Nepal Sexual Dysfunction Study 2024







In Coordination with Familly Welfare Division Department of Health Services MoHP

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2024

Principal Investigator: Dr. Khem Bahadur Karki

Investigators:

Sushan Man Shrestha Ajit Acharya Swapnil Karki Stela Shakya Deena Pradhan Pradeep K. Shrestha Nitra Bahadur Deuja **Nepal Sexual Dysfunction Study, 2024 (NSDS-2024)** was completed through the collective efforts of various professionals and institutions. We extend our heartfelt gratitude to all individuals and organizations who contributed to the successful completion of this study.

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Dr. Khem Bahadur Karki Principal Investigator

Factsheet

This prevalence survey of sexual dysfunction was carried out from July to December 2024 among 3,382 married, literate participants of both sexes, aged 30 years and above, from 34 districts representing the ecological belts (Mountain, Hill, and Terai) as well as urban and rural settings of Nepal. This survey collected socio-demographic and behavioral information (tobacco, alcohol, diet and physical activity). Physical measurements such as height, weight, blood pressure and blood glucose level were measured to estimate prevalence of obesity, raised blood pressure and raised blood glucose level. Internationally validated tools for sexual dysfunction study – The International Index of Erectile Function (IIEF-15) and The Female Sexual Function Index (FSFI-19) for male and female respectively, were used to collect the sexual dysfunction related information. A sequential mixed method with multi-stage cluster sample design was applied.

Results	Both sexes % (95% CI)	Male % (95% CI)	Female % (95% CI)
Overall Sexual Dysfunction	67.8 (67.0, 68.6)	72.2 (69.9, 74.5)	67.0 (66.1, 67.8)
Sexual Dysfunction by Type (Domains)			
Erectile Dysfunction		72.2 (69.9, 74.5)	
Mild Erectile Dysfunction		31.7 (29.7, 33.7)	
Mild to Moderate Erectile Dysfunction		25.8 (23.9, 27.7)	
Moderate Erectile Dysfunction		9.7 (8.4, 11.0)	
Severe Erectile Dysfunction		5.1 (4.2, 6.1)	
Among the people with sexual dysfunction			
Loss of Intercourse Satisfaction		84.4 (82.8, 85.9)	
Compromised Sexual Desire		91.8 (90.6, 92.9)	91.9 (91.4, 92.4)
Orgasmic Dysfunction		75.3 (73.4, 77.2)	73.5 (72.7, 74.3)
Loss of Sexual Satisfaction		73.9 (72.0, 75.8)	57.6 (56.7, 58.5)
Compromised Sexual Arousal			94.3 (93.8, 94.8)
Pain during Sexual Intercourse			65.9 (65.0, 66.7)
Difficulty in Lubrication			86.0 (85.3, 86.6)

Results	Both sexes %	Male %	Female %			
	(95% CI)	(95% CI)	(95% CI)			
Sexual Dysfunction by Ecological Belt						
Mountain	66.1	79.8	63.3			
	(64.0, 68.1)	(75.5, 83.8)	(61.1, 65.6)			
Hill	66.4	77.7	63.4			
	(64.7, 68.0)	(74.4, 80.7)	(61.5, 65.2)			
Terai	68.8	66.0	69.2			
	(67.8, 69.8)	(63.1, 68.9)	(68.1, 70.3)			
Sexual Dysfunction by Province						
Koshi	60.1	76.0	51.3			
	(56.6, 63.5)	(70.8, 80.8)	(46.9, 55.6)			
Madhesh	72.6	64.1	73.3			
	(71.4, 73.7)	(59.5, 68.5)	(72.1, 74.4)			
Bagmati	67.3	73.8	64.4			
	(64.3, 70.1)	(68.8, 78.4)	(60.7, 67.8)			
Gandaki	54.7	74.8	46.5			
	(51.1, 58.2)	(68.8, 80.3)	(42.2, 50.7)			
Lumbini	52.3	71.5	40.8			
	(49.0, 55.6)	(66.5, 76.2)	(36.8, 45.0)			
Karnali	71.5	82.4	70.2			
	(69.7, 73.2)	(77.3, 86.3)	(68.2, 72.0)			
Sudur-Paschim	63.2	67.0	62.7			
	(60.9, 65.5)	(60.5, 72.7)	(60.2, 65.1)			
Sexual Dysfunction by Residence						
Urban	68.1	69.4	67.9			
	(67.2, 69.1)	(67.0, 71.9)	(66.9, 68.9)			
Rural	67.1	77.0	65.0			
	(65.7, 68.5)	(74.0, 80.0)	(63.5, 66.6)			
Sexual Dysfunction by Age at Marriage						
18 years or below	68.4	75.1	67.7			
	(67.0, 68.4)	(70.7, 79.3)	(66.2, 69.2)			
19-24 years	66.8	77.1	64.8			
	(65.5, 66.8)	(74.1, 80.0)	(63.3, 66.3)			
25 years or above	60.9	65.7	58.6			
	(58.6, 60.9)	(61.6, 69.5)	(55.7, 61.4)			
Sexual Dysfunction by Morbidity Status						
No Morbidity	66.8	68.6	66.6			
	(66.0, 67.7)	(66.3, 70.7)	(65.7, 67.5)			
Comorbidity	76.4	87.6	71.7			
	(74.1, 78.6)	(84.1, 90.6)	(68.8, 74.5)			
Diabetes Mellitus (DM) Only	71.8	89.6	64.7			
	(66.5, 77.0)	(81.8, 95.1)	(58.0, 71.2)			
Hypertension (HTN) Only	83.2	82.9	83.4			
	(79.6, 86.4)	(76.0, 88.1)	(79.0, 87.4)			
Diabetes Hypertension and / or cardiovascular disease (CVD)	84.6	92.2	73.4			
	(76.7, 90.3)	(84.0, 97.0)	(58.4, 84.1)			

Results	Both sexes %	Male %	Female %
	(95% CI)	(95% CI)	(95% CI)
Sexual Dysfunction by self-reported Fertility Status			
Fertility or Fertile	66.5	72.3	65.4
	(65.6, 67.4)	(70.2, 74.5)	(64.4, 66.4)
Infertility or Sub fertile *Interpret with caution due to small sample size for infertility (n = 144)	64.9 (59.1, 69.9)	91.2 (82.7, 96.7)	58.3 (52.0, 64.4)
Sexual Dysfunction by fruits and vegetables consum	ption		
< 5 serving per day	68.4	77.4	67.5
	(67.6, 69.3)	(74.8, 79.9)	(66.6, 68.4)
≥ 5 serving per day	64.8	67.2	63.2
	(62.9, 66.6)	(64.3, 70.0)	(60.6, 65.5)
Sexual Dysfunction among Tobacco User			
Tobacco Smoking			
Never Smoker	67.7	70.8	67.3
	(66.8, 68.5)	(68.2, 73.2)	(66.4, 68.2)
Ex-Smoker	80.3	82.4	74.6
	(75.9, 84.2)	(77.3, 86.7)	(64.9, 82.1)
Current Smoker	65.7	72.0	54.2
	(62.2, 69.0)	(67.8, 75.7)	(48.3, 60.1)
Social/Occasional Smoker	77.2 (67.5, 85.6)	57.4 (43.3, 72.0)	*
Smokeless Tobacco Use			
Never User	67.6	73.3	67.0
	(66.8, 68.4)	(70.7, 75.9)	(66.1, 67.9)
Ex-User	86.0 (78.4, 92.1)	84.7 (76.5, 91.4)	*
Current User	68.8	69.8	64.8
	(66.0, 71.6)	(66.5, 72.8)	(58.2, 71.6)
Social/Occasional User	60.4	64.2	22.7
	(44.4, 72.7)	(49.6, 78.3)	(2.8, 71.6)
Tobacco User (Smoking and Smokeless)			
Never User	67.6	73.2	67.2
	(66.6, 68.4)	(70.0, 76.2)	(66.3, 68.0)
Ex-User	80.5	81.4	78.6
	(75.3, 85.0)	(75.1, 86.7)	(68.9, 86.3)
Current User	67.2	70.9	58.4
	(64.7, 69.4)	(68.1, 73.5)	(53.9, 62.9)
Occasional User	70.7	51.0	92.1
	(60.3, 79.7)	(36.6, 65.6)	(78.0, 96.5)
Sexual Dysfunction among Alcohol Consumers			
Regular Consumer	68.8	73.4	51.6
	(65.3, 72.1)	(69.5, 76.9)	(43.7, 59.7)
Occasional Consumer	59.2	62.1	56.7
	(56.4, 62.0)	(57.9, 66.1)	(52.8, 60.5)

Results	Both sexes %	Male %	Female %			
	(95% CI)	(95% CI)	(95% CI)			
Sexual Dysfunction by Body Mass Index (BMI)						
Underweight (less than 18.5)	76.5	86.7	74.5			
	(72.8, 80.0)	(77.8, 92.2)	(70.4, 78.5)			
Normal (18.5 - 24.9)	66.8	73.2	65.6			
	(65.6, 67.9)	(70.3, 75.8)	(64.4, 66.9)			
Overweight (25-29.9)	67.0	69.2	66.5			
	(65.6, 68.4)	(65.8, 72.4)	(65.0, 68.1)			
Obesity (30 & above)	71.4	71.9	71.4			
	(69.4, 73.4)	(65.5, 77.4)	(69.2, 73.4)			
Sexual Dysfunction by Blood Pressure	Sexual Dysfunction by Blood Pressure					
Normal Blood Pressure	67.7	71.8	67.1			
	(66.8, 68.5)	(69.3, 74.1)	(66.2, 68.0)			
Raised Blood Pressure	68.8	73.0	66.5			
(Systolic \ge 140 mm of hg and / or Diastolic \ge 90 mm of hg)	(66.7, 70.8)	(69.6, 76.2)	(63.7, 69.0)			
Sexual Dysfunction by Blood Glucose						
Normal Blood Glucose	67.6	71.8	66.8			
(Random Glucose Level < 200 mg/dl)	(66.7, 68.4)	(69.7, 73.8)	(65.9, 67.7)			
Raised Blood Glucose	84.1	86.2	83.2			
(Random Glucose Level ≥ 200 mg/dl)	(79.4, 88.5)	(76.8, 92.6)	(77.0, 88.2)			

* Indicates small sample size

The data has been weighted to be nationally representative of all married men and women aged 30 years and above.

Executive Summary

Introduction

Sexual dysfunction is an impairment in sexual activity, characterized by a loss of desire, arousal difficulties, orgasmic challenges, painful sexual relations, reduced sexual pleasure and difficulty in achieving sexual satisfaction. These challenges may arise from psychological, physical, hormonal or emotional factors. Treatment approaches of sexual dysfunction depend on the underlying cause and may involve medical, psychological, or lifestyle adjustments.

The Global Study of Sexual Attitudes and Behaviors (GSSAB), conducted in 29 countries between 2001 and 2002 among sexually active individuals aged 40 to 80, found that 43% of male and 49% of female experienced at least one form of sexual dysfunction, with a higher prevalence observed in Asia. Besides, sexual dysfunction and mental health are found to be closely interconnected, with each contributing to stress, anxiety, depression, and low self-esteem. It also significantly impacts emotional intimacy, often straining relationships and increasing the risk of conflicts and family breakdowns. Further, it affects overall quality of life, leading to a loss of self-confidence, decreased life satisfaction, and diminished social well-being.

Although few studies have been conducted on different aspects of sexual dysfunction in some countries, research on this topic remains underexplored in Nepal. The limited availability of data has hindered a comprehensive understanding of how sexual dysfunction affects individuals and relationships within Nepalese context. Bridging this knowledge gap and exploring the prevalence of sexual dysfunction, associated risk factors and population level impact is crucial for accurately assessing the burden, identifying at-risk populations and designing evidence-based interventions to improve sexual health and overall wellbeing. To address this, a nationally representative, population-based study was conducted to assess the prevalence of sexual dysfunction among literate, married male and female aged 30 and above in Nepal. Only literate individuals were included, as participants were required to complete self-administered questionnaires, which necessitated at least basic reading and writing skills. In addition, the study also explored the major risk factors associated with sexual dysfunction. The findings from this study serve as a critical foundation for further studies, policy development and interventions aimed at enhancing sexual health outcomes and overall quality of life.

Methodology

This was a nationally representative cross-sectional descriptive study covering all provinces, including three ecological belts and both the urban and rural settings. This study employed a sequential mixed method approach for data collection. Sample households and eligible married male and female aged 30 and above were selected using multistage cluster sampling design.

Quantitative data was collected from 3382 literate male and female aged 30 and above. The sample size was calculated considering the prevalence of sexual dysfunction in Nepal as 73.7% according to hospital based previous study using Cochran's formula with the design effect of 1.5 and 8% of non-response representing seven provinces. Total sample of 3399 was distributed into 34 clusters across provinces, ecology and rural urban settings representing the population distribution of Nepal. Initially, districts from each province were selected using simple random sampling and municipalities within the selected districts were also chosen using the same approach but ensuring representation of both urban and rural settings. Within each selected municipality, one ward was randomly selected and considered as a cluster. Within the selected cluster, a densely populated location was chosen as the starting point for selecting

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sample households. Households with eligible survey participants were identified until a total of 100 sample households were reached. One eligible respondent per household was selected using the KISH Grid table, ensuring an equal probability of selecting literate male and female participants aged 30 and above.

Kobo tool was used to collect socio-demographic information, while sexual dysfunction was assessed through self-administered questionnaires. Male participants were evaluated using the International Index of Erectile Function (IIEF-15) questionnaire, whereas female participants completed the Female Sexual Function Index (FSFI-19) questionnaire to assess sexual function.

Further, data collected from the KOBO toolbox was exported into MS Excel sheet and transferred into IBM SPSS V 26 for data cleaning, editing, recoding and analyzing. Descriptive statistical tools were used for measuring prevalence of sexual dysfunction across various domains.

Data were weighted to ensure the results accurately represented the population distribution across provinces, sex, and age groups (30–39 years, 40–49 years, 50–59 years, and 60 years and above). A total of 56 weight strata were calculated using sample weights and population weights. Qualitative information was collected from In-Depth Interviews (IDI) and Key Informant Interviews (KII). A total of 29 IDI, with 17 female and 12 male who had higher sexual dysfunction scores were conducted. Additionally, 13 KII were carried out with physicians, urologists and obstetrician-gynecologists involved in treatment of patients with sexual dysfunction.

Major Findings

Socio-demographic Characteristics

The proportion of male respondents (51.5%) was nearly the same as the female respondents (48.5%). The largest age group among the participants was 30–39 years accounting for 43 percent of the respondents, followed by the age group 40–49 years at 29 percent. Nearly half of the respondents (47%) were from the Terai region, more than one-third (35%) from the Hill region and the remaining 18% from the Mountain region. Across the seven provinces, the highest proportion of respondents (18%) was from Bagmati Province, followed by Madhesh Province (17%). Additionally, approximately two-thirds (65%) of the respondents were from urban municipalities which has ensured our sample size is proportionate to the population of Nepal.

Prevalence of Sexual Dysfunction

More than two-thirds of the total respondents (67.8%) were identified as having potential sexual dysfunction with male (72.2%) having higher prevalence than female (67.0%). Three-fourth of both the male (75.3%) and female (73.5%) respondents had difficulty reaching orgasm. Similarly, more than 90 percent of both male and female respondents reported loss of sexual desire. Among the male participants who had sexual dysfunction, about one-third (31.7%) had mild erectile dysfunction. Whereas among female participants who had sexual dysfunction, 94.3 percent had compromised sexual arousal.

Across the ecological belts, sexual dysfunction prevalence was similar in Terai (68.8%), Hill (66.4%) and Mountain (66.1%). Whereas, prevalence of sexual dysfunction among male and female respondents was found to be different. Among male, highest prevalence was observed in the Mountain region (79.8%) while among female highest was in the Terai region (69.2%).

However, across provinces, highest prevalence was in Madhesh Province (72.6%), followed by Karnali Province (71.5%) and lowest was in Lumbini province (52.3%). Similar to the ecological belt, the prevalence of sexual dysfunction was different among male and female respondents. Among male, prevalence was highest in Karnali province (82.4%) and lowest in Madhesh province (64.1%) whereas among female participants, prevalence was highest in Madhesh province (73.3%) and lowest in Lumbini

province (40.8%). Besides, respondents who married at an early age (18 years or younger) had a higher prevalence of sexual dysfunction (68.4%) compared to those who married at age 25 or above (60.9%).

Morbidity and Sexual Dysfunction

Out of total respondents about one fifth (19%) reported having chronic diseases among whom 12 percent had a single disease and remaining 7 percent had two or more diseases. Male respondents with diabetes mellitus alone exhibited a higher prevalence of sexual dysfunction (89.6%) compared to those with hypertension alone (82.9%). Whereas, among female respondents, the proportion of potential sexual dysfunction was higher in those with hypertension alone (83.4%) compared to those with diabetes alone (64.7%).

Among, male respondents, those who reported subfertility/infertility problems had a higher proportion of sexual dysfunction (91.2%) compared to those who did not report infertility (72.3%). Among female respondents, the proportion of sexual dysfunction was higher among those who reported no subfertility/ infertility problems (65.4%) compared to those who reported infertility problems (58.3%).

Diet Pattern and Sexual Dysfunction

According to WHO, more than 5 servings of fruits and vegetable (400gm) intake per day is considered as proxy indicator for healthy diet. It was found that the prevalence of sexual dysfunction was higher among those with unhealthy diet (68.4%) compared to individuals consuming healthy diet (64.8%). The difference was consistent among both the male and female respondents.

Use of Tobacco and Alcohol Consumption Habit and Sexual Dysfunction

The prevalence of sexual dysfunction was observed higher among ex-smokers (80.3%) than current (65.7%) and never smokers (67.7%) for both male and female. Findings also reveal that comorbidity was higher among ex tobacco users (40.8%) than current users (15.8%). Similarly, the proportion of sexual dysfunction was observed higher among ex-users of smokeless tobacco (86.0%) than never users of smokeless tobacco (67.6%). The differences in prevalence of sexual dysfunction between never smokers and ex-smokers of both the smoking and smokeless tobacco indicates higher chances of sexual dysfunction with long term use of tobacco.

Further, prevalence of sexual dysfunction in male was observed higher among those who consume a high-risk level of alcohol (66.8%) compared to those who consume medium risk level of alcohol (64.9%). Among three groups of alcohol consumption level in male respondents, it was observed that respondents with morbidity have the higher sexual dysfunction compared to the respondents who have no morbidity (79.5% vs 65.8% at low risk, 76% vs 62% at medium risk and 100% vs 60.3% at high risk respectively).

Body Weight, Blood Pressure, Blood Sugar and Sexual Dysfunction

Sexual dysfunction was higher among both underweight (includes participants with morbidity) (76.5%) and obese (71.4%) individuals compared to the individuals with normal BMI (66%). Similarly, sexual dysfunction was notably higher (84.1%) among the respondents with raised blood glucose level (random > 200 mg/dl) compared to those with normal blood glucose level (67.6%). The variation is consistent among both the male and female.

However, for blood pressure, sexual dysfunction was similar among respondents with normal blood pressure (67.7%) and those with raised blood pressure (68.8%).

Reasons for Service Seeking Behavior of Individuals with Sexual Dysfunction

While discussing with physicians/medical experts as well as individuals with sexual dysfunction, it was revealed that busy schedules, stress, separation from spouse, conflict between partners, family disputes, work-life imbalance, infections (penile, vaginal, pelvic), and partner's compromised health conditions

are the major contributors to sexual dysfunction. In addition, service providers highlighted that over 90% of sexual dysfunction cases are psychogenic (including stress, anxiety, depression, and post-traumatic stress disorder), creating a vicious cycle. Further, the respondents from KII disclosed that a very few people communicating about their sexual dysfunction might be due to lack of privacy and confidentiality at service outlets. It was also emphasized that many individuals with sexual dysfunction seek treatment from traditional healers and take unapproved medicines sold by unauthorized and unqualified dealers before visiting professionally trained health experts.

Conclusions

Sexual dysfunction is highly prevalent in Nepal among married individuals aged 30 and above with notable variations in prevalence across sex, age groups, ecological belts and provinces. It is higher among male with the majority complaining of compromised sexual desire. Among female with sexual dysfunction, the majority experience compromised sexual arousal.

The study also reveals the complex interplay between Patho-physiological, psychological, vasculogenic and lifestyle related determinants of sexual dysfunction. Patho-physiological factors such as underweight, obesity, and elevated blood glucose levels are significant contributors of sexual dysfunction. Similarly, psychosocial factors such as stress, work-life imbalance, separation, and performance anxiety play a crucial role in increasing sexual dysfunction. Further, lifestyle related factors like unhealthy diet, tobacco use (both smoking and smokeless), high-risk alcohol consumption and morbidities such as diabetes mellitus, cardiovascular disease, infertility and other conditions are also linked to increased sexual dysfunction.

Overall, the findings highlight the multifaceted nature of sexual dysfunction in Nepal indicating a need for targeted interventions addressing medical, lifestyle, and psychosocial factors through collaborative efforts from individuals, couples, healthcare providers, civil society organizations and policymakers to improve sexual health and well-being.

Recommendations

To promote comprehensive sexual health and well-being, it is crucial to increase awareness of healthy sexual relationships and behaviors, foster open and approachable discussions on sexual health and reduce stigma. Integrating the prevention and control of sexual dysfunction, as well as the promotion of responsible sexual well-being, into existing community engagement programs such as mothers' groups, consumer groups, and community-led health initiatives can enhance community participation there by reducing stigma, discrimination, and social taboos. This approach will also improve access to sexual health care services. Similarly, educating young people on healthy behaviors, proper nutrition, and the risks associated with tobacco and alcohol use while also informing them about the legal age for marriage and enhancing their understanding of sexuality through comprehensive sexuality education can empower them to make informed decisions that promote both sexual health and overall well-being.

Furthermore, sexual health care services, including sexuality education and counseling, treatment of sexual dysfunction, psychosexual therapy, and the prevention of sexual violence, should be integrated into existing Sexual and Reproductive Health and Rights (SRHR) policies and programs. Given that sexual dysfunction shares common risk factors with non-communicable diseases (NCDs) such as diabetes, cardiovascular disease, cancer, chronic lung disease, and mental health disorders, integrating sexual health into NCD prevention and control programs is essential. Moreover, sexual health components should be included in both pre-service and in-service training curricula, with compulsory capacity-building programs for health service providers, educators, and health promoters.

In addition, establishing dedicated multi-specialty sexual health clinics and counseling centers in hospitals and healthcare facilities will ensure accessibility for service seekers. Incorporating sexual

health into regular health check-ups and referral systems will facilitate the screening and treatment of potential sexual dysfunction cases. Additionally, mechanisms should be in place to screen individuals with diabetes, cardiovascular disease, infertility, and mental health disorders for sexual dysfunction, as these conditions are highly associated with sexual health issues.

The recommendations discussed above can be effectively achieved with work division of responsibilities among different levels: Ministries, provincial and local government and organizations working on Sexual and Reproductive Health and Rights (SRHR).

Ministry of Health and Population (MoPH) and its Departments:

- 1. Sexual health especially sexual dysfunction should be clearly incorporated in the national policy, strategy and action plans.
- 2. Standardized managements, protocols, guidelines and training materials of Sexual dysfunction should be formulated.
- 3. For awareness campaigns, necessary IEC BCC materials related to sexual dysfunction should be designed, developed and distributed.
- 4. Establish and operate well-equipped sexual health clinic separately for men and women with proper and adequate infrastructure with well-trained personnel in tertiary level.

Ministry of Education, Science and Technology (MoEST):

- 1. Incorporate comprehensive sexuality education in the curriculum from school to university levels.
- 2. Precise teaching guideline, textbook and self-learning modules related with sexual education should be developed and distributed.

Province and Local Level Authorities:

- 1. Implement sexual health services especially sexual dysfunction services in primary health care facilities.
- 2. Conduct training related to sexuality education focusing on sexual dysfunction to health care workers with regular refresher trainings.
- 3. Conduct training related to sexuality education to enhance capacity of the teachers for delivering sexuality education with timely refresher trainings.
- 4. Conduct awareness programs in accordance with established guidelines, targeting various groups such as schoolchildren, out of school children, and communities, using IEC BCC materials.
- 5. Ensure proper implementation of the Comprehensive Sexuality Education (CSE) programs through regular supervision and joint monitoring by both health and education departments.

Organizations Working on Sexual and Reproductive Health and Rights (SRHR):

- 1. Support the programs of MoHP and MoEST for capacity building of sexual health services and sexuality education.
- 2. Integrate issues related to sexual dysfunction into their programs and activities.
- 3. Help to generate positive public opinion and promote public discourse on sexual dysfunction through media mobilization.

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Abbreviations

BCC	Behavior Change Communication
BMI	Body Mass Index
BPH	Benign Prostatic Hyperplasia
CEB	Children Ever Born
CI	Confidence Interval
COPD	Chronic Obstructive Pulmonary Disease
C-section	Cesarean Section
CSE	Comprehensive Sexuality Education
CVD	Cardiovascular Disease
DM	Diabetes Mellitus
ED	Erectile Dysfunction
FGM	Female Genital Mutilation
FSD	Female Sexual Dysfunction
FSFI	Female Sexual Function Index
FWD	Family Welfare Division
GSSAB	Global Study of Sexual Attitudes and Behaviors
HIV	Human Immunodeficiency Viruses
HSDD	Hypoactive Sexual Desire Disorder
HTN	Hypertension
IDI	In-Depth Interviews
IEC	Information Education Communication
IIEF	International Index of Erectile Function
IVF	In Vitro Fertilization
KII	Key Informant Interviews
NA	Not Applicable

NCD	Non-communicable Disease
NSDS	Nepal Sexual Dysfunction Survey
PID	Pelvic Inflammatory Disease
PSU	Primary Sampling Unit
PTSD	Post-Traumatic Stress Disorder
RH	Reproductive Health
RTI	Reproductive Tract Infections
SD	Sexual Dysfunction
SLC	School Leaving Certificate
SOLID Nepal	Society for Local Integrated Development Nepal
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health and Rights
STI	Sexually Transmitted Infections
TU	Tribhuvan University
TUTH	Tribhuvan University Teaching Hospital
UIN	Unique Identification Number
UNFPA	United Nations Population Fund
WHO	World Health Organization

1. Introduction

1.1 Background

Sexual health is a fundamental component of human wellbeing which encompasses state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity (1). The definition of a satisfying sex life is highly subjective and it varies among individuals. However, sexual well-being or the lack thereof has a comparable effect on most people's overall quality of life. Sexual health is essential for the holistic well-being of individuals, couples and families which significant contribution to the social and economic progress of communities and nations. Embracing a positive and respectful attitude towards sexuality and sexual relationships is at the core of sexual health, which requires creating an environment where individuals can engage in enjoyable and safe sexual experiences without any form of coercion, discrimination, or violence (2).

There are wide range of sexual health related issues. Issues such as Sexually Transmitted Infections (STIs), unintended pregnancy, abortion, sexual violence and harmful practices prevents individuals from enjoying safe sexual experiences. Among these issues, sexual dysfunction is one of the pervasive yet overlooked public health concerns that significantly affects the overall well-being and quality of life of individuals. It is a difficulty experienced by an individual or couple during any stage of sexual activity, including physical pleasure, desire, preference, arousal or orgasm. Moreover, these can have profound implications for intimate relationships and mental health (1).

Global epidemiological studies have reflected the magnitude of this issue. A multinational study conducted across 29 countries during 2001 and 2002 among the sexually active respondents aged 40 to 80 years showed, 43 percent of men and 49 percent of women reported at least one sexual dysfunction and this proportion was greater in Asian population. Among the sexual dysfunction, premature ejaculation and inability to maintain the erection in men and lack of sexual interest and inability to reach orgasm in women was the most common sexual problem. The study's findings reveal a concerning prevalence, with a substantial portion of men and women reporting at least one sexual dysfunction (3). Another study conducted in the United States in 2000, shows a similar prevalence of sexual dysfunction, affecting approximately 43 percent of women and 31 percent of men. This comprehensive review examines sexual dysfunction from both male and female perspectives and it has identified sexual arousal disorders, including erectile dysfunction in men and female sexual arousal disorder, with prevalence rates ranging from 10 percent to 20 percent across genders and strongly correlated with age in men. Orgasmic disorder was relatively common among women, affecting approximately 10 percent to 15 percent as per the community-based studies. Conversely, premature ejaculation was the most frequent sexual complaint among men, with a reporting rate of around 30 percent in various studies. Additionally, sexual pain disorders are reported in approximately 10 to 15 percent of women and less than 5 percent of men (4). A systematic review done in 2015 also reported that desire and arousal dysfunction in women and erectile dysfunction (ED) and premature ejaculation in men are the most common sexual dysfunction (5).

A study conducted in Asia reveals that among adult women, approximately 40–45 percent encounter at least one distinct sexual dysfunction, with frequencies escalating with advancing age. However, for men, prevalence rates fluctuate, with roughly 25 percent encountering sexual dysfunction, encompassing conditions like erectile dysfunction (ED) and ejaculatory disturbances, with incidence amplifying with age. Notably, the prevalence of ED ranges from 1–10% below the age of 40 but surges to 50–100 percent in men aged 70s and 80s (6). These findings underscore the ubiquity of sexual dysfunction, exerting an impact on a noteworthy segment of the adult population. A systematic review based on 22 studies

1

conducted in 11 countries, revealed a wide range of prevalence rates for sexual difficulties in women, ranged between 5.5 percent and 77 percent and sexual pain, ranged from 3 percent to 95.5 percent. The prevalence was strikingly high among Iranian and Indian women and it was low among women from Malaysia and United Kingdom (7). A comprehensive review demonstrated a wide prevalence of ED across continents, ranging from 13.1 percent to 71.2 percent. The study highlighted geographical disparities, revealing lower prevalence rates in North America and Europe in comparison to Asia, Oceania, and Africa (8). A study conducted among Asian men reported varying rates of erectile dysfunction (ED), ranging from 0 percent to 95 percent, with higher prevalence in older age. Mild ED was found in 2.5 percent to 77 percent of Asian men, while mild to moderate ED ranged from 5 percent to 31.6 percent. Additionally, premature ejaculation (PE) was prevalent in 0 percent to 49.1 percent of Asian men, with higher rates observed in older age groups. Sexual desire disorders, particularly Hypoactive Sexual Desire Disorder (HSDD), affected 0.7 percent to 81.4 percent of Asian men, with increasing prevalence in older cohorts (9). The prevalence rates of sexual dysfunction vary widely due to various factors such as age, definitions used, and cultural differences.

Besides their widespread prevalence, sexual dysfunction significantly affects interpersonal functioning and overall quality of life in both men and women. A number of studies have shown an association between sexual dysfunction and chronic diseases and several underlying conditions. A review highlighted diabetes as an established risk factor for sexual dysfunction particularly in men. The review reported a threefold increased risk of erectile dysfunction in diabetic men compared to nondiabetic men (10). Although evidence regarding the association between diabetes and sexual dysfunction among women are less conclusive, most studies report a higher prevalence of female sexual dysfunction in diabetic women compared with nondiabetic women. Another review underscored the substantial impact of ED on the quality of life for men and their partners, emphasizing its association with conditions such as cardiovascular disease (CVD), benign prostatic hyperplasia (BPH), and dementia. Early detection and treatment of ED could serve a dual purpose of improving cardiovascular health and enhancing overall quality of life by addressing the underlying sexual dysfunction (8). Furthermore, a review suggested that Female Sexual Dysfunction (FSD) indicates underlying chronic diseases. The study highlighted the links between FSD and conditions like diabetes, cardiovascular disease, and neurological disorders. The review reported diabetic women often experience higher rates of FSD. Neurological conditions such as multiple sclerosis and Parkinson's disease also affect sexual function in women. It is important to recognize FSD as a potential indicator of chronic illness emphasizing the importance of integrated care approaches for addressing both sexual and overall health concerns (11).

In the context of Nepal, a study conducted among diabetic and non-diabetic people attending Tribhuvan University Teaching Hospital (TUTH), Kathmandu Nepal showed a strong association of sexual dysfunction with individuals with diabetes (81.5%), male sex, tobacco use, and hypertension with the prevalence rate of 73.7% with higher in men 83.9% than women 63.6%. This observed high prevalence of sexual dysfunction in both diabetic and non-diabetic people is a public health concern (12). Similarly, another study conducted in a tertiary hospital in Nepal has shown a high prevalence of sexual dysfunction in female with higher severity of depression (76.19%). It also showed a higher level of psychological distress (86.67%) in female who suffer from sexual dysfunction (13).

The available data and statistics show high prevalence of sexual dysfunction, it's noteworthy that the available information is dated, and current prevalence rate for sexual dysfunction are lacking.

Moreover, in a country like Nepal, the issue of sexual dysfunction remains underexplored, with limited evidence on its prevalence, associated risk factors, and impact on the population. Additionally, as per the existing literature, which indicates that sexual dysfunction can be influenced by several factors, including but not limited to sociodemographic variables, mental health, chronic medical conditions, and lifestyle factors. Understanding the prevalence and correlates of sexual dysfunction in Nepal is thus crucial for tailoring effective preventive interventions.

1.2 Statement of the Problem

Sexual dysfunction is a common yet under-recognized health issue affecting individual. Despite its significant impact on physical, psychological, and social well-being, sexual dysfunction remains largely undiagnosed and untreated in countries like Nepal due to paucity of evidence, lack of awareness, and cultural taboos. Existing sexual and reproductive health programs predominantly focus on family planning, maternal, neonatal health and sexually transmitted infections with minimal attention to sexual dysfunction and its broader consequences. Further, the conservative nature of Nepalese society limits open discussions about sexual health, contributing to underreporting and a lack of diagnosis for sexual dysfunction. Barriers such as social stigma, lack of information, logistic challenges and ineffective implementation of curriculum based CSE in school and out of school hinder individuals, especially the youth, from seeking sexual and reproductive health services. Additionally, the increasing urbanization and changing lifestyle factors in Nepal have led to a growing burden of non-communicable diseases, such as diabetes, hypertension, and mental health disorders, which are known risk factors for sexual dysfunction.

Currently, there is no comprehensive study assessing the prevalence and associated risk factors of sexual dysfunction in Nepal. Factors such as age, psychological conditions (e.g., stress, anxiety, depression), chronic illnesses (e.g., diabetes, hypertension), lifestyle behaviors (e.g., smoking, alcohol consumption, physical inactivity), and relationship dynamics have found to play a crucial role in sexual dysfunction among individuals across different countries. The few existing studies in the context of Nepal indicate that male are more likely to seek medical help for sexual dysfunction compared to female, who face greater stigma and shame in discussing these issues and factors such as marital status, age, education level, and comorbid conditions like diabetes may influence the prevalence of sexual dysfunction. However, the specific sociodemographic and clinical determinants remain unexplored in the Nepalese context.

Understanding the prevalence and determinants of sexual dysfunction is essential to contribute to improving mental health outcomes, relationship satisfactions and overall sexual health ultimately improving quality of life for affected individuals. However, without empirical evidence, designing effective interventions to address this issue remains challenging. This study thus aimed to bridge this gap by determining the prevalence and identifying the socio-demographic, behavioral, and clinical factors associated with sexual dysfunction among Nepalese adults and support in the development of effective interventions and policies to address sexual health issues in the country.

1.3 Rationale and Justification

Despite the global recognition of sexual dysfunction as a public health concern, Nepal lacks comprehensive data on its prevalence and associated factors. Further, recognizing sexual health as a fundamental aspect of overall well-being underscores the importance of studying sexual dysfunction within Nepalese context. Thus, this cross-sectional study was designed with the primary objective of conducting a prevalence study of sexual dysfunction in Nepal and identifying potential risk factors associated with its occurrence. Additionally, the study aimed to explore the potential links between sexual dysfunction and chronic diseases, including mental health conditions. The findings of this research will not only contribute to the understanding of the prevalence of sexual dysfunction in Nepal but also serve as valuable insights for policymakers and public health experts. The information derived from this study will aid in the development of targeted strategies and programs aimed at promoting sexual well-being within the Nepalese population. Ultimately, the research aspires to foster a more open and informed dialogue surrounding sexual health, reduce stigma associated with sexual dysfunction, and enhance the overall quality of life for individuals in Nepal.

1.4 Research Objectives

1.4.1 General Objective

The general objective of this study is to assess the prevalence of sexual dysfunction in Nepal.

1.4.2 Specific Objectives

- To identify potential risk factors associated with the occurrence of sexual dysfunction in the married adults aged 30 or above in Nepal.
- To identify the association between sexual dysfunction and chronic diseases.
- To provide valuable insights for policymakers and public health experts that can be utilized in the development of targeted strategies and programs aimed at promoting sexual well-being in Nepal.

2. Methodology

The Nepal Sexual Dysfunction Survey 2024 (NSDS 2024), a nationally representative cross-sectional study, was carried out to ascertain the prevalence of sexual dysfunction in Nepal's population. The study applied a sequential mixed-method design to examine the prevalence and associated risk factors. A sample of 3,382 married and literate male and female aged 30 or above, drawn from 34 clusters (Annex VII), participated in the survey. These 34 clusters were identified using a multistage cluster sampling technique in seven provinces that represented both urban and rural settings as well as the three ecological belts as Terai, Hill, and Mountain.

Sample Size

The minimum sample size for each province was calculated, to estimate the prevalence of sexual dysfunction by using following formula.

 $n = [Z^2 \times P \times (1-P)] / d^2$

Where:

Z = 1.96 (at 95% level of confidence)

P = Prevalence of the sexual dysfunction which was 73.3% in a previous study(14).

d = 0.05 (margin of error)

Using this formula, the calculated sample size per province was 300.74. To account for a non-response rate of 7.5% (based on the pilot study of 40 individuals where three participants did not respond) and applying the design effect of 1.5, the adjusted sample size per province increased to 485. Thus, for all seven provinces, total required sample size was calculated as follows:

ntotal = $[[Z^2 \times P \times (1-P)]/d^2 \times \text{design effect} \times \text{number of provinces}] \times [1/(1-\text{non-response rate})]$

This yielded a total sample size of 3413 individual across all provinces. The total sample was further distributed into 34 clusters with $100.38 \approx 100$ individuals' sample from each cluster which brought the total sample size to 3400.

Sample Distribution

As the provinces are primary domains, the sample population was first stratified by the seven provinces of the country. Within each province, districts were selected as Primary Sampling Units (PSUs) using a simple random sampling method. The number of districts in each province and the number of districts selected are detailed below:

Province	Total Districts	Selected Districts
Koshi Province	14	5
Madhesh Province	8	6
Bagmati Province	13	6
Gandaki Province	11	4
Lumbini Province	12	5
Karnali Province	10	4
Sudurpaschim Province	9	4
Total	77	34

|--|

In total, 34 districts out of 77 were selected, ensuring at least four districts from each province.



Figure 1: Map of Nepal Highlighting Sampled Districts

Within each selected district, a municipality was chosen using simple random sampling. Following this, a ward within each selected municipality was randomly selected using the same method. During the selection process, districts were first categorized based on their ecological belts (Mountain, Hill, Terai) and aligning with the population distribution of the belts, districts were selected as 6 districts from Mountain, 12 from Hills and 16 from Terai. Similarly, municipalities of selected districts from each province were grouped into rural and urban categories and were selected using simple random sampling techniques considering the population distribution which was approximately proportionate within these categories. A ward within the municipality was also selected using simple random sampling method which became the cluster of this study. The sample distribution, in this way, approximately aligned with the proportion of the population distribution on provinces, ecological belt and rural and urban settings. Details of the sample distribution is explained in table 2. In each selected cluster, households with eligible survey participants were identified until a total of 100 sample households were reached within one selected cluster. One eligible respondent per household was selected using the KISH Grid table (Annex VIII), ensuring an equal probability of selecting male and female participants aged 30 and above who were literate.

Location	Sample	Size (n)	% of Total Sampled Obtained
Location	Assigned	Obtained	
Province			
Koshi	500	496	14.7
Madhesh	600	591	17.5
Bagmati	600	598	17.7
Gandaki	400	399	11.8
Lumbini	500	500	14.8
Karnali	400	397	11.7
Sudur Paschim	400	401	11.8

Table 2 Sam	nla Siza Distribution 1	y Drowinco Ecolo	gical Balt and	Inhan Dural Satting
Table 2. Salli	pie size Distribution	by Province, Ecolo	gical Dell allu	Orban Kurai Settings

Location	Sample	e Size (n)	% of Total Sampled Obtained
Location	Assigned	Obtained	
Ecological Belt			
Terai	1600	1589	46.9
Hills	1200	1196	35.5
Mountain	600	597	17.6
Residential Settings			
Urban	2200	2186	65
Rural	1200	1196	35
Total	3400	3382	100

Source: NSDS 2024

Overall, the survey successfully covered a total of 3,382 individuals, ensuring broad and representative coverage across all provinces of the country. The non-response rate was minimal (0.5%).

For qualitative data, the quantitative dataset was first analyzed to identify individuals with higher sexual dysfunction. Subsequently, among these individuals, participants were selected for In-depth Interviews (IDI) ensuring representation from all seven provinces and three ecological belts of Nepal. The researcher communicated with those individuals and carried out the interviews to further explore the causes and consequences of sexual dysfunction. The IDI was carried out among a total of 29 individuals (17 female and 12 male). Similarly, 13 Key Informant Interviews (KII) were conducted among the physicians, urologists and obstetrician-gynecologists involved in treatment of individuals with sexual dysfunction.

Weighting the Data Using Population and Sample Weights

Data weighting was conducted by calculating both sample weights and population weights to ensure representativeness. The weights were categorized based on age groups (30–39 years, 40–49 years, 50–59 years, and 60 years and above) and sex (male and female) and were stratified by province. The process involved the following steps:

- 1. The samples obtained from each province were first classified according to age group and sex.
- 2. Correspondingly, the distribution of the eligible population by same age group and sex was obtained from the most recently carried out national census report 2022.
- 3. The proportions of the eligible population for each age group and sex were calculated.
- 4. Sample weights for each age group and sex were computed.
- 5. The proportions of the weighted sample by age group and sex were determined.
- 6. Population weights for each age group and sex were calculated by dividing the population proportions by the weighted sample proportions.
- 7. A total of 56 weight strata were calculated using sample weights and population weights.

Techniques and Tools

Face-to-face interview, physical measurement and self-administered questionnaire-based assessment are the major techniques used for this study.

A set of structural interview schedule was developed to explore socio-demographic and health status of the research participants (Annex I). Age, sex, religion, socioeconomic status, lifestyle behavior, occupation, chronic disease, smoking and alcohol consumption, obesity (height and weight), blood pressure and level of blood glucose (random) were taken as independent variables whereas level of sexual dysfunction was dependent variable of this study.

The physical measurement of the participants was carried out using a standard weighing scale, measuring tape, digital sphygmomanometer and glucometer.

Self-Administered Questionnaires (SAQs) for assessing sexual dysfunction were used among eligible participants. For male participants, the **International Index of Erectile Function (IIEF-15)** (Annex-II) was used, while for female participants, **the Female Sexual Function Index (FSFI-19)** (Annex-III) was applied to gather data on sexual function.

In IIEF-15, there are five domains namely i. Erectile Dysfunction, ii. Intercourse Satisfaction, iii. Sexual Desire, iv. Orgasm and v. Sexual Satisfaction of sexual function where as in FSFI-19, there are six domains namely i. Sexual Desire, ii. Arousal, iii. Lubrication, iv. Orgasm, v. Sexual Satisfaction and vi. Pain during Intercourse.

Interview schedule for collecting sociodemographic information was done using Kobo Toolbox. The field researchers carried out the physical measurements, that was also recorded in the Kobo toolbox. The SAQs regarding sexual dysfunction (IIEF-15 for male and FSFI-19 for female) were distributed to the participants along with the unique identification code for each participant which was generated by the kobo toolbox during the collection of sociodemographic information of that participant. Those SAQs filled by the participants were entered into the KoBo toolbox by the field researchers. The collected data were uploaded directly to the server on a daily basis using internet services. In case of unavailability of the internet, the data were stored on the mobile devices and uploaded to the server once connectivity was restored.

The uploaded data were stored on the KoBo toolbox. All data were then exported into Microsoft Excel and subsequently transferred to IBM SPSS Version 26 for data cleaning, editing, recoding, and analysis.

This study utilized the WHO STEPS Survey tools and measurement standards for collecting sociodemographic information and physical measurements. Measurement standards used in this survey are explained as follows:

Measurement of Consumption of Fruits and Vegetables

Respondents were asked about the amount of fruits and vegetable consumption with the help of show card developed by WHO STEPS Survey 2019 (Annex V). In this study, one standard serving is equal to 80 grams (converted into equivalent cup measurements depending on the type of vegetables and standard cups measures available in the country) as mentioned in the Table 3 below.

Table 3.	Amount	of fruits a	nd vegetab	les for one	e standard	serving	of fruits an	d vegetables
						··· 0		

Vegetables	Fruits				
• One cup of raw green leafy vegetables (spinach, salad etc.)	• One medium size of apple, banana, orange				
• Half cup of other vegetables cooked or chopped raw (tomato, carrots, beans, pumpkins etc.)	• Half cup of chopped cooked canned fruits				
• Half cup of Vegetable juice	• Half cup of fresh fruit juice (not artificially flavored)				

Source: WHO STEPS Survey 2019

In addition to daily serving of fruits and vegetables, respondents were also asked about the number of days per week they consumed fruits and vegetables, as well as the number of servings they consumed on those days. Based on their responses, the standard serving size was calculated.

Measurement of Alcohol Consumption

Respondents who had consumed alcohol in the past 12 months were asked about their alcohol consumption behavior showing a card (Annex VI) explaining standard drinks of varieties of alcohol. Card was developed based on the WHO NCD STEPS Survey 2019. One standard drink is the measure of the amount of pure alcohol consumed, usually between 8 grams and 12 grams. In this survey the alcohol

content of a standard drink was approximately calculated as 10 grams of ethanol. According to WHO show card used in the STEPS survey, one standard drink is equal to one standard bottle of regular beer (chyang, tongba, tadi, apple cider)-285 ml, one measure of spirits (rum, whiskey, vodka, brandy)-30 ml, one medium size glass of wine-120 ml and one measure of homemade spirits (rakshi)-50 ml.

Measurement of Height

For measuring the height, participants were asked to remove shoes, hair accessories, caps, and bulky clothing and then stand on their feet flat on the floor with heels against the wall corner. The head, shoulders, and buttocks were positioned against the wall with the chin parallel to the floor. A ruler was placed at a right angle on the wall to touch the top of the head, and a pencil mark was made at the point of contact. The distance from the floor to the mark was measured using a metal measuring tape, and the height was recorded in centimeters.

Measurement of Weight

For the weight measurement, a portable digital weighing scale was used. The scale was placed on a flat, stable surface. The participants were instructed to remove their footwear, socks, mobile phones and bulky clothing and they were requested to stand on the scale with one foot on each side, and face forward with arms relaxed at their sides. They were asked to remain still until instructed to step off the scale and the weight was recorded in kilograms.

Measurement of Blood Pressure

Blood pressure was measured with a digital, automated blood pressure monitor (OMRON digital device). Before taking the measurements, participants were asked to sit quietly and rest for 15 minutes with legs uncrossed. Three readings of the systolic and diastolic blood pressure were obtained resting for three minutes between each reading. The mean of the three readings were analyzed. The sphygmomanometer cuff was placed on the left arm while the participant rests their forearm on a table with the palm facing upward. Participants were requested to remove or rollup clothing on the arm and the cuff was kept above the elbow aligning the mark for artery (ART) on the cuff with the brachial artery and making sure the lower edge of the cuff is placed 1.2 to 2.5 cm above the inner side of the elbow joint and with the level of the cuff at the same level as the heart. The recorded blood pressure was classified as per the WHO classification. According to WHO, systolic < 140 mmHg and diastolic < 90 mm HG is considered as normal, systolic ≥ 140 mmHg and /or diastolic ≥ 90 mmHg is considered as high blood pressure (Hypertension).

Measurement of Blood Glucose

Random blood glucose level of the participants was measured using the FIA Biomed Blood Glucose Meter-Salut, a portable device for rapid and accurate data collection. A small blood sample was drawn from each participant's finger using a sterile lancet after proper disinfection. The sample was then applied to a test strip inserted into the device, which provided glucose level readings within seconds, ensuring an efficient and standardized measurement process. As per WHO, cutoff point for diagnosing as hyperglycemia from random blood glucose level is 200 mg/dl. This cutoff point was used to categorize to the blood glucose level of the participants.

Pretesting of the Tools

The survey tools were pretested with 40 individuals (20 male and 20 female) residing in Lalitpur district who met the study's inclusion criteria. Among 40 participants, three did not respond during the pre-test. Based on this, non-response rate was calculated as (7.5%) and this was considered while calculating the required sample size.

The purpose of the pre-test was to check the clarity and relevance of the tools, ease or reluctance of the respondents and time taken for each interview. The results of the pretesting were incorporated to further refine the interview schedule and pre-empt pitfalls during research process.

Data Management

The set of questionnaires used to collect socio-demographic and health status of research participants was labeled as Group A. The standard sexual function assessment tools- IIEF and FSFI were labeled as Group B and Group C respectively. Each participant was assigned with a Unique Identification Number (UIN) generated by kobo toolbox during the collection of data in Group A while collecting data from Group B and Group C. Additionally, to maintain data quality and consistency, a detailed question to question guide was prepared and distributed to the field officers.

Data Analysis

The quantitative data was analyzed using IBM SPSS Statistics 26 employing descriptive statistical technique. For qualitative data thematic analysis was carried out where emerged themes were analyzed and interpreted.

Ethical Consideration

The study received ethical approval from the Nepal Health Research Council (NHRC) (Protocol number: 242-2024) on May 7, 2024. The Ethical Review Board of NHRC conducted a thorough evaluation of the study's methodology, procedures, and ethical safeguards. To uphold participants' privacy and confidentiality, a separate written informed consent form (Annex IV) was developed and utilized.

Field researchers underwent specialized training on collecting sensitive data while strictly adhering to ethical standards. This training emphasized the importance of confidentiality, voluntary participation, and respect for participants' rights. Prior to data collection, the purpose and procedures of the study were clearly explained to all participants. Informed consent was obtained from each participant, who were also informed of their right to withdraw from the study at any point without any negative consequences. All participants were anonymized and given only Unique Identification Number. The collected data is stored in password protected server and physical copies are securely stored under the supervision of the Principal Investigator to ensure privacy and confidentiality.

Reliability and Validity of the Study

Reliability

Reliability in research refers to the consistency and repeatability of the measurement tools and procedures used in the study. This study demonstrates a high degree of reliability due to the following reasons:

- **Standardized Tools:** The study applied internationally validated instruments, IIEF-15 (15) for male and FSFI-19 (16) for female to assess sexual dysfunction and WHO Steps survey questionnaire for collecting sociodemographic information, ensuring consistent and reliable measurement across participants.
- **Trained Field Researchers:** Field researchers were provided four days training specialized with on sensitive data collection procedures, including physical measurements and the use of the KoBo Toolbox for digital data entry. This reduces inter-rater variability and enhances consistency.
- **Pretesting:** All survey tools were pretested among a representative sample (n = 40) to refine language, structure, and administration procedures. This helped in identifying and correcting any ambiguities or issues, contributing to the internal consistency of the instruments.

- **Cronbach Alpha Calculation:** To evaluate reliability, Cronbach's Alpha was calculated, yielding a value of ≥ 0.9, which indicates an excellent level of internal consistency and reliability of the measurement tools.
- Use of Digital Tools: KoBo Toolbox was used for real-time data collection, minimizing manual entry errors and ensuring uniformity in data recording and storage.
- Objective Physical Measures: Standard protocols were followed for collecting physical measurements (e.g., blood pressure, height, weight, blood glucose), using calibrated instruments and WHO STEPS guidelines, ensuring reproducibility of data.

Validity

Validity refers to the accuracy and appropriateness of the tools and procedures in measuring what they are intended to measure. The study established both internal and external validity through several strategies:

- **Content Validity:** The survey instruments (IIEF-15 and FSFI-19) covered multiple relevant domains of sexual function, ensuring comprehensive measurement of the construct. Additional data on socio-demographic and health variables enhance the depth of analysis.
- **Construct Validity:** The inclusion of established risk factors (e.g., smoking, alcohol use, chronic diseases) as independent variables, along with validated sexual function indices, reinforces the theoretical grounding of the study.
- **External Validity:** The study used a multistage cluster sampling method across all seven provinces of Nepal, covering urban, rural, and ecological belts (Terai, Hill and Mountain). This ensures the generalizability of the findings to the national population aged 30 and above.
- **Statistical Weighting:** The application of both sample and population weights based on age, sex, and province further enhances representativeness and reduces sampling bias.
- Ethical and Cultural Appropriateness: Ethical approval from the Nepal Health Research Council and informed consent procedures ensured that participants were recruited ethically, minimizing biases related to coercion or misunderstanding.

3.1 Background Characteristics of Respondents

This section outlines the background characteristics of respondents based on provincial and ecological distribution. It categorizes respondents by education, occupation, caste/ethnicity, religion, age group, age at marriage, and number of children ever born. Additionally, it covers respondents' morbidity status and lifestyle factors, including tobacco use, alcohol consumption, fruit and vegetable intake, body weight, blood glucose levels and blood pressure status.

3.1.1 Distribution of Respondents by Ecological Belt, Province and Residence

A total of 3,382 respondents participated in this study, representing the three ecological belts (Mountain, Hill, and Terai), seven provinces, and both rural and urban settings. Participants were selected from 34 districts, with approximately 100 respondents interviewed from each selected rural or urban ward within the chosen municipalities of those districts. The distribution of respondents is summarized in Table 4 below.

	Sex of Respondents								
		Both s	sexes		Ma	ale		Fem	ale
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Ecological Belt									
Mountain	597	17.6	(14.9, 21.1)	309	17.7	(13.7, 22.3)	288	17.6	(13.6, 22.4)
Hill	1196	35.4	(32.3, 37.7)	614	35.2	(31.2, 38.8)	582	35.5	(32.1, 39.9)
Terai	1589	47.0	(44.5, 49.5)	820	47.1	(43.6, 50.4)	769	46.9	(43.5, 50.5)
Province									
Koshi	496	14.7	(11.9, 18.1)	245	14.1	(9.7, 18.3)	251	15.3	(10.6, 19.4)
Madhesh	591	17.5	(14.0, 20.0)	300	17.2	(12.7, 21.3)	291	17.8	(13.6, 22.4)
Bagmati	598	17.7	(14.9, 21.1)	308	17.7	(13.7, 22.3)	290	17.7	(13.6, 22.4)
Gandaki	399	11.8	(8.8, 15.2)	200	11.5	(6.7, 15.3)	199	12.1	(7.5, 16.5)
Lumbini	500	14.8	(11.9, 18.1)	270	15.5	(10.7, 19.3)	230	14.0	(9.5, 18.5)
Karnali	397	11.7	(8.8, 15.2)	210	12.0	(7.6, 16.4)	187	11.4	(6.5, 15.5)
Sudur Paschim	401	11.8	(8.8, 15.2)	210	12.0	(7.6, 16.4)	191	11.7	(7.4, 16.6)
Rural Urban Residence									
Rural Municipality	1196	35.4	(32.3, 37.7)	646	37.1	(33.3, 40.7)	550	33.6	(30.0, 38.0)
Urban Municipality	2186	64.6	(63.0, 67.0)	1097	62.9	(60.1, 65.9)	1089	66.4	(63.2, 68.8)
Total	3382	100		1743	100		1639	100	

Table 4. Distribution of Respondents by Sex Across Ecological Belt, Province, and Residence

Source: NSDS 2024

Of the 3,382 survey respondents, the majority were from Terai region, accounting for 47 percent, followed by the Hill region with 35 percent and the Mountain region with 18 percent. Among the seven provinces, Bagmati Province had the highest proportion of respondents at 18 percent, followed by Madhesh

Province at 17 percent. Approximately 65 percent of the respondents were from urban municipalities. Further, respondents were nearly equally distributed between male (51.5%) and female (48.5%).

3.1.2 Demographic Characteristics of the Respondents by Age, Age at Marriage and Children Ever Born

The survey respondents were adults aged 30 and above. Table 5 presents their characteristics based on age group, age at marriage, and the number of children ever born.

				Sex	of the R	espondents			
		Both s	exes		Mal	le		Fem	ale
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Age Groups									
30-39 years	1466	43.4	(40.5, 45.5)	559	32.1	(28.1, 35.9)	907	55.4	(51.8, 58.2)
40-49 years	967	28.6	(26.1, 31.9)	503	28.8	(25.0, 33.0)	464	28.3	(23.9, 32.1)
50-59 years	627	18.5	(15.9, 22.1)	428	24.6	(20.9, 29.1)	199	12.1	(7.5, 16.5)
60 years and above	322	9.5	(6.7, 13.3)	253	14.5	(10.6, 19.4)	69	4.2	*na
Total	3382	100		1743	100		1639	100	
Age at Marriage									
18 years or below	865	31.7	(28.9, 35.1)	319	22.2	(17.5, 26.5)	546	42.3	(37.9, 46.1)
19-24 years	1218	44.6	(42.2, 47.8)	651	45.2	(41.2, 48.8)	567	43.9	(39.9, 48.1)
25 years or above	647	23.7	(20.7, 27.3)	469	32.6	(28.7, 37.3)	178	13.8	(8.9, 19.1)
Total	2729	100		1438	100		1291	100	2729
Children Ever Born									
No Children	107	3.9	(0.3, 7.7)	53	3.7	*na	54	4.2	*na
1-2 Children	1456	53.4	(50.4, 55.6)	693	48.2	(44.3, 51.7)	763	59.1	(55.5, 62.5)
3 and more chil- dren	1166	42.7	(40.2, 45.8)	692	48.1	(44.3, 51.7)	474	36.7	(32.7, 41.3)
Total	2729	100		1438	100		1291	100	
NT ((52)									

Table 5. Distribution of Respondents by Sex and their Demographic Characteristics.

Note – 653 cases non response

*na = Sample size is not adequate for calculating CI

Source: NSDS 2024

More than two-thirds of the respondents were below 50 years of age, 43 percent were from the age group 30–39 followed by the age group 40–49 with 29 percent. Regarding age at marriage, 68 percent were married at 19 years or older. Further, 32 percent were married at 18 years or younger, suggesting early marriage trends in certain segments of the population. Nearly all respondents had at least one child indicating that majority had already been engaged in sexual relations across the sample.

3.1.3 Educational and Occupational Characteristics of Participants

Table 6 explains the educational status and the main occupation of respondents. As the questionnaires were self-administered, only literate individuals were included in the study and thus the education level starts from can read and write then primary education (Grade 1–5), secondary education (Grade 6–10), SLC and above, plus two or equivalent, bachelor's degree or equivalent, and master's degree or higher.

Similarly, the main occupation categories included agriculture, business, government service, non-government service, daily wages, self-employment, and household work.

	Sex of the Respondents									
		Both S	Sexes		M	ale		Fem	ale	
	n	%	95% CI	n	%	95% CI	n	%	95% CI	
Educational Status										
Can read and write	596	17.6	(14.9, 21.1)	178	10.2	(5.6, 14.4)	418	25.6	(21.8, 30.2)	
Primary (1-5 Grade)	653	19.3	(16.0, 22.0)	362	20.8	(16.8, 25.2)	291	17.7	(13.6, 22.4)	
Secondary (6-10 Grade)	835	24.7	(22.1, 27.9)	476	27.3	(23.0, 31.0)	359	21.9	(17.7, 26.3)	
SLC and Equivalent	547	16.2	(12.9, 19.1)	338	19.4	(14.8, 23.2)	209	12.7	(8.4, 17.6)	
Plus 2 or Equivalent	467	13.8	(10.9, 17.1)	225	12.9	(8.6, 17.4)	242	14.8	(10.5, 19.5)	
Bachelor and Equivalent	228	6.7	(3.7, 10.3)	124	7.1	(2.5, 11.5)	104	6.3	(1.4, 10.6)	
Masters and above	56	1.7	*na	40	2.3	*na	16	1.0	*na	
Main Occupation										
Agriculture	1100	32.5	(30.2, 35.8)	603	34.6	(31.2, 38.8)	497	30.3	(26.0, 34.0)	
Business	928	27.4	(24.1, 29.9)	521	29.9	(26.1, 33.9)	407	24.8	(20.8, 29.2)	
Government Service	184	5.4	(1.9, 8.1)	120	6.9	(2.4, 11.6)	64	3.9	*na	
Non-Government Service	108	3.2	*na	66	3.8	*na	42	2.6	*na	
Daily Wages	168	5.0	(1.7, 8.3)	127	7.3	(2.6, 11.4)	41	2.5	*na	
Self-Employment	252	7.5	(3.8, 10.2)	192	11.0	(6.6, 15.4)	60	3.7	*na	
Pension	60	1.8	*na	58	3.3	*na	2	0.1	*na	
Household Work	531	15.7	(12.9, 19.1)	23	1.3	*na	508	31.0	(27.0, 35.0)	
Unemployment	31	0.9	*na	20	1.1	*na	11	0.7	*na	
Others	20	0.6	*na	13	0.8	*na	7	0.4	*na	
Total	3382	100		1743	100		1639	100		
*na = Sample size is not adequate	ina – Sample size is not adequate for calculating CI									

Table 6. Distribution of Respondents by Sex and Educational & Occupational Characteristics

Source: NSDS 2024

Out of the total respondents, the majority had a secondary level of education (25 percent) and less than ten percent only had bachelor's, master's degree or higher. Though the trend was similar among male respondents, among female respondents the majority (26 percent) could only read and write. Among all the respondents, 60 percent had education ranging from primary to School Leaving Certificate.

Agriculture was the main occupation of nearly one third of the respondents (33 percent) followed by business (27 percent). This is similar across both male and female respondents. However, among female respondents, household work was also the major reported occupation.

3.1.4 Ethnic and Religious Distribution of the Respondents

The Table 7 elucidates the caste/ethnic and religious distribution of the respondents. The distribution of caste and ethnicity presented in this report is categorized on the basis of classification done by the Central Department of Anthropology, TU, Nepal and published as State of Caste and Ethnicity in Nepal, 2020.

				Sex	of Respo	ndents			
		Both s	sexes		Ma	le		Fem	ale
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Caste/Ethnicity									
Hill Brahman	427	12.6	(9.8, 16.2)	212	12.2	(7.6, 16.4)	215	13.1	(8.5, 17.5)
Hill Chhetri	809	24.0	(21.1, 26.9)	417	23.9	(19.9, 28.1)	392	24	(19.8, 28.2)
Madhesi Brahman/Chhetri	99	3.0	*na	45	2.6	*na	54	3.3	*na
Madhesi Other Caste	343	10.1	(6.8, 13.2)	204	11.7	(7.5, 16.5)	139	8.4	(3.5, 12.5)
Hill Dalit	369	11.0	(7.8, 14.2)	211	12.1	(7.6, 16.4)	158	9.6	(5.3, 14.7)
Madhesi Dalit	99	2.9	*na	45	2.6	*na	54	3.3	*na
Newar	100	2.9	*na	52	3.0	*na	48	3.0	*na
Mountain/Hill Janajati	839	24.8	(22.1, 27.9)	409	23.5	(18.9, 27.1)	430	26.2	(21.9, 30.1)
Terai Janajati	248	7.3	(3.8, 10.2)	118	6.7	(2.4, 11.6)	130	8.0	(3.3, 12.7)
Muslim	49	1.4	*na	30	1.7	*na	19	1.1	(-3.5, 5.5)
Religion									
Hindu	2872	85.0	(83.7, 86.3)	1468	84.2	(82.1, 85.9)	1404	85.6	(84.2, 87.8)
Bauddha	261	7.7	(4.7, 11.3)	147	8.5	(3.6, 12.4)	114	7.0	(2.3, 11.7)
Islam	49	1.4	*na	30	1.7	*na	19	1.1	*na
Christian	95	2.8	*na	46	2.7	*na	49	3.0	*na
Kirat	97	2.9	*na	49	2.8	*na	48	3.0	*na
Others	8	0.2	*na	3	0.1	*na	5	0.3	*na
Total	3382	100		1743	100		1639	100	
* NA Sample size is not adeauat	te for calculd	ating CI							

Table 7. Distribution of Respondents by Sex Across Caste/Ethnicity and Religion

Source: NSDS 2024

According to Table 7, among the total respondents, 25 percent were mountain/hill-origin Janajatis; 24 percent were hill Chhetris and 13 percent were hill Brahmins. Similarly, 11 percent of the total respondents were Hill Dalits and Muslims represented the smallest group accounting for just 1 percent of the survey respondents.

For religion, 85 percent of the respondents followed Hinduism, 8 percent followed Buddhism and the rest followed Christianity, Islam or Kirat.

3.1.5 Comorbidities Status of the Respondents

Based on the self-reported information of the respondents, morbidity status of the respondents was collected. Co-morbidity is the fact that people who have a disease or a condition also have one or more other disease condition.

Table 8 presents the morbidity status of the respondents. The most prevalent conditions reported in the survey included diabetes, hypertension (high blood pressure), heart disease, COPD, cancer, kidney disease, liver disease, mental health issues, and infertility.

	Sex of Respondents								
		Both s	exes		Male	e	Female		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Chronic Disease Status									
Yes	656	19.4	(18.1, 20.8)	385	22.1	(20.2, 24.1)	271	16.5	(14.8, 18.4)
No	2726	80.6	(79.2, 81.9)	1358	77.9	(75.9, 79.8)	1368	83.5	(81.6, 85.2)
Morbidity Status									
No morbidity	2726	80.6	(79.2, 81.9)	1358	77.9	(75.8, 79.8)	1368	83.5	(81.6, 85.2)
Comorbidity (Single Disease)	407	12.0	(11.0, 13.2)	244	14.0	(12.5, 15.7)	163	10.0	(8.6, 11.5)
Multi-morbidity (Two or More Diseases)	249	7.4	(6.5, 8.3)	141	8.1	(6.9, 9.4)	108	6.5	(5.5, 7.9)
Total	3382	100		1743	100		1639	100	

Table 8. Distribution of Respondents by Chronic Disease Status and Morbidity Status

Source: NSDS 2024

Table 8 illustrates 19 percent of respondents reported having chronic diseases. Among them, 12 percent had a single disease and 7 percent had two or more diseases. This indicates a significant prevalence of comorbidity among the study population. The proportion of respondents with chronic disease was higher among male (22 percent) compared to female (17 percent).

3.1.6 Behavior Pattern of the Respondents

3.1.6.1 Dietary Intake of the Respondents

WHO recommends at least five servings (400gm) of fruit and vegetable per day as a part of healthy balanced diet which provides a rich mix of nutrients and probiotic substance for the prevention of diet related chronic diseases. In this survey, the consumption of fruits and vegetables is considered a healthy dietary practice, as they are rich in vitamins, minerals, fiber, and antioxidants that help reduce the risk of various diseases including sexual dysfunction.

Table 9 presents the respondents' daily fruit and vegetable consumption patterns.

Table 9. Distribution of Respondents by Dietary Intake

	Sex of the Respondents									
	Both sexes				Male			Female		
	n	%	95.0% CI	n	%	95.0% CI	n	%	95.0% CI	
Fruits and Vegetable Serving										
Less than 5 servings per day	1153	57.4	(56.6, 58.3)	318	17.6	(16.0, 19.3)	835	64.6	(63.8, 65.5)	
5 or more servings per day	2229	42.6	(41.7, 43.4)	1425	82.4	(80.7, 80.4)	804	35.4	(34.5, 36.2)	
Total	3382	100		1743	100		1639	100		

Source: NSDS 2024

Out of the total respondents, more than half (57.4 percent) consumed less than five servings of fruits and vegetables per day. There were distinct differences between male and female respondents in terms of daily fruit and vegetable consumption. Among male respondents, 82.4 percent reported consuming five or more servings of fruits and vegetables per day, whereas only 35.4 percent of female respondents consumed five or more servings of fruits and vegetables per day.

3.1.6.2 Tobacco Users

Tobacco users are those who use any kinds of tobacco products such as smoking (cigarettes, bidi, hukka, etc.) or smokeless tobacco (chewing tobacco, gutka, betel nuts (zarda paan), gul, etc.) products. Respondents were asked about their tobacco using habits which are categorized as never users, ex-users,
current users, and occasional users. Table 10 provides the details of distribution of respondents according to their tobacco use habits.

			•	S	- v of Rest	ondents			
		Both s	eves		X OI Kesp Mal			Fema	le
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Smoking Status									
Never Smoker	2547	75.0	(73.3, 76.7)	1042	60.0	(57.0, 63.0)	1505	92.0	(90.6, 93.4)
Ex-smoker	295	9.0	(5.7, 12.3)	245	14.0	(9.7, 18.3)	50	3.0	*na
Current Smoker	498	15.0	(11.9, 18.1)	422	24.0	(19.9, 28.1)	76	5.0	(0.1, 9.9)
Occasional Smoker	40	1.0	*na	34	2.0	*na	6	0.0	*na
Total	3380	100		1743	100		1637	100	
Smokeless Tobacco Users									
Never Smokeless	2537	75.0	(73.6, 76.5)	946	54.3	(52.0, 56.6)	1591	97.1	(96.2,97.8)
Ex smokeless	87	2.6	(2.1, 3.1)	85	4.9	(3.9, 6.0)	2	0.1	*na
Current Smokeless	723	21.4	(20.0, 22.8)	679	39.0	(36.7, 41.3)	44	2.7	(2.0,3.6)
Occasional Smokeless	34	1.0	*na	32	1.8	(1.3, 2.5)	2	0.1	*na
Total	3381	100.0		1742	100.0		1639	100.0	
Tobacco Users (All)									
Never Tobacco Users	2107	62.3	(60.7, 63.9)	636	36.5	(34.3, 38.8)	1471	89.7	(88.2, 91.1)
Ex- Tobacco User	212	6.3	(5.5, 7.1)	169	9.7	(8.4, 11.2)	43	2.6	(1.9, 3.5)
Current Tobacco Users	1023	30.2	(28.7, 31.8)	904	51.9	(49.5, 54.2)	119	7.3	(6.1, 8.6)
Occasional Tobacco users	40	1.2	*na	34	2.0	(1.4, 2.7)	6	0.4	*na
Total	3380	100		1743	100		1637	100	
the Countle day is used a large		1.1	r						

Table 10. Distribution of Respondents by Tobacco Consumption Statu	Table 10. Distribution of Res	pondents by Tobacco	Consumption Status
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tna = Sample size is not adequate for calculating CI

Source: NSDS 2024

Out of the total respondents, more than one-third (37.7 percent) reported using tobacco in either smoking or smokeless forms. Among them, the majority (30.2 percent) were current users, while a smaller proportion (6.3 percent) were ex-users who had quit tobacco use.

Further analyzing tobacco use, nearly two third of the male respondents (63.6 percent) reported using some form of tobacco with more than half (51.9 percent) being current tobacco users. In contrast, 89.7 percent of female respondents reported never having used tobacco, highlighting a significant disparity in tobacco consumption patterns.

The survey also compared the use of smokeless tobacco and smoking tobacco among respondents. Among male participants, the prevalence of smokeless tobacco use (39 percent) was higher than that of smoking tobacco (24 percent), indicating they preferred chewing tobacco products over smoking. However, among female participants, the trend was reversed, with a higher proportion consuming smoking tobacco (5 percent) compared to smokeless tobacco (2.7 percent).

3.1.6.3 Alcohol Consumption Behavior of the Respondents

Alcohol is a beverage that contains ethanol which is psychoactive and toxic substance with dependence producing properties. Alcohol consumption plays a casual role in more than 200 diseases, injuries and other health conditions. In Nepal, traditional homemade spirits (aila in Newar and rakshi in common Nepali) and homebrewed beer and wine (chyang, tongba, jaad, tadi) are commonly consumed. Also, company made brews like rum, whiskey, vodka, brandy, wine is also consumed.

Respondents who had consumed alcohol in the past 12 months were asked about their alcohol consumption behavior showing a card explaining standard drinks of varieties of alcohol. Card was developed based on the WHO NCD STEPS Survey 2019. One standard drink is the measure of the amount of pure alcohol consumed, usually between 8 grams and 12 grams. In this survey the alcohol content of a standard drink was approximately calculated as 10 grams of ethanol. According to WHO show card used in the STEPS survey, one standard drink is equal to one standard bottle of regular beer (chyang, tongba, tadi, apple cider)-285 ml, one measure of spirits (rum, whiskey, vodka, brandy)-30 ml, one medium size glass of wine-120 ml and one measure of homemade spirits (rakshi)-50 ml.

Table 11 shows the alcohol consumption behavior of the respondents and the amount of alcohol they consumed.

	Sex of Respondents									
	Both sexes				Male			Female		
	n	%	95% CI	n	%	95% CI	n	%	95% CI	
Alcohol Drinking status										
Yes	1088	32.0	(29.2, 34.8)	894	51.0	(47.7, 54.3)	194	12.0	(7.4, 16.6)	
No	2294	68.0	(66.1, 69.9)	849	49.0	(45.6, 52.4)	1445	88.0	(86.3, 89.7)	
Type of Drinkers										
Regular Drinker	513	47.0	(42.7, 51.3)	462	52.0	(47.4, 56.6)	51	26.0	(14.0, 38.0)	
Occasional Drinker	575	53.0	(48.9, 57.1)	432	48.0	(43.3, 52.7)	143	74.0	(66.8, 81.2)	
Alcohol consumption risk level	l									
Low risk level	901	82.4	(80.6, 84.1)	728	80.9	(78.4, 83.1)	173	84.5	(81.8, 86.9)	
Medium risk level	131	13.5	(12.1, 15.2)	113	13.0	(11.0, 15.0)	18	14.3	(12.0, 16.9)	
High risk level	56	4.1	(3.3, 5.1)	53	6.2	(4.9, 7.7)	3	1.2	(0.6, 2.1)	
Total	1088	100		894	100		194	100		

Table 11. Distribution of Respondents by Alcohol Drinking Status, and Type of Drinkers

Source: NSDS 2024

Almost one-third (32 percent) of the total respondents reported consuming alcohol. Among the total respondents, nearly half 47 percent were regular drinkers and remaining 53 percent were occasional drinkers.

Among male, more than half (51 percent) were alcohol consumers and out of them 52 percent were regular drinkers. In contrast, among female only 12 percent were alcohol consumers and out of those only 26 percent were regular drinkers.

Table 12 also explains the risk level of alcohol consumption which was calculated using the criteria suggested by the WHO. According to WHO International Guide for Monitoring Alcohol Consumption and Related Harm, the categories for the risk level of alcohol consumption has been determined considering the effect of number of drinks in psychomotor and other impairments which is mentioned in table below.

 Table 12. Criteria for Risk of Consumption on a Single Drinking Day- for Comparative Research

 Purposes Only

	Male	Female
Low Risk	1-40 gm	1-20 gm
Medium Risk	41-60 gm	21-40 gm
High Risk	61 and 100 gm	41 and 60 gm
Very High Risk	101+ gm	61+gm

According to the above-mentioned category, 82.4 percent of the participants consume alcohol at low risk level. Among male and female consumers, this was 80.9 percent and 84.5 percent respectively. At the medium-risk level, 13 percent of male and 14.3 percent of female alcohol consumers had drinking habits that posed potential health risks. Meanwhile, 6.2 percent of male and 1.2 percent of female alcohol consumers were classified as high-risk drinkers, indicating excessive or hazardous alcohol consumption.

3.1.7 Body Weight, Blood Pressure, Blood Glucose Levels of the Respondents

Body weight is associated with many diseases. Overweight and obesity can cause diabetes, cardiovascular disease, cancer including sexual dysfunction. The body weight is measured using Body Mass Index (BMI) which is a good indicator for measuring nutritional status in adults. BMI is defined as an individual's weight in kilogram divided by the square of the individuals's height in meters (kg/m2). According to WHO, BMI is categorized into four groups: underweight (BMI < 18.5), normal (BMI 18.5-24.9), overweight (BMI 25.0-29.9), and obese (BMI \geq 30)8.

Random blood glucose level of the participants was measured using the FIA Biomed Blood Glucose Meter-Salut, a portable device for rapid and accurate data collection. A small blood sample was drawn from each participant's finger using a sterile lancet after proper disinfection. The sample was then applied to a test strip inserted into the device, which provided glucose level readings within seconds, ensuring an efficient and standardized measurement process. As per WHO, cutoff point for diagnosing as hyperglycemia from random blood glucose level is 200 mg/dl. This cutoff point was used to categorize to the blood glucose level of the participants.

Table 13 shows the distribution of the respondents based on body mass index, blood pressure and blood glucose level.

				Sex o	f the Re	spondents			
		Both s	exes		Ma	le		Fen	nale
	n	%	95.0% CI	n	%	95.0% CI	n	%	95.0% CI
Body Mass Index									
Underweight (less than 18.5)	121	3.9	(3.6, 4.3)	79	4.3	(3.5, 5.2)	42	3.9	(3.5, 4.3)
Normal (18.5-24.9)	1497	49.0	(48.2, 49.9)	833	48.2	(46.1, 50.4)	664	49.2	(48.3, 50.1)
Overweight (25-29.9)	1228	31.9	(31.1, 32.7)	625	36.9	(34.8, 39.0)	603	31.0	(30.2, 31.9)
Obesity (30 and above)	476	15.1	(14.5,15.7)	172	10.6	(9.4, 12.0)	304	15.9	(15.2, 16.6)
Total	3322	100		1709	100		1613	100	
Blood Pressure									
Normal Blood pressure	2468	85.8	(85.2, 86.4)	1138	66.5	(64.5, 58.6)	1330	89.3	(88.7, 89.9)
High Blood Pressure(Systolic ≥ 140 mmhg and or diastolic ≥ 90 mmhg)	906	14.2	(13.6, 14.8)	604	33.5	(31.4, 35.5)	302	10.7	(10.2, 11.3)
Total	3374	100		1742	100		1632	100	
Blood Glucose Level									
Normal Blood Glucose (Random < 200 mg/dl)	3155	98.1	(97.9, 98.3)	1622	96.4	(95.5, 97.2)	1533	98.4	(98.2, 98.7)
High Blood Glucose (Random ≥ 200 mg/dl)	110	1.9	(1.7, 2.1)	68	3.6	(2.8, 4.5)	42	1.6	(1.4, 1.8)
Total	3265	100		1690	100		1575	100	

Table 13. Distribution of Respondents by Body Mass Index, Blood Pressure and Blood Glucose Level

Around half of the respondents (49.0 percent) had a normal BMI, followed by nearly one-third (31.9 percent) classified as overweight and 15.1 percent as obese. Among female respondents, the prevalence of overweight was 31.0 percent whereas among male it was 36.9 percent. However, obesity was higher among female participants (15.9 percent) than among male participants 10.6 percent.

Among all respondents, only 14 percent had high blood pressure. However, the proportion of respondents with high blood pressure was significantly higher among male (33.5 percent) compared to female (10.7 percent).

For blood glucose levels, only a small proportion (1.9 percent) of the respondents had high blood glucose levels. Similar to hypertension, high blood glucose was higher among male (3.6 percent) compared to female (1.6 percent).

3.2 Sexual Dysfunction Overview

3.2.1 Prevalence of Sexual Dysfunction among Male and Female

This study provides the prevalence of sexual dysfunction among literate Nepali adults aged 30 and above. Sexual dysfunction is a condition that makes it difficult for an individual to enjoy sexual activity. According to the WHO, sexual health means having a positive and respectful attitude toward sexuality and relationships, as well as the ability to have safe and enjoyable sexual experiences without discrimination or violence. Sexual health issues include both positive aspects, like sexual expression and pleasure, and negative aspects, such as sexual dysfunction, sexual violence, unintended pregnancy, and abortion. They also involve harmful practices like female genital mutilation (FGM) and the risks of HIV, sexually transmitted infections (STIs), and reproductive tract infections (RTIs), which can lead to serious health problems like cancer and infertility. This study examines the prevalence of sexual dysfunction with age, sex, age at marriage, occupation, education, urban rural, province, ecological belts, morbidity, infertility, behavior such as diet intake, tobacco use and alcohol consumption.

For male respondents, the International Index of Erectile Function (IIEF) was measured using a 15-item self-administered questionnaire. Erectile function is classified as No Erectile Dysfunction with a score of 26 or higher, while a score below or equal to 25 indicates Potential Erectile Dysfunction (ED) (17). There is no definitive cutoff score for overall sexual dysfunction in males; however, erectile dysfunction (ED) is commonly considered the primary contributing factor. Therefore, moving forward, the ED cutoff score of 25 will be used as the primary indicator of overall sexual dysfunction in males.

Similarly, for female respondents, the Female Sexual Function Index (FSFI) was calculated based on a 19-item self-administered questionnaire during the survey. To distinguish female with or without sexual dysfunction a cutoff score of 26.55 was used (18).

Table 14 presents the overall prevalence of sexual dysfunction among both male and female respondents in the survey.

		Sex wise Sexual Dysfunction										
	Both sexes				Male			Female				
	n	%	95% CI	n	%	95% CI	n	%	95% CI			
*Sexual Dysfunction	2338	67.8	(67.0, 68.6)	1305	72.2	(69.9, 74.5)	1033	67.0	(66.1, 67.8)			
No Sexual Dysfunction	1041	32.2	(31.4, 33.0)	436	27.8	(24.1, 31.5)	605	33.0	(31.6, 34.6)			
Total	3379	100		1741	100		1638	100				

Table 14. Distribution of Sexual Dysfunction in Both Male and Female

There were significant differences in the prevalence of sexual dysfunction between male respondents (72.2 percent, with a CI of 69.9–74.5) and female respondents (67.0 percent, with a CI of 66.1–67.8). In total, more than two-thirds of the Nepali population (67.8 percent) were found to have potential sexual dysfunction.

3.2.1.1 Degree and Domain of Sexual Dysfunction among Male

Men's sexual dysfunction is accessed across five different domains; erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction. Each domain is further categorized into normal and compromised functional score.

Among these domains, erectile dysfunction is the primary indicator of sexual dysfunction and is further classified into five categories: Severe Erectile Dysfunction (score 0-10), Moderate Erectile Dysfunction (score 11-16), Mild to Moderate Erectile Dysfunction (score 17-21), Mild Erectile Dysfunction (score 22-25), and No Erectile Dysfunction (score 26-30).

In this study, Orgasmic function is considered normal with a score of 10, whereas a lower score signifies Orgasmic Dysfunction. Sexual desire is categorized as normal with a score of 10, while a lower score indicates Loss of Sexual Desire. Intercourse satisfaction is classified as normal with a score of 14 or higher, whereas a score below 14 signifies Loss of Intercourse Satisfaction. Overall satisfaction is considered normal with a score of 10, while a lower score indicates Loss of Satisfaction.

Table 15 reflects the degree of ED and the five different domains of sexual function among male respondents.

Category of Sexual Dysfunction	n	%	95% CI
Degree of Erectile dysfunction (n = 1741)			
Severe ED	112	5.1	(4.2, 6.1)
Moderate ED	190	9.7	(8.4, 11.0)
Mild to Moderate ED	469	25.8	(23.9, 27.7)
Mild ED	534	31.7	(29.7, 33.7)
No ED	436	27.8	(25.9, 29.7)
Domains of Male Sexual Function			
Erectile Function (n = 1741)			
Erectile Dysfunction	1305	72.2	(70.2, 74.1)
No Erectile Dysfunction	436	27.8	(25.9, 29.7)
Orgasmic Function (n = 1743)			
Orgasmic Dysfunction	1344	75.3	(73.4, 77.2)
Normal Orgasm	399	24.7	(22.8, 26.6)
Sexual Desire (n = 1743)			
loss of sexual Desire	1615	91.8	(90.6, 92.9)
Normal Sexual Desire	128	8.2	(7.1, 9.4)
Intercourse Satisfaction (n = 1743)			
loss of intercourse satisfaction	1503	84.4	(82.8, 85.9)
Normal Intercourse satisfaction	240	15.6	(14.1, 17.2)
Overall Satisfaction (n = 1743)			
loss of sexual satisfaction	1317	73.9	(72.0, 75.8)
Normal Sexual satisfaction	426	26.1	(24.2, 28.0)

Table 15. Prevalence of Sexual Dysfunction among Male by Degree and Domain Aged 30 years and above in Nepal

According to the survey findings, only 27.8 percent of the male participants had no sexual dysfunction. Among those male participants who had sexual dysfunction, about one-third (31.7 percent) had mild erectile dysfunction, 9.7 percent had moderate erectile dysfunction, one fourth had mild to moderate erectile dysfunction (25.8 percent) and a very small proportion (5.1 percent) experienced severe erectile dysfunction. Three-fourths (75.3 percent) of male respondents experienced orgasmic sexual dysfunction and more than 90 percent of the male participants reported a loss of sexual desire. Similarly, around three-fourths (73.9 percent) of male respondents experienced a loss of overall sexual satisfaction while 84.4 percent had experienced loss of satisfaction during sexual intercourse.

Various reasons for above mentioned compromised sexual functions have been revealed during IDIs and KIIs. The IDI conducted with male respondents suggest that they experienced several factors contributing to a lack of sexual desire. These may include busy schedule, short-term separation with their partners and work stress. Additionally, certain health condition such as thyroid, hypertension, diabetes and back pain are also the contributing factors. They also shared that partner's lack of desire diminishes their interest in sexual activity. Furthermore, they are also dealing with premature ejaculation often linked with their work-related stress and challenges in achieving orgasm due to feelings of inadequacy regarding their ability to provide sexual satisfaction to their partner.

KII findings further revealed that the people with Erectile Dysfunction and Premature Ejaculation often complained that they lose sexual desire too. These issues contribute to heightened anxiety during sexual relationships, often resulting in performance anxiety, particularly among male.

3.2.1.2 Domain of Sexual Dysfunction among Female

For the survey, six domains in the Female Sexual Function Index for female respondents: Desire, Arousal, Lubrication, Orgasm, Satisfaction, and Pain were considered. These domains are scored according to the calculation method prescribed by the FSFI tool.

In this study, a desire function score of 9 or higher was classified as Normal Desire Function, whereas a score below 9 indicated Loss of Desire. Sexual arousal function was categorized as Normal if the score was 19 or higher, while a score below 19 indicated Compromised Arousal Function. Lubrication function was considered Normal with a score of 20, whereas a score below 20 indicated Difficult Lubrication Function. Orgasm function was classified as Normal if the score was 14 or higher, while a lower score indicated Compromised Orgasm Function. Sexual satisfaction was categorized as Normal with a score of 14 or higher, whereas a score below 14 was classified as Compromised Sexual Satisfaction. Finally, pain function was assessed, with a score of 15 indicating No Pain Function, while a score below 15 was categorized as Compromised Pain Function. These classifications were used to evaluate the overall sexual function among female participants in the study. Table 16 presents the scores for these six domains of female sexual function.

Category of Sexual Dysfunction	n	%	95% CI
Desire (n = 1639)			
Loss of sexual desire	1542	91.9	(91.4, 92.4)
Normal sexual desire	97	8.1	(7.5, 8.6)
Arousal (n = 1608)			
Compromised Sexual arousal	1567	94.3	(93.8, 94.8)
Normal Sexual Arousal	41	5.7	(4.6, 6.8)
Lubrication $(n = 1589)$			

Table 16. Prevalence of Sexual Dysfunction among Female by Domain aged 30 Years and above in Nepal

Category of Sexual Dysfunction	n	%	95% CI
Difficult in lubrication	1335	86.0	(85.3, 86.6)
Normal Lubrication	254	14.0	(13.7, 14.3)
Orgasm (n = 1584)			
Compromised orgasm	1237	73.5	(72.7, 74.3)
Normal orgasm	347	26.5	(26.2, 26.7)
Satisfaction (n = 1639)			
Compromised sexual satisfaction	916	57.6	(56.7, 58.5)
Normal sexual satisfaction	723	42.4	(42.3, 42.5)
Pain (n = 1583)			
Pain During sexual intercourse	901	65.9	(65.0, 66.7)
No Pain during sexual intercourse	682	34.1	(33.9, 34.2)

Source: NSDS 2024

Among female respondents, the majority (94.3 percent) reported compromised sexual arousal followed by loss of sexual desire (91.9 percent). More than 80 percent had difficulty with lubrication (86.0 percent) while more than half experienced pain during sexual intercourse (65.9 percent) and had compromised sexual satisfaction.

Various reasons for above mentioned compromised sexual functions have been revealed during IDIs and KIIs. The IDI with female having sexual dysfunction found that respondents experienced a lack of sexual desire due to symptoms such as itching, a burning sensation, and lower abdominal pain after sexual intercourse. It was also found that menopausal women and women who had undergone C-sections during childbirth suffered lack of lubrication resulting in decreased sexual desire. The IDI also highlights that factors such as spiritual beliefs, work-related stress, conflicts and disputes can lead to sexual dysfunction.

"Mero duijana chori haru nai C-section bata payeko ho tyasaile mero yauni praya sukhha huncha ra yaun samparka ko bela ma nikai dukhcha tyahi bhayera yaun samparka rakhne chahana nai hudaina" (Both of my daughters were born via C-section, which is why my vagina is usually dry, and during intercourse, it is very painful. That is why I don't even desire to have sex)-Female IDI participant, age 30-35 years, Lalitpur

KII findings further revealed that people with conditions such as endometriosis, vaginismus, lubrication issues, forceful sexual intercourse, and infections often experience sexual dysfunction. Further, pain during sexual intercourse is a prevalent concern often linked to lubrication issues, infections and deep-seated endometriosis. They also highlighted that these issues are also seen in menopausal women, which significantly reduce sexual desire. Additionally, female undergoing radiation therapy face compromised sexual health. Besides, low sperm count is also associated with reduced sexual desire in male. In addition, the KII participants opined that overall, 90 percent of sexual dysfunction cases are psychogenic in nature, while the remaining 10 percent are organic.

3.2.2 Prevalence of Sexual Dysfunction by Ecological Belt, Province and Residence

Prevalence of sexual dysfunction score varies with different variables. Table 17 presents the prevalence of sexual dysfunction by ecological belts, provinces and Rural Urban settings.

	Sex of the Respondents										
		Both s	exes		Ma	le		Female			
	n	%	95% CI	n	%	95% CI	n	%	95% CI		
Ecological Belt											
Mountain	433	66.1	(64.0, 68.1)	255	79.8	(75.5, 83.8)	178	63.3	(61.1, 65.6)		
Hill	853	66.4	(64.7, 68.0)	485	77.7	(74.4, 80.7)	368	63.4	(61.5, 65.2)		
Terai	1052	68.8	(67.8, 69.8)	565	66.0	(63.1, 68.9)	487	69.2	(68.1, 70.3)		
Province											
Koshi	333	60.1	(56.6, 63.5)	191	76.0	(70.8, 80.8)	142	51.3	(46.9, 55.6)		
Madhesh	429	72.6	(71.4, 73.7)	206	64.1	(59.5, 68.5)	223	73.3	(72.1, 74.4)		
Bagmati	434	67.3	(64.3, 70.1)	234	73.8	(68.8, 78.4)	200	64.4	(60.7, 67.8)		
Gandaki	256	54.7	(51.1, 58.2)	153	74.8	(68.8, 80.3)	103	46.5	(42.2, 50.7)		
Lumbini	303	52.3	(49.0, 55.6)	197	71.5	(66.5, 76.2)	106	40.8	(36.8, 45.0)		
Karnali	314	71.5	(69.7, 73.2)	178	82.4	(77.3, 86.3)	136	70.2	(68.2, 72.0)		
Sudur Paschim	269	63.2	(60.9, 65.5)	146	67.0	(60.5, 72.7)	123	62.7	(60.2, 65.1)		
Rural/Urban											
Rural Municipality	857	67.1	(65.7, 68.5)	512	77.0	(74.0, 80.0)	345	65.0	(63.5, 66.6)		
Urban Municipality	1481	68.1	(67.2, 69.1)	793	69.4	(67.0, 71.9)	688	67.9	(66.9, 68.9)		
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)		

Table 17. Prevalence of Sexual Dysfunction by Ecological Belt, Province, and Rural/Urban Settings

Source: NSDS 2024

Prevalence of sexual dysfunction was similar in all the ecological belts. It was prevalent in around two third of the respondents in each belt. However, among male respondents, the prevalence was higher in the Mountain region (79.8 percent, with a CI of 75.5-83.8) and in Hill (77.7 percent with a CI of 74.4-80.7) compared to Terai regions (66.0 percent with a CI of 63.1-68.9) while among female respondents it was higher in the Terai region (69.2 percent with a CI of 68.1-70.3).

Among the seven provinces, the prevalence of sexual dysfunction was highest in Madhesh Province (72.6 percent, with a CI of 71.4-73.7), followed by Karnali Province (71.5 percent, with a CI of 69.7-73.2). Within male respondents, the highest prevalence of sexual dysfunction was observed in Karnali Province (82.4 percent, with a CI of 77.3-86.3), followed by Koshi Province (76.0 percent, with a CI of 70.8-80.8) while among female respondents, highest prevalence was found in Madesh province (73.3 percent) followed by Karnali (70.2 percent).

Prevalence of sexual dysfunction was found among more than two thirds of the respondents in both rural and urban settings. However, its prevalence among male was higher in rural areas (77.0 percent with CI of 74.0-80.0) compared to urban area (69.4 percent with CI of 67.0-71.9).

Qualitative findings (IDI) suggests that higher proportion of women in Terai region have compromised sexual functions due to various cultural restrictions, harmful practices as well as taboos and extra responsibilities.

3.2.3 Prevalence of Sexual Dysfunction by Age, Age at Marriage and Number of Children Ever Born

The association between the prevalence of sexual dysfunction and selected demographic variables was assessed. Table 18 presents the variation in sexual dysfunction by age, age at marriage, and number of children ever born.

	Sex of the Respondents										
		Both	sexes		Ma	le	Female				
	n	%	95% CI	n	%	95% CI	n	%	95% CI		
Age groups											
30-39 years	855	65.4	(65.4, 64.5)	333	59.8	(56.3, 63.1)	522	65.9	(65.0, 66.9)		
40-49 years	642	70.1	(70.1, 68.2)	355	70.9	(67.3, 74.4)	287	69.7	(67.5, 71.9)		
50-59 years	532	85.4	(85.4, 82.7)	373	87.0	(83.8, 89.9)	159	82.7	(77.9, 86.7)		
60 years and above	309	96.5	(96.5, 93.0)	244	96.9	(93.5, 98.8)	65	94.5	(79.0, 98.5)		
Total	2338	67.8	(67.8, 67.0)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)		
Age at Marriage											
18 years or below	594	68.4	(68.4, 67.0)	246	75.1	(70.7, 79.3)	348	67.7	(66.2, 69.2)		
19 -24 years	865	66.8	(66.8, 65.5)	517	77.1	(74.1, 80.0)	348	64.8	(63.3, 66.3)		
25 years or above	422	60.9	(60.9, 58.6)	325	65.7	(61.6, 69.5)	97	58.6	(55.7, 61.4)		
Total	1881	66.5	(66.5, 65.6)	1088	73.0	(70.8, 75.0)	793	65.2	(64.2, 66.2)		
Children Ever Born (CEB)											
No Children	61	52.2	(52.2, 48.0)	33	59.3	(46.8, 69.2)	28	51.1	(46.4, 55.6)		
1-2 Children	909	64.9	(64.9, 63.7)	462	64.9	(61.8, 68.1)	447	64.9	(63.6, 66.2)		
3 and more children	910	71.2	(71.2, 69.7)	592	83.6	(80.9, 86.1)	318	68.0	(66.3, 69.7)		
Total	1880	66.5	(66.5, 65.6)	1087	73.0	(70.8, 75.0)	793	65.2	(64.2, 66.2)		
*na = Sample size is not adeque	ate for calci	ulatino CI									

Table 18. Prevalence of Sexual Dysfunction by Age, Age at Marriage and CEB

Source: NSDS 2024

Table 18 indicates an increasing trend in the prevalence of potential sexual dysfunction with age. The lowest prevalence was observed in the 30-39 age group (65.4 percent, with a CI of 64.5–65.4), compared to older age groups. Younger respondents (30-39 years) report relatively lower dysfunction rates. However, the younger female have a significantly higher proportion (65.9 percent) of sexual dysfunction compared to the same group of male (59.8 percent).

IDI carried out among female participants also supports that the young women had extra responsibilities to take care of smaller kids that has contributed to compromise in sexual relations, which ultimately affects their sexual desire.

Respondents who married at an early age (18 years or younger) had a higher prevalence of potential sexual dysfunction (68.4 percent, with a CI of 67.0–68.4), while those who married at age 25 or above had a lower prevalence (60.9 percent, with a CI of 58.6–60.9). Among male respondents, those who married below 18 years had a higher prevalence of potential sexual dysfunction (75.1 percent, with a CI of 70.7–79.3) compared to female in the same age group (67.7 percent, with a CI of 66.2–69.2).

The IDI with participants revealed that the majority had married before the age of 18, with a 7–8 year age gap between them and their spouse. The findings indicate that early marriage is associated with sexual dysfunction. Participants expressed that marrying at a very young age and having children early meant their entire time was consumed by childcare and household responsibilities. Additionally, the husbands often went away for work, which further affected the sexual lives resulting in dissatisfaction and lack of desire. One of the participant strongly shared her feelings as,

"sano umer ma, 13/14 barsa ma, bihe bhayo, nani babu pani 16/17 barsa mai bhayo. Ani nanibabu herdai ma, gharko kaam gardai ma time jane, sriman kaam garna India janu hunthiyo, tehi bhayera wasta nai hudaina thiyo ani aaba ta jhan budeshkal ni lagyo aaba k hunxa ra" (I got married at a young age, around 13/14 years old, and had children by the age of 16/17. All my time was spent taking care of children and doing household chores, while my husband worked in India. Due to this, there was no attention given to such matters when I was young. What would happen in this age?)-Female IDI participant, age 40-45 years, Kailali

Respondents with more than three children had a higher prevalence of potential sexual dysfunction (71.2 percent, with a CI of 69.7–71.2) compared to those with one or two children, for both male and female. Respondents with no children had a lower proportion of potential sexual dysfunction compared to those who had children.

3.2.4 Prevalence of Sexual Dysfunction by Education and Occupation

Prevalence of potential sexual dysfunction varied in terms of respondent's education level and their main occupation status. Table 19 presents the figures of potential sexual dysfunction across sex by education and occupation.

	Sex of the Respondents										
		Both	sexes		Ma	le		Fem	ale		
	n	%	95% CI	n	%	95% CI	n	%	95% CI		
Education Attainment											
Can read and write	453	72.8	(71.0, 74.5)	157	84.6	(78.6, 89.0)	296	71.9	(70.1, 73.7)		
Primary (1-5 Grade)	454	68.1	(66.1, 70.1)	289	76.6	(72.2, 80.4)	165	66.1	(63.8, 68.3)		
Secondary (6-10 Grade)	590	67.5	(65.9, 69.1)	357	72.5	(68.8, 76.1)	233	66.5	(64.7, 68.3)		
SLC and Equivalent	379	69.6	(67.5, 71.6)	246	70.9	(66.2, 75.1)	133	69.2	(66.9, 71.5)		
Plus 2 or Equivalent	294	64.3	(62.4, 66.1)	151	65.7	(60.0, 70.8)	143	64.1	(62.0, 66.1)		
Bachelor and Equivalent	135	59.8	(56.8, 62.8)	80	64.1	(56.0, 70.9)	55	59.0	(55.6, 62.2)		
Masters and above	33	72.2	(65.1, 78.1)	25	62.3	(48.0, 73.8)	8	76.1	(68.3, 82.9)		
Main Occupation											
Agriculture	807	67.4	(65.8, 68.9)	494	79.4	(76.2, 82.3)	313	64.7	(62.9, 66.3)		
Business	613	66.8	(65.2, 68.4)	369	68.2	(64.5, 71.8)	244	66.4	(64.6, 68.2)		
Government Service	110	57.4	(53.3, 61.4)	81	66.2	(58.7, 73.6)	29	54.2	(49.3, 58.8)		
Non- Government Service	63	60.0	(55.3, 64.5)	38	57.5	(46.4, 66.8)	25	60.6	(55.6, 65.8)		
Daily Wages	113	73.6	(69.2, 77.7)	89	70.0	(62.6, 76.6)	24	76.0	(70.7, 81.3)		
Self-Employment	169	51.3	(47.8, 54.8)	143	71.9	(65.8, 77.2)	26	42.4	(38.3, 46.6)		
Pension	53	83.4	(70.8, 91.1)	52	86.5	(74.0, 93.4)	1	32.8	(3.9, 82.3)		
Household Work	370	72.6	(71.3, 74.0)	16	66.9	(47.4, 84.5)	354	72.7	(71.3, 74.0)		
Unemployment	26	82.6	(75.8, 87.4)	16	79.8	(63.8, 93.8)	10	83.1	(76.6, 88.7)		
Others	14	87.3	(77.5, 93.8)	7	44.5	(20.3, 68.1)	7	100	*na		
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)		

Table 19. Prevalence of Sexual Dysfunction by Education and Main Occupation

*na = Sample size is not adequate for calculating CI

Potential sexual dysfunction was observed to be lower among respondents with a bachelor's degree or equivalent (59.8 percent, with a CI of 56.8–62.8), followed by those with a Plus Two or equivalent education (64 percent, with a CI of 62.4–66.1). Respondents who could only read and write had the highest proportion of potential sexual dysfunction (72.8 percent, with a CI of 71.0–74.5).

Similarly, respondents engaged in self-employment had a lower proportion of potential sexual dysfunction (51 percent, with a CI of 47.8–54.8), followed by those in government services (57 percent, with a CI of 53.3–64.5). Among male respondents, those engaged in agriculture had the highest proportion of potential sexual dysfunction (79.4 percent, with a CI of 76.2–82.3), except for those in the pension-holder group.

According to in-depth interviews with participants, the majority of female were housewives. Some of them, however, were self-employed, running small retail businesses such as small cafeterias (chiya nasta pasal, panipuri/chatpate pasal) and cosmetic shops. Among male, there was greater occupational diversity. Some were self-employed, managing small cafeterias (chiya nasta pasal), meat shops, or handicraft shops. Others worked as tailors, tempo drivers, or were engaged in government services, agriculture, or physically demanding jobs like construction site labor.

Key informant interviews (KII) revealed that sexual dysfunction (SD) was most prevalent among people engaged in heavy, stressful, busy and risky occupations. This included agricultural workers exposed to pesticides, construction site laborers, heavy vehicle drivers, and male working in garment factories where aniline dye is frequently used. Additionally, some experts noted that government employees, bank staff, and corporate employees with high-stress jobs also reported sexual dysfunction.

KII with the Gynecologists shared that women who remain extremely busy, sometimes sought help for painful intercourse, often attributed to vaginismus probably due to stress. One of the female Gynecologists from fertility care center mentioned that,

"Mero ma aune birami jastai dental doctor nai painful sexual contact ko history liyera aucha ani sexual contact garda linga nai adkine wa pasdai napasne huncha ra sahanai nasakne gari dukhcha bhanchan. Yo sayad peshagat tanab ko karanle huna sakcha." (Patients who come to me, such as dental doctors, report a history of painful sexual contact. They say that during sexual contact, the penis either gets stuck or does not penetrate, and it becomes unbearably painful. This could possibly be due to occupational stress)-KII with Female Gynecologist, Kathmandu, Fertility Clinic

3.2.5 Prevalence of Sexual Dysfunction by Caste/Ethnicity and Religion

Sexual dysfunction was assessed with the caste/ethnicity category and religion of the respondents and the findings are presented in Table 20.

Table 20. Prevalence of Sexual	Dysfunction by	Caste/Ethnicity a	und Religion
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		Sex of the Respondents										
		Both	sexes		Mal	le	Female					
	n	n % 95% CI		n	%	95% CI	n	%	95% CI			
Caste/Ethnicity Category												
Hill Brahman	294	65.1	(62.2, 68.0)	152	69.5	(63.6, 75.6)	142	63.9	(60.5, 67.1)			
Hill Chhetri	589	68.4	(66.8, 69.9)	330	77.6	(73.8, 81.2)	259	66.8	(65.1, 68.5)			
Madhesi Brahman/Chhetri	69	77	(74.3, 79.6)	29	55.8	(42.4, 67.5)	40	78.3	(75.6, 81.0)			
Madhesi Other Caste	232	67.8	(65.9, 69.6)	138	63.9	(58.1, 69.3)	94	68.3	(66.3, 70.2)			
Hill Dalit	254	59.7	(56.6, 62.8)	160	73.5	(67.8, 78.7)	94	54.8	(51.1, 58.5)			
Madhesi Dalit	65	73.7	(70.7, 76.5)	29	62.0	(49.4, 72.7)	36	74.7	(71.6, 77.6)			

		Sex of the Respondents											
		Both	sexes		Ma	le		Fem	ale				
	n	%	95% CI	n	%	95% CI	n	%	95% CI				
Newar	76	62.6	(56.7, 68.4)	44	82.2	(70.1, 90.3)	32	57.4	(50.7, 64.2)				
Mountain/Hill Janajati	566	64.2	(62.3, 66.1)	318	76.3	(72.2, 79.9)	248	61.2	(59.0, 63.4)				
Terai Janajati	164	73.1	(70.3, 75.6)	88	72.2	(64.3, 78.9)	76	73.2	(70.3, 75.9)				
Muslim	29	59.4	(52.4, 65.8)	17	52.7	(38.6, 68.2)	12	61.1	(53.0, 67.8)				
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)				
Religion													
Hindu	1999	68.5	(67.7, 69.3)	1097	72.1	(69.9, 74.1)	902	67.9	(67.0, 68.8)				
Bauddha	184	65.4	(62.1, 68.5)	118	78.6	(71.9, 84.3)	66	62.2	(58.5, 65.7)				
Islam	29	59.4	(52.4, 65.8)	17	52.7	(38.6, 68.2)	12	61.1	(53.0, 67.8)				
Christian	64	65.0	(58.5, 70.7)	34	71.7	(57.9, 82.1)	30	63.1	(55.8, 69.8)				
Kirat	56	50.3	(42.8, 57.8)	36	71.9	(59.4, 81.9)	20	38.3	(29.5, 47.7)				
Others	6	27.7	(14.8, 42.7)	3	100	*na	3	22.4	(11.8, 39.5)				
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)				
*na = Sample size is not ade	eauate for c	alculatin	σCI										

Source: NSDS 2024

There was no significant difference between caste/ethnicity and religion of the participants. Among participants with potential sexual dysfunction, Newar male exhibited the highest prevalence (82.2 percent), followed by Hill Chhetri (77.6 percent) and Mountain/Hill Janajati (76.3 percent). For female, the highest prevalence was observed in Madhesi Brahman/Chhetri (78.3 percent), followed by Madhesi Dalit (74.7 percent) and Terai Janajati (73.2 percent).

Among religious groups, Buddhist male reported the highest rate of sexual dysfunction (78.6 percent), while Hindu female had the highest prevalence (67.9 percent). The greatest gender disparity was observed among Kirat respondents, with male (71.9 percent) reporting a significantly higher prevalence than female (38.3 percent).

3.2.6 Prevalence of Sexual Dysfunction with Morbidity Status

Categories of morbidities and their association with potential sexual dysfunction was assessed and presented in Table 21.

Table 21. Prevalence of Sexual Dysfunction by Morbidity Status

				Sex o	f the Res	pondents			
	Both sexes			Male			Female		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Categories of morbidity									
No Comorbidity	1801	66.8	(66.0, 67.7)	961	68.6	(66.3, 70.7)	840	66.6	(65.7, 67.5)
Diabetes Mellitus (DM) Only	97	71.8	(66.5, 77.0)	70	89.6	(81.8, 95.1)	27	64.7	(58.0, 71.2)
Hypertension (HTN) Only	182	83.2	(79.6, 86.4)	120	82.9	(76.0, 88.1)	62	83.4	(79.0, 87.4)
Diabetes, Hypertension, and/or cardiovascular disease (CVD)	87	84.6	(76.7, 90.3)	63	92.2	(84.0, 97.0)	24	73.4	(58.4, 84.1)
Diabetes, Hypertension, Car- diovascular Disease, and Other Conditions	171	70.9	(66.9, 74.8)	91	90.2	(83.3, 94.8)	80	66.0	(61.3, 70.6)
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)

Among male respondents, those with diabetes mellitus alone exhibited a higher prevalence of potential sexual dysfunction (89.6 percent) compared to those with hypertension alone (82.9 percent). Among female respondents, the proportion of potential sexual dysfunction was higher in those with hypertension alone (83.4 percent) compared to those with diabetes alone (64.7 percent).

In participants with diabetes mellitus (DM) only, male (89.6 percent) reported significantly higher prevalence than female (64.7 percent). Among those with diabetes, hypertension, and/or cardiovascular disease (CVD), male (92.2 percent) exhibited a much higher prevalence of sexual dysfunction compared to female (73.4 percent).

IDI carried out among participants with various health problems revealed that many experienced sexual dysfunction after being diagnosed with these diseases. Some participants with diabetes mellitus, thyroid issues, hypertension, migraines, and back pain reported sexual dysfunction despite regular treatment of those diseases. One of the participants shared her experience as,

"Pahila shreeman le yata uta chuda kaukuti lagthiyo, ahile ta j gare pani kehi hunna. Malai garnu ra lash lai garnu ustai ho. Kunai energy nai aaudaina. Sugar ko medicine khaye dekhi yestai bhako xa, ani sugar pani control xaina" (In the past, when my husband touched me, I would blush, and my desire and excitement would peak. Now, no matter what he does, I don't feel any excitement or have any energy for sexual activity. Since starting medication for diabetes, I've been facing this problem, with no improvement in my sugar levels) -Female IDI participant, age 35-40 years, Doti

Some respondents noted that their sexual life was also affected by their spouse's health problems. One participant shared that her husband's headaches and pain in his penis during sexual activity led to dissatisfaction and discomfort. Over time, this discomfort and dissatisfaction contributed to a lack of desire in her as well.

Most KII experts stated that patients often seek treatment for their health issues but later express concerns about sexual dysfunction as well. However, sexual dysfunction is not typically their primary complaint. During the interviews, they also explained that sexual dysfunction is correlated with some non-communicable diseases (NCDs) such as Diabetes Mellitus, Hypertension, Thyroid disorders, Scrotal Tuberculosis, Kidney and Liver diseases. Additionally, they reported encountering psychiatric issues, including symptoms of depression, anxiety, and Post-Traumatic Stress Disorder (PTSD), which are associated with sexual dysfunction.

One gynecologist noted that many female patients who come for infertility care reported dissatisfaction with their sexual life. Upon further investigation, they revealed that their husbands' stress and frustration from work often led to erectile problems and premature ejaculation, which increased frustration during sexual activity and further diminished her sexual desire.

3.2.6.1 Mental Health and Sexual Dysfunction

KII with the medical experts shared that the majority of the sexual dysfunction cases are associated with psychosocial issues. As per their experience 90 percent of sexual dysfunction issues are related to psychological and remaining 10 percent are organic. In addition, one of the gynecologists shared anxiety, depression, and stress are associated with low libido, frustration especially after repeated In Vitro Fertilization (IVF) failures. Stress caused by infertility issues often reduces the desire for intimacy, reporting intercourse only once or twice a month. Another physician mentioned that men may face performance anxiety, fearing they cannot meet their partner's expectations, while manic disorders can lead to hypersexuality and aggressive sexual activity. One of the psychiatrist explained as,

"Afnai buwa, uncle bata bigatma exploit bhayera kt haru ma kaha anxiety ra chronic depression ka symptom liyera auchan. Uniharuma ahile ayera sex desire nahune, partner sanga bhetna daraune, utejana nahune ra past traumatic experiencelai present ma relate garne hunchan...sexual dysfunction physical condition ko karanle bhanda mental health ko reason le garda aucha...yadi birami anxious state ma cha bhane pani tyaha premature ejaculation hune chances high huncha" (Girls who were exploited in the past by their own father or uncle come to me with symptoms of anxiety and chronic depression. They now experience a lack of sexual desire, fear of meeting their partner, lack of arousal, and tend to relate past traumatic experiences to the present.... Sexual dysfunction in such cases is more due to mental health reasons than physical conditions....If the patient is in an anxious state, the chances of premature ejaculation is high) - Psychiatrist, Kathmandu

Another urologist explained,

"Sexual dysfunction le garda depression ma jane chances huncha, tyastai depression le garda pani sexual dysfunction huna sakcha" (Sexual dysfunction can lead to depression similarly, depression can also cause sexual dysfunction in an individual)-KII with Urologist, Kathmandu

3.2.6.2 Infertility and Sexual Dysfunction

Reported problem on infertility was collected during field survey. Table 22 presents the association between sexual dysfunction and infertility.

	Sex of Respondents											
		Both sexe	28		Male			Female				
	n	%	95% CI	n	%	95% CI	n	%	95% CI			
No Infertility	1784	66.5	(65.6, 67.4)	1033	72.3	(70.2, 74.5)	751	65.4	(64.4, 66.4)			
Infertility	96	64.9	(59.1, 69.9)	54	91.2	(82.7, 96.7)	42	58.3	(52.0, 64.4)			
Total	1880	66.5	(65.6, 67.4)	1087	73.0	(70.8, 75.0)	793	65.2	(64.2, 66.2)			

Table 22. Prevalence of Sexual Dysfunction Among People Who Reported Infertility

Source: NSDS 2024

There are no significant differences in the prevalence of sexual dysfunction between respondents who reported infertility problems (64.9 percent, with a CI of 59.1-69.9) and those who reported no infertility problems (66.5 percent, with a CI of 65.6-67.4).

However, among male respondents, significant differences were observed. Those who reported infertility problems had a higher proportion of sexual dysfunction (91.2 percent, with a CI of 82.7-96.7) compared to those who did not report infertility (72.3 percent, with a CI of 70.2-74.5).

Among female respondents, the proportion of sexual dysfunction was higher among those who reported no infertility problems (65.4 percent, with a CI of 64.4-66.4) compared to those who reported infertility problems (58.3 percent, with a CI of 52.0-64.4).

3.2.6.3 Reproductive Health Issues and Sexual Dysfunction

According to the IDI with participants, respondents indicated that biological and hormonal changes are associated with age. The majority of female participants experienced vaginal dryness and itching after menopause. Some participants also reported irregular menstrual cycles, heavy white fluid discharge, and urinary infections. Participants who underwent C-sections also experienced vaginal dryness. These issues resulted in a lack of sexual desire and discomfort during intercourse.

One of the participant shared that they were unable to conceive due to infection in pelvic organs, but after treating the infection, they were able to conceive. She shared her feeling as,

"Bihey agadi nai malai seto pani bagne samasya thiyo. Bihey pachi upachar garna jada patheghar ma pani jamera ghau bhayeko rahecha. Maile ek mahina samma ausadhi khaye pachi matra baccha baseko thiyo" (Before marriage, I had the problem of excessive white discharge. After marriage, when I went for treatment, I was told there was an infection in my uterus. After taking medicine for a month, only then was I able to conceive)-Female IDI participant, age 30-35 years, Jhapa

The KII with the experts also revealed that sexual dysfunction and infertility is in a vicious cycle. Infertility causes stress that results in lack of sexual desire, which often results in an inability to conceive (no desireno baby-increased frustration). Further discussions with gynecologists revealed that 70 percent of cases seem to show a connection between subfertility/infertility and sexual dysfunction. In the interview she explained,

"Sexual desire pani nahune, infertility hune, tesmathi pani jhan ek dui wata ivf failure hune bitikkai chai waha haru chai almost depression mai land hunuhunxa. Infertility clinic ma baseko le chai infertility ra sexual dysfunction dherai associated xa jasto lagxa. Stress dherai hune, ani desire nahune ani desire nabhayeko le baby pani nahune, ani chain jastai bhayera jane ra tesma painful relation hune ani jhan pheri frustration hune hunxa" (Losing sexual desire, experiencing infertility, and then facing one or two IVF failures often leads people to a state of near depression. From my experience working in an infertility clinic, infertility and sexual dysfunction seem to be highly interrelated. High levels of stress reduce desire, and the lack of desire further affects the chances of having a baby. This creates a vicious cycle, leading to painful relationships and even greater frustration)-Gynecologist, Infertility Center, Kathmandu

3.2.7 Family Planning and Sexual Dysfunction

According to the quantitative data, sexual dysfunction is prevalent among respondents with a high number of children. In contrast to this, qualitative data shows sexual dysfunction is also prevalent in those respondents who have 2-3 children. Majority of the female IDI participants were current or former depo users with irregular menstrual cycle and painful menstruation complained about the loss of sexual desire. Respondents suspected that this might be due to the side effects of Depo.

In one of the IDIs with a male participant, he claimed to experience a lack of desire, as well as orgasmic and erectile dysfunction, following a vasectomy. The participant shared his feelings as,

"Mero samanle (penis) kam nai gardaina...Maile pahila operation (vasectomy) gareko ho mero budi le pani tyasaile garda esto bhako ho bhanchin ra malai pani tyastai lagcha" (My penis dosen't function properly....I had undergone surgery earlier, and my wife says this might be the reason for my condition, and I feel the same way)-Male IDI participant, age 55-60 years, Doti

3.2.8 Impact of Behavior Pattern of Respondents (Dietary Intake, Tobacco and Alcohol Consumption) and Sexual Dysfunction

3.2.8.1 Association of Sexual Dysfunction with Dietary Intake

Sexual dysfunction is associated with the individual healthy behaviors and health indicators like BMI, Blood pressure and blood glucose etc. The given Table 23 presents the association of sexual dysfunction of male and female with their fruit and vegetable consumption practice, BMI and blood glucose level.

Table 23. Prevalence of Sexual Dysfunction by Dietary Intake

		Sex of the Respondents								
	Both sexes			Male			Female			
	n	%	95% CI	n	%	95% CI	n	%	95% CI	
Fruits and Vegetable Serving										
Less than 5 servings per day	1564	68.4	(67.6, 69.3)	711	77.4	(74.8, 79.9)	853	67.5	(66.6, 68.5)	
5 or more servings per day	774	64.9	(63.0, 66.7)	594	67.2	(64.3, 70.0)	180	63.2	(60.6, 65.6)	
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)	

Source: NSDS 2024

Respondents consuming less than five servings of fruits and vegetables daily report higher sexual dysfunction (68.4 percent) compared to those consuming more (64.8 percent). The differences on sexual dysfunction was observed similar among male and female respondents in terms of fruit and vegetable consumption level.

IDI with the participants revealed that the majority of them consume limited fruits and vegetables on their daily intake. They said that they take rice, lentils, and vegetables (dal, bhat, tarkari) for both morning and evening. Further exploring their vegetable intake, they just take around 2-3 servings per day which is insufficient for a healthy life.

KII with experts also suggests that there is no balanced diet and regular exercise among their patients who complain of sexual dysfunction related issues. They are either cachexic or obese.

3.2.8.2 Association of Sexual Dysfunction with Tobacco Use

Prevalence of sexual dysfunction among smokers and tobacco users were analyzed in this study. Table 24 presents the association of sexual dysfunction with smokers and smokeless tobacco users.

	Sex of the Respondents									
	Both sexes			Male			Female			
	n	%	95% CI	n	%	95% CI	n	%	95% CI	
Tobacco Smoker										
Never User	1691	67.7	(66.8, 68.5)	758	70.8	(68.2, 73.2)	933	67.3	(66.4, 68.2)	
Ex-User	249	80.3	(75.9, 84.2)	208	82.4	(77.3, 86.7)	41	74.6	(64.9, 82.1)	
Current User	372	65.7	(62.2, 69.0)	319	72.0	(67.8, 75.7)	53	54.2	(48.3, 60.1)	
Social/Occasional User	26	77.2	(67.5, 85.6)	20	57.4	(43.3, 72.0)	6	100	*na	
Total	2338	67.9	(67.1, 68.7)	1305	72.2	(70.2, 74.1)	1033	67.1	(66.3, 68.0)	
Smokeless Tobacco User										
Never User	1717	67.6	(66.8, 68.4)	716	73.3	(70.7, 75.9)	1001	67.0	(66.1, 67.9)	
Ex-User	76	86.0	(78.4, 92.1)	74	84.7	(76.5, 91.4)	2	100	*na	
Current User	522	68.8	(66.0, 71.6)	493	69.8	(66.5, 72.8)	29	64.8	(58.2, 71.6)	
Social/Occasional User	22	60.4	(44.4, 72.7)	21	64.2	(49.6, 78.3)	1	22.7	(2.8, 71.6)	
Total	2337	67.8	(67.0, 68.6)	1304	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)	

Table 24. Prevalence of Sexual Dysfunction among Smokers, Smokeless Tobacco Users and Both Tobacco Users (Smoking and Smokeless)

		Sex of the Respondents									
	Both sexes			Male			Female				
	n % 95% CI			n	% 95% CI		n	%	95% CI		
Tobacco User (Smoking and S	mokeless)									
Never User	1386	67.6	(66.7, 68.4)	475	73.2	(70.0, 76.2)	911	67.2	(66.3, 68.0)		
Ex-User	179	80.5	(75.3, 85.0)	143	81.4	(75.1, 86.7)	36	78.6	(68.9, 86.3)		
Current User	750	67.2	(64.7, 69.4)	669	70.9	(68.1, 73.5)	81	58.4	(53.9, 62.9)		
Social/Occasional User	23	70.7	(60.3, 79.7)	18	51.0	(36.6, 65.6)	5	92.1	(78.0, 96.5)		
Total	2338	67.8	(67.0, 68.6)	1305	72.2	(70.2, 74.1)	1033	67.0	(66.1, 67.8)		
*na = Sample size is not adequate for calculating CI											

Source: NSDS 2024

There was a significant difference in prevalence of sexual dysfunction between never smokers and exsmokers. The prevalence of sexual dysfunction was observed higher among ex-smokers (80.3 percent with CI 75.9 – 84.2) than never smokers (67.7 percent with CI 66.8 – 68.5) for both male and female. Similarly, the proportion of sexual dysfunction was observed higher among ex-users of smokeless tobacco users (86.0 percent with CI 78.4 -92.1) than never users of smokeless tobacco (67.6 percent with CI 66.8-68.4). It indicates people who use tobacco either smoking or smokeless have higher chances of potential sexual dysfunction.

3.2.8.3 Association of Sexual Dysfunction with Alcohol Use

The prevalence of sexual dysfunction is associated with the level of alcohol consumption. Table 25 presents the association between alcohol consumption and sexual dysfunction among the respondents.

				Sex	of Resp	ondents			
		Both se	exes		Ma	le		Fem	ale
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Alcohol Drinking status									
Yes	734	62.8	(60.6,65.0)	630	67.9	(65.0,70.5)	104	55.8	(52.2,59.2)
No	1604	68.6	(67.7,69.4)	675	77.0	(74.3,79.5)	929	67.8	(66.9,68.7)
Total	2338	67.8	(67.0,68.6)	1305	72.2	(70.2,74.1)	1033	67.0	(66.1,67.8)
Type of Drinkers									
Regular Drinker	380	68.8	(65.3,72.1)	351	73.4	(69.5,6.9)	29	51.6	(43.7,59.7)
Occasionally Drinker	354	59.2	(56.4,62.0)	279	62.1	(57.9,66.1)	75	56.7	(52.8,60.5)
Total	734	62.8	(60.6,65.0)	630	67.9	(65.0,70.5)	104	55.8	(52.2,59.2)
Alcohol consumption and diseas	e								
Alcohol consumer who does not have any diseases	574	61.9	(59.6,64.3)	484	65.2	(62.1, 68.3)	90	57.8	(54.1,61.4)
Alcohol consumes who have diseases	160	68.1	(62.4, 73.7)	146	80.4	(74.3, 85.6)	14	34.8	(24.4,46.5)
Total	734	62.8	(60.6,65.0)	630	67.9	(65.0,70.5)	104	55.8	(52.2,59.2)

	Table 25. D	Distribution of Res	pondents by Se	ex, Alcohol Drinking	Status, and Ty	pe of Drinkers
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The prevalence of sexual dysfunction was higher among respondents who do not consume alcohol (68.6 percent, with a CI of 67.7-69.4) compared to those who drink alcohol (62.8 percent, with a CI of 60.6-65.0). There was difference in sexual dysfunction among male respondents who drink alcohol (67.9 percent, with a CI of 65.0-70.5) and those who do not drink alcohol (77 percent, with a CI of 74.3-79.5).

Similarly, there was difference in sexual dysfunction among alcohol drinkers who consume alcohol regularly (68.8 percent, with a CI of 65.3-72.1) and those who drink occasionally (59.2 percent, with a CI of 56.4-62.0). However, sexual dysfunction was similar between respondents who drink alcohol but have no disease (61.9 percent, with CI 59.6-64.3) and those who drink alcohol and have at least one disease (68.1 percent, with CI 62.4-73.7).

Sexual dysfunction was also analyzed based on these risk level of alcohol consumption and morbidity status and is in Table 26 and Table 27 given below.

	Sex of the Respondents									
		Both s	exes	Male			Female			
	n	%	95% CI	n	%	95% CI	n	%	95% CI	
Alcohol Consumer who does not have any diseases	878	86.1	(84.5,87.6)	717	82.5	(80.2, 84.7)	161	91.1	(88.9, 92.9)	
Alcohol consumes who have diseases	210	13.9	(12.4,15.5)	177	17.5	(15.3, 19.8)	33	8.9	(7.1, 11.1)	
Total	1088	100		894	100		194	100		

Table 26. Sex Wise Distribution of Alcohol Consumption and Health Status

Source: NSDS 2024

Table 27. Prevalence of Sexual Dysfunction among Male Alcohol Consumers and Morbidity Status

		Male					
		Sexual Dysfund	ction				
	n	%	95% CI				
Low Risk Consumption(1-40gm)							
No Morbidity	575	65.8	(62.2, 69.2)				
Morbidity	149	79.5	(72.5, 85.1)				
Total	724	68.3	(65.2, 71.3)				
Medium Risk consumption(41-60gm)							
No Morbidity	94	62.8	(54.3, 71.6)				
Morbidity	18	76.0	(57.1, 90.8)				
Total	112	64.9	(56.6, 72.3)				
High Risk consumption (61 and above gm)							
No Morbidity	44	60.3	(47.6, 72.7)				
Morbidity	9	100	*na				
Total	53	66.8	(55.4, 77.5)				
*na = Sample size is not adequate for calculating CI							

Prevalence of Sexual dysfunction among male was observed higher among who consume high risk level of alcohol (66.8 percent) compared with those who consume medium risk level of alcohol (64.9 percent). Among three groups of alcohol consumption level, it was observed that respondents with morbidity have the higher sexual dysfunction (79.5 percent vs 65.8 percent at low risk, 76 percent vs 62 percent at medium risk and 100 percent vs 60.3 percent) compared with the respondents who have no morbidity.

The majority of male IDI participants disclosed that they consume alcohol, smoke cigarettes, and chew smokeless tobacco. A few female participants also spoke about their spouses' drinking habits. They expressed dislike for the smell of alcohol and other substances, which they felt diminished their desire for sexual activity with their husbands. One participant shared her experience:

"Budo le jadh khayera aucha ra malai ganda manpardaina ani sangai sutna ni manlagdaina" (My husband comes home drunk, and I don't like the smell, so I don't even feel like sleeping with him)-Female participants, age 40-45 yrs Kailali

IDI with male participants also revealed that they discontinued drinking alcohol and using tobacco when they got diseases such as COPD, diabetes and hypertension.

Table 28. Prevalence of Sexual Dysfunction among Female Alcohol Consumers and Morbidity Status

		Female	
		Sexual Dysfu	nction
	n	%	95% CI
Low Risk Consumption(1-20gm)			
No Morbidity	141	53.7	(49.7, 57.7)
Morbidity	32	35.9	(25.1, 47.7)
Total	173	51.9	(48.1, 55.7)
Medium Risk Consumption(21-40gm)			
No Morbidity	17	79.0	(70.5, 85.7)
Morbidity	1	0.0	*na
Total	18	77.4	(69.1, 84.5)
High Risk Consumption (41 and above gm)			
No Morbidity	3	68.5	(34.8, 89.6)
Morbidity	0	0.0	*na
Total	3	68.5	(34.8, 89.6)

Source: NSDS 2024

Among the female respondents sexual dysfunction was observed higher among those who consume a high-risk level of alcohol (68.5 percent) compared with those who consume low risk level of alcohol (51.9 percent) as shown in Table 28 above.

The data also reveals that among alcohol users, the majority of those without diseases continue to consume alcohol, while a smaller proportion of those with diseases do so. Specifically, only 17.5 percent of male and 8.9 percent of female with diseases report alcohol consumption, indicating that most individuals with diseases tend to reduce or stop drinking.

The KII conducted with the consultants also suggests that long-term smoking, alcohol consumption, and the use of other substances can lead to sexual dysfunction.

3.2.9 Physical Measurement and Sexual Dysfunction (BMI, Blood Pressure and Blood Glucose Level)

This sub-section assesses the association between lifestyle factors and potential sexual dysfunction. The status of tobacco use, alcohol consumption, fruit and vegetable intake, BMI, blood pressure, and blood sugar levels are considered as lifestyle factors for this analysis.

	Sex of the Respondents								
		Both s	sexes		Ma	ale		Female	
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Body Mass Index									
Underweight (less than 18.5)	101	76.5	(72.8, 80.0)	71	86.7	(77.8, 92.2)	30	74.5	(70.4, 78.5)
Normal (18.5-24.9)	1064	66.8	(65.6, 67.9)	632	73.2	(70.3, 75.8)	432	65.6	(64.4, 66.9)
Overweight (25-29.9)	827	67.0	(65.6, 68.4)	447	69.2	(65.8, 72.4)	380	66.5	(65.0, 68.1)
Obesity (30 and above)	308	71.4	(69.4, 73.4)	129	71.9	(65.5, 77.4)	179	71.4	(69.2, 73.4)
Total	2300	68.0	(67.1, 68.7)	1279	72.2	(70.2, 74.1)	1021	67.2	(66.3, 68.0)
Blood Pressure									
Normal Blood Pressure	1684	67.7	(66.8, 68.5)	847	71.8	(69.3, 74.1)	837	67.1	(66.2, 68.0)
High Blood Pressure (Systolic ≥ 140 mm of hg and or diastolic ≥ 90 mm of hg)	651	68.8	(66.8, 70.9)	457	73.0	(69.6, 76.2)	194	66.5	(63.7, 69.0)
Total	2335	67.8	(67.0, 68.6)	1304	72.2	(70.3, 74.1)	1031	67.0	(66.2, 67.9)
Blood Glucose Level									
Normal Blood Glucose (Ran- dom < 200 mg/dl)	2168	67.6	(66.7, 68.4)	1208	71.8	(69.7, 73.8)	960	66.8	(65.9, 67.7)
High Blood Glucose	93	84.1	(79.4, 88.5)	60	86.2	(76.8, 92.6)	33	83.2	(77.0, 88.2)
$(Random \ge 200 \text{ mg/dl})$									
Total	2261	67.9	(67.1, 68.7)	1268	72.2	(70.3, 74.3)	993	67.1	(66.2, 67.9)

Table 29.	Prevalence	of Sexual D	vsfunction b	v BMI.	Blood Pres	sure, Blood	Glucose I	evels
Iuoic 2/.	1 I C V di Chice	or ochuar D	yor an error o	· · · · · · · · · · · · · · · · · · ·		bure, brood	Ulucobe I	761010

Source: NSDS 2024

Underweight individuals report the highest proportion of sexual dysfunction (76.5 percent with CI 72.8-80.0) compared to the individuals with normal BMI (66 percent with CI 65.6-67.9). Proportion of sexual dysfunction prevalence was observed similar across overweight (67.0 percent) and obese (71.4 percent) categories.

Respondents with normal blood pressure (male = 71.8, female = 67.1) report lower dysfunction rates compared to those with hypertension (male = 73.0, female = 66.5). The respondents with higher blood glucose level (random $\ge 200 \text{ mg/dl}$) have significantly higher levels of sexual dysfunction in both sexes (male = 86.2, female = 83.2) compared to those with normal blood glucose level (male = 71.8, female = 66.8).

3.2.10 Use of Social Media and Sexual Dysfunction

Majority of the Female IDI participants mentioned that they use social media for entertainment purposes for at least 3-4 hours per day. They shared that they usually scroll through TikTok and Facebook and use Messenger for calling. Some participants revealed that they use social media to seek solution for their sexual health-related problems. It indicates that social media is a source of information for them which might not be appropriate and scientific to solve their problems. In addition, they feel that the loss of desire is normal with aging. One of the participants strongly expressed that, keeping YouTube as an evidence, she believed increasing age us associated with a decline in sexual function. She said, "Umer badepachi ta esto kura ma dhyan jadaina ni. YouTube ma pani kati dherai jana le estai bhanchan ani hamro sastra ma pani ta hamile umer anusarko karma garnu parcha bhanchan ni haina ra." (As we age, we don't focus much on such things. Many people on YouTube say the same, and our scriptures also mention that we should act according to our age, don't they?)-Female IDI participant, age group 55-60 years, Udayapur

As male participants are often busy with their work schedules, the majority prefer using social media before bedtime. They revealed that they primarily use social media for entertainment and to watch pornography.

KII with doctors also suggests that both male and female patients watch pornography, which raises unrealistic expectations regarding sexual performance, penis size, and the duration of sexual activity. This leads to performance anxiety, further resulting in sexual dysfunction. Some experts shared that media, films, and YouTube often portray sexual life in an exaggerated and unrealistic manner, which generates negative perceptions among people. Additionally, experts revealed that patients often experience a loss of libido and dissatisfaction with their partners, as they compare their spouses with others they see on social media.

> "Pornography ma jastai linga ko size chaina ra tyasma jastai adi ghanta samma yuan samparka rakhna sakdina, kina esto bhayeko hola bhanne chinta liyera birami haru auchan" (Patients come with concerns, saying that their penis size is not like what they see in pornography and that they cannot maintain sexual contact for half an hour like shown there. They wonder why this is happening to them.)-KII with Male Uro-surgeon, Kathmandu

IDI participants when asked about their health seeking behavior for sexual health they revealed that they visit ayurvedic clinics or traditional healers rather than consulting health professionals. One of the IDI participant said that,

"Dui barsa agadi mero debre andakosh dukheko thiyo, maile mero jadibuti sambandhi kam garne maiju parne sanga ausadi (rato jhol) liyera khaye tyaspachi dekhi mero chitai jharne samasya suru bhayo" (Two years ago, I had pain in my left testicle. I took some medicine (red liquid) from my aunt, who works with herbal remedies. After that, I started experiencing the problem of ejaculating quickly) -IDI with male participant, age 35-40 years, Kailali

Triangulating it with the finding from KII, most of the participants revealed that in the majority of cases, the clients first visit traditional healers such as mata/manakamana, homeopathy or Ayurveda and practice self-medication influenced by social media and visit them after experiencing side effects or when the symptoms get worse.

"Hami kaha aunu bhanda agadi dhami/jhakri/baidya, ayurvedic clinic jastai MM clinic ma gayera ausadi khane, na bhaye pachi wa bigrepachi wa side effect bhaye pachi wa manasik rupma bichiptta bhayepachi matrai aune garchan" (Before coming to us, they usually visit traditional healers or Ayurvedic clinics like MM clinic (name changed) to take medicine. They only come to us if those treatments don't work, if their condition worsens, if they experience side effects, or if they become mentally distressed) - KII with Male Psychiatrist, Kathmandu

3.2.11 Relationship of Sexual Dysfunction with Gender-Based Violence, Separation and Conflict

From the IDI among male participants, some of them revealed that they do not get support from their wives, their wives were willing to have sexual relationships only if their needs are fulfilled. Whereas IDI with female revealed that they have faced forceful sexual relationships from their husbands and have been accused of having affairs with others.

One of the female participants of the IDI highlighted that prolonged separation from her husband has increased her responsibilities toward the family and added pressure to meet societal expectations. The lack of physical and emotional connection between the partners has gradually diminished her desire for sexual intimacy. Another female IDI participant expressed her feelings as,

"Bihey bhayeko ek barsa nabhai ma garvawati bhaye ra shreeman pani kamko silsilama bidesh janu bhayo. Uha bela bela kam ko silsilama bidesh bata jane aune garnu huncha ra ahile bharkhar Dubai janu bhayo. Uha gayedekhi hamro jhagada parera bolchal chaina. Yaha huda yaun samparka ko kurama jhagada hune garthyo. Malai yuan samparka pachi naito bhanda tala pet polne samasya pani hunthyo. Shreemanlai yo kura bhanda-ma yaha nahuda tero arkai cha tyai bhayera malai nadeki hos bhannu hunthyo" (I became pregnant within less than a year of marriage, and my husband had to go abroad for work. He would occasionally travel back and forth for work, and he recently left for Dubai. After he left, we had a fight and are not speaking to each other. Even when he was here, we often argued about sexual matters. After intercourse, I would experience a burning sensation below the navel. When I told my husband about it, he would accuse me by saying, 'You must have someone else when I'm not here; that's why this is happening to you')- Female IDI participant, age 30-35 years, Udayapur

KII further illustrates that one of the causes of lack of desire and dissatisfaction is due to separation of couples. One of the gynecologist also noted, cases of women who come for infertility care and their partners working abroad, reporting dissatisfaction and decreased libido probably due to prolonged separation and attempting to divert their sexual urge for a longer time by engaging in different activities such as religious activities, meditation, listening to religious speeches, etc.

Sexual Pain and Communication Issues in Marriage

Ms. Kalpana (name changed), 46 years old, shared her challenges regarding sexual intimacy, pain during intercourse, and communication issues with her husband. Kalpana has had low sexual desire since her young age, and as she has grown older, she has completely lost interest in sex. When her husband approaches her for intimacy, she tells him that she has no interest. Despite her reluctance, her husband insists on engaging in sexual activities. During intercourse, she experiences pain and discomfort. After intercourse, she experiences white discharge and painful sensations, which last for 6–7 days.

She tried to express this issue to her husband, but her husband refuses to accept and further he scolds her as she is not interested in having a sexual relationship with him.

Once, she visited a nearby medical facility to consult about her discomfort. Health personnel suggested that the infection might be transmitted from her husband during intercourse, and both of them should take medications. When she shared this with her husband, he refused treatment, saying he had no such problem. Kalpana tried to explain that she couldn't continue having sex because of the pain, but her husband accused her of being involved with another man.

Pressure to Have a Son: A Woman's Struggle

A 27-28 years old female participant from Bhaktapur shared her story with a female gynecologist. She revealed that she had given birth to three daughters, and her in-laws and husband are pressurizing her to conceive a son. She told the doctor that her husband will divorce her if she does not give birth to a son. Her mother-in-law was even arranging a second marriage for her husband. While sharing her story, she broke down in tears and pleaded with the doctor for help to have a son. She also shared that these constant pressure and emotional abuse by husband and in-laws further diminished her sexual desire.

Forced Intercourse and Its Impact on a Woman's Health

During a Key Informant Interview (KII), a doctor shared a case she had encountered. The case involved a woman who had delivered a baby about one and a half months earlier. The woman experienced forceful intercourse from her husband, which resulted in severe bleeding and tearing. This injury required emergency surgical repair in the operating room. The patient in her follow-up visit shared that she has lost desire for sexual intercourse due to past experience of forceful and painful intercourse.

Struggles with Conceiving and Blaming

During the Key Informant Interview, a gynecologist shared a case she had encountered. The case involved a couple who were trying to conceive a child but lacked intimacy in their relationship. The couple expressed that they were considering undergoing IVF. The husband wanted to improve their sexual life whereas his wife just wanted to conceive the baby. Unsolved conflict among partner often leads to loss of desire and satisfaction, which the doctor explained that blaming often arises in such situations, where some husbands even issue ultimatums to their wives saying "You only want to have a child, nothing more. I'll just donate my sperm and leave".

KII with the experts shared another issue that some of the male patients won't open up about their sexual issues such as erectile dysfunction and premature ejaculation in front of their wives. Majority of them tend to hide their weaknesses and feel uncomfortable admitting their issues. They often claim if they have only partial erection they usually say 'I am still aroused and everything is normal'. One of the gynecologists working in an infertility center shared during KII, that he had encountered a case about 15-16 years ago while working in a family planning (FP) clinic. KII expert also shared a story regarding the same issue that is mentioned below.

The Patriarchy's Lie: How Male Privilege Masks Male Infertility

The case involved a 25-26-year-old woman who visited for infertility checkup saying, "We can't have a baby". After taking her history the doctor found that she was the third wife and her husband insisted that he was completely fine and was able to conceive a baby. She had not undergone many medical investigations and explained that this was why she had come to the clinic. The doctor then requested her to bring her husband as well for an examination. When the husband arrived at the clinic the next day, the doctor was surprised to discover that he was 65-66 years old. After conducting a semen analysis, the doctor found that the man had azoospermia, which explained their inability to conceive. This case explains the deeply rooted patriarchal society where the male infertility and sexual dysfunction are often denied, ignored or blamed on women. Male sexual and reproductive health is as important as female and are vulnerable to age, lifestyle and medical conditions yet it is hidden and shielded by male privilege.

4. Conclusions

Sexual dysfunction is highly prevalent among married individuals aged 30 and above in Nepal with notable variations in prevalence across sex, age groups, ecological belts and provinces. The study reveals that with the increase of age the prevalence of sexual dysfunction also increases. The study also shows that male is more affected than female, with the majority of male reporting compromised sexual desire, while most female experience difficulties with sexual arousal. The study also indicates the prevalence of sexual dysfunction increases with lower levels of education. Furthermore, individuals who marry before the age of 18 are more likely to experience sexual dysfunction compared to those who marry after the age of 18.

Furthermore, individuals of Madhesh province are more affected by sexual dysfunction, with the highest rates observed among female in this province. Similarly, male sexual dysfunction is highest in Karnali Province. Notably, both of these provinces have the lowest Human Development Index (HDI) (Karnali 0.575 and Madesh 0.548 both blow average of Nepal) in Nepal (0.601) (19) which indicates the potential influence of socio-economic and healthcare disparities on sexual health. Furthermore, sexual dysfunction is slightly more common among individuals living in urban areas than in rural areas and is more prevalent in the Terai region compared to the mountain and hilly regions. These findings suggest that ecological, developmental, and socio-economic factors play an important role in shaping the prevalence and distribution of sexual dysfunction across Nepal.

Lifestyle factors such as diet, tobacco and alcohol consumption have a noteworthy impact on the prevalence of sexual health. Findings from the study shows that people who consume a balanced diet including adequate amounts of fruits and vegetables are less likely to experience sexual dysfunction. Additionally, sexual dysfunction is more prevalent among tobacco consumers especially with ex-tobacco users suggesting that tobacco use has lasting adverse effects even after its cessation. Similarly, regular alcohol consumption is strongly associated with sexual dysfunction.

Body weight and overall health conditions play an important role in sexual health, with both underweight (includes persons with chronic illnesses) and obese individuals being more susceptible to sexual dysfunction. The study indicates a slightly higher prevalence of sexual dysfunction among individuals with high blood pressure. Furthermore, diabetes is strongly associated with an increased risk of sexual dysfunction, likely due to its impact on nerve function, blood flow, and hormonal balance. These findings emphasize the importance of maintaining a healthy weight, managing blood pressure, and controlling diabetes to reduce the risk of sexual dysfunction and enhance overall quality of life.

The study highlights individuals experiencing sexual dysfunction often report that busy schedules, high stress levels, separation from their spouse, conflicts between partners, family disputes, and work-life imbalance as significant challenges affecting their sexual health. Additionally, infections such as penile, vaginal, and pelvic infections, along with a partner's compromised health condition, further exacerbate this issue. Individuals' inability to openly discuss their sexual dysfunction, most likely due to concerns over privacy and confidentiality at healthcare facilities and their tendency to seek treatment first from

traditional healers or resort to unapproved medications from unauthorized and unqualified dealers before consulting medical professionals, contributes to the high prevalence of sexual dysfunction. Furthermore, over 90 percent of sexual dysfunction cases have psychogenic origins, including stress, anxiety, depression, and post-traumatic stress disorder (PTSD), creating a vicious cycle that perpetuates the condition.

Overall, the findings highlight the multifaceted nature of sexual dysfunction in Nepal indicating a need for targeted interventions addressing medical, lifestyle and psychosocial factors through collaborative efforts from individuals, couples, healthcare providers, civil society organizations and policymakers to improve sexual health and well-being.

5. Recommendations

Based on the research findings the following recommendations are made which will help prevent and reduce the prevalence of sexual dysfunction in Nepal.

- 1. Comprehensive sexual health services should be integrated at all levels of the healthcare system, from primary to tertiary care. Healthcare services should be strengthened by ensuring availability, accessibility and a supportive environment that encourages health-seeking behavior to cater individuals experiencing sexual dysfunction. To achieve this, training or orientation/s should be given to healthcare providers (Doctors, Nurses, and Paramedics) on management of cases of sexual dysfunction and provide patient-centered care. Furthermore, awareness campaigns on a large scale should be carried out for both individuals seeking care and health service providers to improve service utilization.
- 2. Sexual dysfunction and its management should be incorporated into the pre-service and inservice curricula of doctors, nurses, and other healthcare workers. Additionally, establishing standardized protocols and guidelines for the management of patients with sexual dysfunction can ensure uniformity and quality in service delivery. Enhancing medical education on sexual health will ensure that future healthcare professionals are equipped to address sexual dysfunction effectively.
- 3. A multifaceted approach is needed that integrates sexual health into education and healthcare through policies and public discourse at all levels to reduce stigma around sexual health issues effectively. Comprehensive Sexuality Education (CSE) is a well-established and tested tool and it should be incorporated in school curricula. This can help individuals openly discuss sexual health, manage lifestyle factors, develop life skills, and understand sexual health from an early age. This will promote a proactive approach to sexual health and well-being.
- 4. Policy advocacy such as national-level dialogues and policy discussions on sexual health should be strengthened. Engagement of media platforms to advocate for the development and implementation of sexual health-related programs and activities should be done.
- 5. Sexual dysfunction shares common risk factors with non-communicable diseases (NCDs) and should therefore be integrated into the existing Multi-sectoral Action Plan for Prevention and Control of NCD. Additionally, it should be included in the Package of Essential Non-Communicable Disease Interventions (PEN). Since these are already established national frameworks, this approach would be a cost-effective, culturally accepted, and holistic strategy for addressing sexual health.
- 6. The Family Welfare Division should mainstream sexual dysfunction into Sexual and Reproductive Health and Rights (SRHR) policies, plans, and programs at the federal, provincial, and local government levels. Ensuring its inclusion in local health programs will improve accessibility to sexual health services at the grassroots level.

- 7. Early marriage is an important determinant of sexual dysfunction. Policy enforcement, community awareness and mobilization initiatives should be reinforced to prevent and eliminate early marriage.
- 8. Further researches should be conducted to understand about the determinants of sexual dysfunction, particularly in relation to Human Development Index (HDI) factors, to better understand and address socio-economic and developmental influences on sexual health.
- 9. Further study regarding, sexual dysfunction of transgender, illiterate and population below 30 years should be conducted as this study was focused on 30 years above literate male and female married people.

These recommendations aim to create a comprehensive, stigma-free, and accessible health care services for addressing sexual dysfunction in Nepal, ultimately improving overall sexual health and well-being of people in Nepal.

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Annex I: Socio-demographic Questionnaires

Prevalence of Sexual Dysfunction in Nepal 2024

Questionnaire

Section A

This section contains questionnaires related to your demographic details, educational qualification, occupation, health status, dietary habits and physical activities. We expect honest responses to these questions from you.

Demographic Details				
S. N.	Questions	Responses	Remarks	
A1	Respondents identification number	##-##-###		
	District code (01 to 34) ##			
	Researcher code (01 to 16) ##			
	Respondents code (001 to 100) ###			
A2	District			
A3	Municipality			
A4	Ward			
A5	Date of interview			
A6	Time of interview			
A7	Respondents contact number			
A8	How old are you?	years		
A81	How many years have you been married?	years		
A82	How many children have you given birth to?	children		
A9	What is your ethnicity?			
A10	What is your religion?	1) Hindu		
		2) Buddhist		
		3) Muslim		
		4) Christian		
		5) Kirat		
		6) Other		
A11	What is your highest level of	1) Illiterate		
	education?	2) Can only read/write		
		3) Primary level (Grades 1-5)		
		4) Secondary level (Grades 6-10)		
		5) SLC or equivalent		
		6) +2 or equivalent		
		7) Bachelor's or equivalent		
		8) Master's or above		

A12	What is your main occupation?	1) Agriculture		
		2) Business		
	(Main occupation refers to the job	3) Government job		
	in which an individual is engaged for most of the day. Identify and	4) Non-governmen	t job	
	mark the respondent's main	5) Daily wage labor		
	occupation accordingly.)	6) Self-employed		
		7) Pensioner		
		8) Household work	:	
		9) Unemployed		
		10) Student		
		11) Other		
A13	Do you have any chronic illness?	1) Yes 2) No	0	If no go to A15
A14a)	If yes, what diseases do you have? (Multiple choices)	A14b) If you have a disease, for how many years?	A14c) Are you taking medication for it? If no go to A15	A14d) If yes, for how many years have you been taking the medication?
	1) Diabetes	years	1) Yes 2) No	years
	2) Hypertension	years	1) Yes 2) No	years
	3) Heart disease	years	1) Yes 2) No	years
	4) Chronic asthma	years	1) Yes 2) No	years
	5) Cancer	years	1) Yes 2) No	years
	6) Kidney disease	years	1) Yes 2) No	years
	7) Liver disease	years	1) Yes 2) No	years
	8) Mental health issues	years	1) Yes 2) No	years
	9) Infertility	years	1) Yes 2) No	years
	10) Other	years	1) Yes 2) No	years
		Tobacco Use		
A15	Do you smoke currently? (e.g. cigarette, bidi, cigar, kakad, hookah etc.)	, 1) Yes 2) No		If No, go to A19
A16	If yes, do you use tobacco daily?	1) Yes 2) No		
A17	How many years have you been smoking?	years		
A18	How many times do you smoke per day?	times		
A19	Have you ever smoked in the past?	1) Yes 2) No		If No, go to A25

A20	Approximately, how long ago did you quit smoking?	Wears and	
	(Write 0 if it is less than a year)		
A21	Have you recently used smokeless tobacco products such as snuff (nasal tobacco powder), khaini, jarda paan, chewing tobacco, gutkha, madhu, jarda, or gul?	1) Yes 2) No	If No, go to A25
A22	If yes, do you use smokeless tobacco daily?	1) Yes 2) No	If No, go to A25
A23	On average, how many times per day do you use smokeless tobacco?	times	
A24	Have you ever used smokeless tobacco products daily in the past?	1) Yes 2) No	
	Alc	cohol Consumption	
A25	Have you consumed alcoholic beverages (beer, wine, whiskey, rum, chyang, tadi, tongba, gin, brandy etc.) in the past 12 months?	1) Yes 2) No	If No, go to A29
A26	How often did you drink at least one	1) 5 or more days a week	
	standard drink of alcohol in the past 12 months?	2) 1-4 days a week	
		3) 1-3 days a month	
		4) Less than once a month	
A27	How many pegs of drinks do you usually consume on drinking days?	drinks	
A28	In the past 12 months, how many days did you drink five or more drinks (Standard Drinks) in one sitting?	days	
	· · · · · · · · · · · · · · · · · · ·	Nutrition	
The foll quantity	owing questions are about the fruits and y of fruits and vegetables you eat. Please	l vegetables you regularly consume. Use the answer based on any week from the past ye	card to measure the ear.
A29	How many days per week do you eat fruits?	days	
	(Show the definition of fruits on the card)		
A30	On days you eat fruits, how many servings do you consume?	servings of fruit	
A31	How many days per week do you eat vegetables?	days	
	(Cauliflower, mustard green, spinach, garden cress, bethe, taro leaves, fermented leafy greens-gundruk, dried vegetable mix-masyaira (show card))		
A32	How many servings do you consume vegetables in a day?	servings of vegetables	

	Physical Activity					
Now, I	will ask you some questions about ho	w much time you sp	oend on different types	s of physical activities.		
Please a	Please answer these questions even if you do not engage in active physical exercise. First, think about how much					
time yo	ime you spend working. Work includes employment, household chores, cooking, etc.					
A33	Do you have a sedentary job that inv	olves sitting or	1) Yes 2) No			
	standing in one place with minimal v	walking?				
A34	Do you engage in physically demand	ling activities (e.g.,	1) Yes 2) No	If No, go to A37		
	minutes at a time?	K) IOI at least 10				
A35	If yes, how many days per week do y	ou do such	davs			
	activities?					
A36	How much time do you spend on such	ch activities per	minutes			
	day?					
A37	Do you engage in moderate physical	activities (e.g.,	1) Yes 2) No	If No, go to A40		
	brisk walking, carrying light loads) for					
128	If we have a second sec		dava			
A30	activities?		uays			
A39	How much time do you spend on such activities per		minutes			
	day?					
Phys		ysical Measuremen	ts			
A40	Height	cm				
A41	Weight	kg				
A42a	Blood Pressure	mm Hg Systoli	c			
		mm Hg Diasto	lic			
A42b		mm Hg Systoli	c			
		mm Hg Diasto	lic			
A42c		mm Hg Systoli	с			
		mm Hg Diasto	lic			
A43a	Heart Rate	bpm				
A43b		bpm				
A43c	1	bpm				
A44	Random Blood Sugar level	mg/dl				

Thank you for your time.

Annex II: The International Index of Erectile Function (IIEF-15) Questionnaire

Prevalence of Sexual Dysfunction in Nepal 2081

Questionnaire

Section B: This section is for male respondents only

Copy the respondent identification number from Section A and provide the form to the participant for self-administration.

This section focuses on issues related to sexual dysfunction that the respondent has experienced in the past month. We expect honest and reliable responses to these questions. Your answers will help in selecting appropriate and effective prevention and treatment methods for such issues and conditions. Your responses will be kept confidential. You must fill out this section yourself. Please read all the possible answers carefully and select only the one that best matches your sexual health condition by marking a circle around it.

S.N.	Questionnaires	Responses	Remarks
UIN	Respondents identification number		
M1	In the past month, how often	0 No sexual activity	
	during sexual activity?	1 Almost never or never	
		2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	
M2	via via via a erections with sexual stimulation, how often were your erections hard enough for penetration?		
		1 Almost never or never	
		2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	
M3	When you attempted intercourse,	0 Did not attempt intercourse	
	how often were you able to penetrate (enter) your partner?	1 Almost never or never	
		2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	

S.N.	Questionnaires	Responses	Remarks
M4	During sexual intercourse, <u>how</u>	0 Did not attempt intercourse	
	often were you able to maintain your erection after you had penetrated	1 Almost never or never	
	(entered) your partner?	2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	
M5	During sexual intercourse,	0 did not attempt intercourse	
	how difficult was it to maintain your erection to completion of	1 Extremely difficult	
your erection to completion of intercourse?	2 Very difficult		
		3 Difficult	
		4 Slightly difficult	
		5 Not difficult	
M6	How many times have you	0 No attempts	
at	attempted sexual intercourse in the past month?	1 One to two attempts	
		2 Three to four attempts	
		3 Five to six attempts	
		4 Seven to ten attempts	
		5 Eleven or more attempts	
M7	When you attempted sexual	0 Did not attempt intercourse	
	intercourse, how often was it satisfactory for you?	1 Almost never or never	
		2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	
M8	In the past month, how much have	0 No intercourse	
	you enjoyed sexual intercourse?	1 No enjoyment at all	
		2 Not very enjoyable	
		3 Fairly enjoyable	
		4 Highly enjoyable	
		5 Very highly enjoyable	
M9	When you had sexual stimulation or	0 No sexual stimulation or intercourse	
	intercourse in the past month, how	1 Almost never or never	
	often did you ejaculate?	2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	

S.N.	Questionnaires	Responses	Remarks
M10	When you had sexual stimulation or	1 Almost never or never	
	intercourse, how often did you have the feeling of orgasm or climax?	2 A few times (less than half the time)	
	0 0	3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	
M11	How often have you felt sexual	1 Almost never or never	
	desire?	2 A few times (less than half the time)	
		3 Sometimes (about half the time)	
		4 Most times (more than half the time)	
		5 Almost always or always	
M12	How would you rate your level of	1 Very low or none at all	
	sexual desire?	2 Low	
		3 Moderate	
		4 High	
		5 Very high	
M13	How satisfied have you been with	1 Very dissatisfied	
	your <u>overall sex life</u> ?	2 Moderately dissatisfied	
		3 Equally satisfied & dissatisfied	
		4 Moderately satisfied	
		5 Very satisfied	
M14	How satisfied have you been with	1 Very dissatisfied	
	your <u>sexual</u> relationship with your	2 Moderately dissatisfied	
	F on the t	3 Equally satisfied & dissatisfied	
		4 Moderately satisfied	
		5 Very satisfied	
M15	How do you rate your <u>confidence</u>	1 Very low	
	that you could get and keep an erection?	2 Low	
		3 Moderate	
		4 High	
		5 Very high	
M16	How would you describe your	0 No sexual activity	Self-Evaluation
	overall sexual life?	1 Dissatisfied	
		2 Moderately dissatisfied	
		3 Equally satisfied and dissatisfied	
		4 Moderately satisfied	
		5 Very satisfied	

Thank you for your time.

Annex III: Female Sexual Function Index (FSFI-19) Questionnaire

Prevalence of Sexual Dysfunction in Nepal 2081

Questionnaire

Section C: This section is for female respondents only

Copy the respondent identification number from Section A and provide the form to the participant for self-administration.

This section focuses on issues related to sexual dysfunction that the respondent has experienced in the past month. We expect honest and reliable responses to these questions. Your answers will help in selecting appropriate and effective prevention and treatment methods for such issues and conditions. Your responses will be kept confidential. You must fill out this section yourself. Please read all the possible answers carefully and select only the one that best matches your sexual health condition by marking a circle around it.

S.N.	Questionnaires	Responses	Remarks
UIN	Respondents identification number		
F1	Over the past 4 weeks, how often did	5 Almost always or always	
	you feel sexual desire or interest?	4 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		2 A few times (less than half the time)	
		1 Almost never or never	
F2	Over the past 4 weeks, how would you	5 Very high	
	rate your level (degree) of sexual desire or interest?	4 High	
		3 Moderate	
		2 Low	
		1 Very low or none at all	
F3	Over the past 4 weeks, how often did	0 No sexual activity	
	during sexual activity or intercourse?	5 Almost always or always	
		4 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		2 A few times (less than half the time)	
		1 Almost never or never	
F4	Over the past 4 weeks, how would	0 No sexual activity	
	you rate your level of sexual arousal ("turn on") during sexual activity or	5 Very high	
	intercourse?	4 High	
		3 Moderate	
		2 Low	
		1 Very low or none at all	
S.N.	Questionnaires	Responses	Remarks
------	-------------------------------------------------------------------------------	-----------------------------------------	---------
F5	Over the past 4 weeks, how confident	0 No sexual activity	
	aroused during sexual activity or	5 Very high confidence	
	intercourse?	4 High confidence	
		3 Moderate confidence	
		2 Low confidence	
		1 Very low or no confidence	
F6	Over the past 4 weeks, how often have	0 No sexual activity	
	you been satisfied with your arousal	5 Almost always or always	
	intercourse?	4 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		2 A few times (less than half the time)	
		1 Almost never or never	
F7	Over the past 4 weeks, how often did	0 No sexual activity	
	you become lubricated ("wet") during	5 Almost always or always	
	sexual activity of intercourse:	4 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		2 A few times (less than half the time)	
		1 Almost never or never	
F8	Over the past 4 weeks, how difficult was it to become lubricated ("wet")	0 No sexual activity	
	during sexual activity or intercourse?	1 Extremely difficult or impossible	
		2 Very difficult	
		3 Difficult	
		4 Slightly difficult	
		5 Not difficult	
F9	Over the past 4 weeks, how often	0 No sexual activity	
	did you maintain your lubrication	5 Almost always or always	
	activity or intercourse?	4 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		2 A few times (less than half the time)	
		1 Almost never or never	
F10	Over the past 4 weeks, how difficult	0 No sexual activity	
	was it to maintain your lubrication ("wetness") until completion of sexual	1 Extremely difficult or impossible	
	activity or intercourse?	2 Very difficult	
		3 Difficult	
		4 Slightly difficult	
		5 Not difficult	
1			

S.N.	Questionnaires	Responses	Remarks
F11	Over the past 4 weeks, when you had	0 No sexual activity	
	sexual stimulation or intercourse, how often did vou reach orgasm (climax)?	5 Almost always or always	
		4 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		2 A few times (less than half the time)	
		1 Almost never or never	
F12	Over the past 4 weeks, when you had	0 No sexual activity	
	sexual stimulation or intercourse, how difficult was it for you to reach orgasm	1 Extremely difficult or impossible	
	(climax)?	2 Very difficult	
		3 Difficult	
		4 Slightly difficult	
		5 Not difficult	
F13	Over the past 4 weeks, how satisfied	0 No sexual activity	
	were you with your ability to reach	5 Very satisfied	
	or intercourse?	4 Moderately satisfied	
		3 About equally satisfied and dissatisfied	
		2 Moderately dissatisfied	
		1 Very dissatisfied	
F14	F14 Over the past 4 weeks, how satisfied have you been with the amount of emotional closeness during sexual activity between you and your partner?	0 No sexual activity	
		5 Very satisfied	
		4 Moderately satisfied	
		3 About equally satisfied and dissatisfied	
		2 Moderately dissatisfied	
		1 Very dissatisfied	
F15	Over the past 4 weeks, how satisfied	5 Very satisfied	
	have you been with your sexual relationship with your partner?	4 Moderately satisfied	
	relationship with your partners	3 About equally satisfied and dissatisfied	
		2 Moderately dissatisfied	
		1 Very dissatisfied	
F16	Over the past 4 weeks, how satisfied	5 Very satisfied	
	have you been with your overall sexual life?	4 Moderately satisfied	
	inc.	3 About equally satisfied and dissatisfied	
		2 Moderately dissatisfied	
		1 Very dissatisfied	
F17	Over the past 4 weeks, how often did	0 Did not attempt intercourse	
	you experience discomfort or pain during vaginal penetration?	1 Almost always or always	
	aaring vaginar penetration.	2 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		4 A few times (less than half the time)	
		5 Almost never or never	

S.N.	Questionnaires	Responses	Remarks
F18	Over the past 4 weeks, how often did	0 Did not attempt intercourse	
	you experience discomfort or pain following vaginal penetration?	1 Almost always or always	
		2 Most times (more than half the time)	
		3 Sometimes (about half the time)	
		4 A few times (less than half the time)	
		5 Almost never or never	
F19	Over the past 4 weeks, how would you	0 Did not attempt intercourse	
	rate your level (degree) of discomfort	1 Very high	
	penetration?	2 High	
		3 Moderate	
		4 Low	
		5 Very low or none at all	
F20	How would you describe your overall	0 No sexual activity	Self-
	sexual life?	1 Dissatisfied	evaluation
		2 Moderately dissatisfied	
		3 Equally satisfied and dissatisfied	
		4 Moderately satisfied	
		5 Very satisfied	

Thank you for your time.

Annex IV: In-depth Interview Guideline

Guideline for In-depth Interview with participants who has sexual dysfunction identified from the quantitative survey findings.

S.N.	Main Questions/Issue	Additional Questions
01	How do you spend your days?	 What is your Occupation/Profession? How many hours do you spend on social media/mobile applications (Facebook, YouTube, Tiktok, Messenger, chat etc.) in a day?
02	What types of food do you usually eat?	 Do you prefer vegetarian or non-vegetarian food? Do you consume alcohol? If yes, do you consume it regularly or occasionally? Do you smoke cigarette or use any tobacco products? If yes, what do you use? When did you start using them?
03	Please provide some information about your family.	Number of family membersHow many children do you have?Are you planning to have another child?
04	Please share us about your marital/family relationship in brief	 What was your age at the time of your marriage? What is the age difference between you and your spouse? Do you talk to your husband or wife about sex and sexual relationships? If yes, what topics do you usually discuss? Have you had any types of conflicts within your family? If yes, then with whom? What are the conflicts about and with whom do you have these conflicts? Have you been living together with your husband or wife since you got married? If not, how many years have you not lived together? Why have you been living separately?
05	Do you or your spouse have any health issues?	 What health problems do you or your spouse have? What medications or treatments have you undergone? Since when have these problems existed? Has your spouse undergone any surgery? If yes, what kind of surgery was it? When was it done? Have you been involved in any accidents? If so, what kind of accident was it? Are there any ongoing problems as a result of the accident? Do you or your spouse have any reproductive health issues? If yes, what kind of issues? Have you faced any infertility problems? If yes, what solutions have you tried? Were the problems resolved? Do you or your spouse have any physical problems? Since when have these problems been present? Has this problem caused any issues in your sexual life?
06	In your community, is there any kind of discrimination between men and women?	 Have you experienced any gender discrimination in your family? In what situations does this discrimination usually occur? How do you perceive that gender discrimination has happened? Who usually makes the decisions in your family, men or women? Do you think men and women have equal opportunities socially? What is the role of men and women in the decision-making process for marriage? Who usually makes the decision to have children, men or women? Are there any incidents of gender-based violence in your community? If yes, what kind of incidents occur frequently? Who are usually the victims in these incidents? Why do you think this happens?

S.N.	Main Questions/Issue	Additional Questions
07	How do you perceive your sexual relationship with your spouse?	 Have you experienced an orgasm during sexual intercourse? Have you discussed this with your spouse? If not, why haven't you discussed it? Have you experienced any pain or problems during sexual intercourse? What kind of problems? Who have this problem, you or your spouse? Since when has this problem been affecting you? Have you taken any measures to solve it? If yes, what did you do? Are there any misunderstandings between you and your spouse? If yes, what kind of misunderstandings? Do you blame each other for anything? If yes, what do you blame each other for? Do you blame each other regarding sexual relations? If yes, who blames whom and why?
08	In your opinion, what should be done to maintain a healthy sexual relationship among couples?	 What should be the roles of couples? What can society and organizations do? What should doctor or healthcare workers do? What kind of policies and programs should the government implement for this?

Thank you!

Annex V: Key-informant Interview Guideline

Service providers (physicians) are the respondents of Key Informant Interview (KII).

S.N.	Issues/Questions	Additional Questions
01	You must have seen patients with sexual dysfunction. How do they usually come to you?	 Does patient describe their condition or you discover it during an examination? What types of sexual dysfunctions have you encountered?
02	What were their common characteristics of patient with sexual dysfunction?	 Age group Female or male Marital status Ethnic, regional, or geographical identity Economic status, profession/business Whether they are willing to talk about their problems or tend to hide them
03	In your experience, do they also have any familial or social problems related to their sexual dysfunction?	 Conflicts between husband and wife Have there been any incidents of violence or abuse? Are there any incidents of gender-based violence or sexual abuse? Have you found any mental trauma in them? If so, what kind of mental problems did they have?
04	Did they have any health problems?	 What kind of physical problems did they have, if any? What kind of mental problems did they have, if any? What kind of reproductive or infertility problems did they have, if any? Were there any physical problems or issues related to physical violence? Were there any problems related to mental distress or abuse? Were there any problems related to gender-based or sexual violence or abuse? Were there any issues related to social status or reputation?
05	What is the trend of people with sexual dysfunction coming for treatment?	 Is there a situation where people with sexual dysfunction are unable to come due to shame? Do they come without knowing that it is a problem? Do they come alone or with their spouse? Do they come for regular health check-ups or not?
06	In your experience, could there be any relationship between sexual dysfunction with reproductive health or infertility?	 Correct diagnosis or identification of the problem has not been made Problems seen or experienced by the husband or wife Situations where the husband or wife blame each other Are there any incidents of domestic violence or sexual violence due to sexual problems? What is the possibility of having scientific or medical relationships with sexual dysfunction?
07	Generally, what kind of treatment advice do you give to patients with sexual Dysfunction?	 Providing counseling to the husband and wife together Providing treatment and medication available in the health facility Advising them to come for regular treatment and analyzing the effectiveness of the treatment Referring to relevant specialists for treatment

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S.N.	Issues/Questions	Additional Questions
08	How do you evaluate the treatment services for individuals with sexual dysfunction at the hospital where you work?	 What is the availability of manpower? What is the supply status of necessary medicines? What is the availability of separate consultation room and counseling facilities for patients? What is the process of referral services?
09	What is the current state of sexual dysfunction in Nepal, the understanding of general people, and what are the challenges in its treatment?	 What is the perception about sexual relation among public people? What is the understanding of men and women about this in society? Does the current social media has a positive or negative impact on this? Does it have any relation to sexually transmitted diseases or infections?
10	What should be done to maintain a healthy sexual relationship among couples?	 What should be the role of couples? What can society and organizations do? What should doctor or healthcare workers do? What kind of policies and programs should the government implement for this?
11	If you have any additional information, advice, or suggestions about sexual dysfunction, please share them with us.	 Details of any real problems of sexual dysfunction of patients Any details of sexual dysfunction you have solved through treatment

Thank you!

Annex VI: Participant Informed Consent Form

Society for Local Integrated Development Nepal (SOLID Nepal)

Lalitpur-15, Satdobato, Lalitpur

Participant's Informed Consent Form

My name is______. I am working in Society for Local Integrated Development Nepal (SOLID Nepal). This organization is working on the study entitled-Prevalence of Sexual Dysfunction in Nepal.

The main objective of this study is to assess the prevalence of sexual dysfunction in Nepal through a cross-sectional study. This study also tries to identify and understand potential risks factors of sexual dysfunction and its association with non-communicable disease. The findings from this study serve as a critical foundation for further studies, policy development and interventions aimed at enhancing sexual health outcomes and overall quality of life.

You have been selected to participate in this study. If you choose to participate then your consent will be essential before enrollment and you must have complete information about the study before providing your consent. As a part of the study, your demographic information such as name, age, gender, occupation and educational qualification will be asked. Along with this, your height, weight, blood pressure and blood glucose will be measured. For blood glucose measurement, one drop of blood will be withdrawn from the tip of your finger. After that, you will be given a self-administrative questionnaire regarding your sexual life. If you feel uncomfortable answering any of the questions or no longer want to participate, you may withdraw from the study anytime without any consequences. This study aims to access the current situation of sexual dysfunction in Nepal, identify its causative factors and find appropriate solution measures. You will not receive any financial assistance for participating in this study.

The information you provide in this study will be confidential and safe. The information will be used for research purposes and findings will be presented to the relevant stakeholders only and your identity will not be disclosed. This study is conducted with the approval of the Nepal Health Research Council under the Government of Nepal. For further information, you can contact Ms. Namita Ghimire, Research Officer at NHRC at phone number 9841517677 or Dr. Khem Bahadur Karki the Principal Investigator of this research at phone number 9851054190.

If you agree to participate, please provide your consent by signing below. (Circle 1 if you agree and 2 if you do not agree)

Agree 1	Researcher's name:
Do not agree 2	Signature:
Signature:	Date:
Participant contact number:	Time:
Date: Time:	
Participant Code:	

Annex VII: Fruits and Vegetables Chart

Typical Fruit and Vegetables and Serving Sizes

VEGETABLES are considered to be:	1 Serving =	Examples
Raw green leafy vegetables	1 cup	Spinach, salad, etc.
Other vegetables, cooked or chopped raw	1/2 cup	Tomatoes, carrots, pumpkin, corn, Chinese cabbage, fresh beans, onion, etc.
Vegetable juice	1/2 cup	

FRUIT	1 Serving =	Examples
Is considered to be:		
Apple, banana, orange	1 medium size piece	E
Chopped, cooked, canned fruit	¹ / ₂ cup	
Fruit juice	¹ / ₂ cup	Juice from fruit, not artificially flavoured

Serving size One standard serving = 80 grams (translated into different units of cups depending on type of vegetable and standard cup measures available in the country).

Adopted from WHO STEPS Survey Tools

Annex VIII: Alcohol Measurement Chart

Alcohol - Standard drink

1 standard drink =



l standard bottle of **regular beer** (285ml)



1 medium size glass of wine (120ml)



Note: net alcohol content of a standard drink is approximately 10g of ethanol.

Adopted from WHO STEPS Survey Tools

Annex IX: Sampled Clusters

Province	District	District Code	Municipality	Ward
Koshi	Bhojpur	21	Hatuwagadhi Rural Municipality	1,4,5
	Taplejung	22	Phungling Municipality	2,3,4,5,7
	Jhapa	23	Buddhashanti Rural Municipality	3
	Sunsari	24	Dharan Municipality	11,12,17
	Udayapur	25	Triyuga Municipality	11
Madhesh	Saptari	09	Chhinnamasta Rural Municipality	1
	Dhanusa	10	Dhanusadham Municipality	1,3
	Rautahat	11	Yamunamai Rural Municipality	1
	Parsa	12	Parsagadhi Municipality	3
	Bara	13	Nijgard Municipality	7, 8, 9, 12
	Sarlahi	17	Bagmati Municipality	12
Bagmati	Lalitpur	01	Lalitpur Municipality	15
	Rasuwa	02	Uttargaya Rural Municipality	5
	Makwanpur	03	Indrasarowar Rural Municipality	1
	Chitawan	04	Madi Municipality	5,3
	Kavre	31	Dhulikhel Municipality	5
	Nuwakot	32	Bidur Municipality	9
Gandaki	Kaski	18	Pokhara Municipality	4,6,8,9
	Mustang	19	Gharpjhong Rural Municipality	2,4,5
	Nawalpur	20	Kawasoti Municipality	4,5
	Gorkha	33	Gorkha Municipality	5,7,8
Lumbini	Bardiya	08	Rajapur Municipality	6
	Rupandehi	26	Devdaha Municipality	10
	Kapilbastu	27	Yesodhara Rural Municipality	3
	Dang	28	Ghorahi Municipality	15
	Rolpa	29	Triveni Rural Municipality	5
Karnali	Surkhet	06	Bheriganga Municipality	12
	Salyan	30	Bagchaur Municipality	2
	Jumla	05	Chandannath Municipality	6
	Humla	07	Simkot Rural Municipality	1/2
Sudurpaschim	Doti	14	Dipayal Municipality	2, 3, 5, 6
	Kailali	15	Mohanyal Rural Municipality	2, 3, 4
	Kanchanpur	16	Bhimdatta Municipality	2
	Darchula	34	Malikarjun Rural Municipality	3,8

Annex X: KISH Grid Table

Number of	Number of Eligible Respondents							
Households	1	2	3	4	5	6	7	8
1	1	1	1	1	1	1	1	1
2	1	2	2	2	2	2	2	2
3	1	1	3	3	3	3	3	3
4	1	2	1	4	4	4	4	4
5	1	1	2	1	5	5	5	5
6	1	2	3	2	1	6	6	6
7	1	1	1	3	2	1	7	7
8	1	2	2	4	3	2	1	8
9	1	1	3	1	4	3	2	1
10	1	2	1	2	5	4	3	2

Annex XI: Cronbach-alpha Calculation

Domains	Questions	Cronbach-alpha	Weighted Cronbach-alpha
Desire	f1,f2	0.765	0.749
Arousal	f3,f4,f5,f6	0.838	0.781
Lubrication	f7,f8,f9,f10	0.886	0.851
Orgasm	f11,f12,f13	0.79	0.701
Satisfaction	f14,f15,f16	0.815	0.815
Pain	f17,f18,f19	0.918	0.885
Total	f1-f19	0.925	0.885

Female Sexual Function Index (FSFI)

International Index for Erectile Function (IIEF)

Domain	Questions	Cronbach-alpha	Weighted Cronbach-alpha
Erectile function	m1,m2,m3,m4,m5,m6	0.925	0.917
Orgasmic function	m9,m10	0.748	0.723
Sexual desire	m11,m12	0.808	0.798
Intercourse Satisfaction	m6,m7,m8	0.833	0.82
Overall satisfaction	m13,m14	0.785	0.778
Total	m1-m15	0.945	0.94

Annex XII: Field Researchers

- 1. Badri Prasad Mainali
- 2. Bishnu Prasad Dahal
- 3. Dhirendra Kalauni
- 4. Harish Bhatta
- 5. Jenisha Subedi
- 6. Kishor Kharel
- 7. Pabitra Bhattrai
- 8. Pradip Prasad Duwadi
- 9. Prakritee Guragai
- 10. Pratima Niraula
- 11. Prem Kumari Gurung
- 12. Santosh Poudel
- 13. Santoshi Khadka
- 14. Shekhar Shrestha
- 15. Stela Shakya
- 16. Tasi Lama

Society for Local Integrated Development Nepal (SOLID Nepal) Satdobato, Lalitpur, Bagamati Province, Nepal Tel. No. : 01-5151855, 5151656 Email: info@solidnepal.org.np www.solidnepal.org.np