 | 3 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 1 | 3 | 5 | 3 | 3 | 3 | 1 | 3 | 4 | 2 | 1 | 3 | 2 | 3 |
| P393 | 33 | 3 | 1 | 1 | 0 | 3 | 2 | 1 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0  | 99 | 2  | 99 | 99 | 99 | 3 | 2 | 3 | 1 | 1 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 1 | 2 | 3 | 2 | 3 | 2 | 1 | 2 | 4 | 2 | 3 | 3 | 2 | 4 |
| P394 | 25 | 3 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 2  | 99 | 99 | 99 | 2  | 3 | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 3 | 4 | 2 | 2 | 3 | 2 | 2 |
| P395 | 37 | 3 | 1 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 99 | 2  | 99 | 99 | 99 | 2  | 3 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 1 | 3 | 3 | 2 | 3 | 4 | 3 | 1 | 3 | 2 | 3 |   |   |   |   |
| P396 | 26 | 3 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2  | 1  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 1 | 2 | 3 | 2 | 3 | 2 | 1 | 1 | 3 | 4 | 3 | 3 | 3 | 2 | 2 |   |
| P397 | 33 | 3 | 1 | 1 | 0 | 1 | 3 | 1 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1  | 1  | 99 | 99 | 99 | 2  | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 |   |
| P398 | 28 | 3 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2  | 1  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 3 | 3 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 4 | 1 | 3 | 2 | 2 | 3 | 2 | 4 | 3 | 2 | 3 | 3 | 2 |   |   |   |
| P399 | 42 | 4 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 3 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 99 | 99 | 99 | 3  | 2 | 2 | 3 | 1 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |   |
| P400 | 57 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 99 | 99 | 99 | 3  | 2 | 3 | 2 | 1 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |   |
| P401 | 31 | 4 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 99 | 1  | 99 | 99 | 99 | 2 | 3 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |   |
| P402 | 33 | 4 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 1  | 99 | 99 | 99 | 3  | 2 | 3 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 3 | 2 | 1 | 2 | 3 |   |
| P403 | 26 | 3 | 1 | 1 | 0 | 1 | 3 | 1 | 1 | 0 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 1  | 99 | 99 | 99 | 2  | 3 | 3 | 2 | 0 | 3 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 5 | 3 | 1 | 5 | 5 | 1 | 1 | 4 | 1 | 4 | 1 | 2 |   |   |   |
| P404 | 23 | 3 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 1  | 99 | 99 | 99 | 3  | 2 | 2 | 0 | 2 | 3 | 1 | 2 | 2 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 4 | 4 | 2 | 4 | 1 | 1 | 3 | 2 | 3 | 2 | 3 |   |   |
| P405 | 26 | 3 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2  | 2  | 99 | 99 | 99 | 3  | 3 | 3 | 2 | 1 | 2 | 2 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 5 | 4 | 1 | 1 | 3 | 1 | 2 |   |
| P406 | 27 | 3 | 1 | 1 | 0 | 3 | 2 | 1 | 1 | 0 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 2  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 1 | 3 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 4 | 3 | 3 | 4 | 1 | 1 | 1 | 4 | 4 | 2 | 1 | 3 | 2 | 3 |   |
| P407 | 27 | 3 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 2  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 0 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 1 | 4 | 4 | 3 | 4 | 1 | 1 | 1 | 5 | 5 | 2 | 1 | 3 | 1 | 2 |   |   |
| P408 | 25 | 3 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4  | 3  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 0 | 2 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 1 | 5 | 3 | 3 | 4 | 1 | 1 | 2 | 5 | 4 | 1 | 1 | 4 | 2 | 3 |   |   |
| P409 | 24 | 3 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3  | 2  | 99 | 99 | 99 | 3  | 2 | 3 | 1 | 0 | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 4 | 3 | 3 | 5 | 1 | 1 | 1 | 5 | 5 | 2 | 1 | 4 | 2 | 3 |   |   |
| P410 | 33 | 3 | 1 | 1 | 0 | 3 | 2 | 1 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0  | 4  | 2  | 99 | 99 | 99 | 3 | 2 | 3 | 2 | 0 | 2 | 2 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 2 | 3 | 1 | 5 | 1 | 2 | 1 | 5 | 4 | 1 | 1 | 4 | 1 | 3 |

