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Gender-Based Anxiety Disorders and Mental Health in Nepal

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Abstract

Anxiety and depression illnesses are getting more and more common around the world and gender inequality is a major factor behind these diseases. This paper, analyze the gendered anxiety disorders common in Nepal through the lens of the 2022 NDHS data set. Under a cross-sectional research design involving 14,280 households, in both urban and rural households. The assessment of anxiety was done using the Generalized Anxiety Disorder scale (GAD-7), which shows that females aged between 15-24 years are more affected, with 20.5 among the youth. Women across all severity of socio-demographic factors are found to be more anxious than men. The work also reveals that the vulnerable and excluded population, the Dalit and the Madhesi, are the leading victims of the phenomenon. This explains how gender-based discrimination works with other structural factors arising from feudalism, capitalism, and socioeconomic, cultural, and environmental settings. Rural-living woman in the lowest wealth quintile has higher odds of depression compared to their male counterparts. More over the rationale for mental health policies should directly address and engage with, the economic and societal oppression enshrined in patriarchal and capitalist systems. Such interventions should be wide to correct social injustice and ensure equal access to mental health services, especially for women of color. Implementing a focused Programme, which encompasses socio-economic and gender-sensitive changes and incorporating these into mental health Battings could help reduce mental health loads and bring social and economic transformation.

Keywords*:* Anxiety, disorders, gender disparities, health inequalities, mental health

Introduction

Depression and anxiety disorders are among the most prevalent and debilitating mental health conditions globally, significantly impacting individuals' overall quality of life and productivity. According to the World Health Organization (WHO, 2021), these disorders collectively contribute to more than 12 percent of the global disease burden, making them the leading causes of disability worldwide. They are characterized by intense emotional distress, pervasive worry, and heightened sensitivity to personal and environmental challenges, which disrupt daily functioning and overall well-being.

Concerning these psychological traits, one can state that women seem to have a higher level of anxiety than men due to cultural programming and expectations. This gender difference is well illustrated across the different studies as it has been revealed by the research that women have nearly twice the rate of the incidences of anxiety disorders as that of men. Such a study, conducted in Nepal, showed that 21.9 percent of women said they suffered from anxiety as opposed to 11.3 percent of men. Gender differences in mental health-related problems can be due to genetic hormonal and psychological factors (Shawon et al., 2024).

Recently, Nepalese individuals have become more occupied, fearing anxiety-related infections within their community. The situation is so alarming that the related issues may never be resolved, particularly about gender imbalances (Yilmaz & Bohara, 2021). However, surveys show that ladies between teenage brackets encounter more situations that may lead them to develop various forms of panicking as compared to their counterparts in the same age group; these include high levels of gender-based violence, disparities between male and female genders, but not least, limited accessible mental health support systems (Yilmaz & Bohara, 2021). Especially among those who are left behind by the migrants, there is this particular category of young people from Nepal who are very much at risk of having mental problems such as depression and anxiety (Aryal et al., 2019).

A further study from close to India indicates that causes of anxiety disorders like age, earnings, and social media usage may influence anxiety prevalence in rural teenagers, with girls experiencing more cases of social anxiety than boys (Rajkumar et al., 2022). Therefore, there is a need for specialized aid in Nepal aimed at helping young females overcome their particular mental health difficulties.

Gender anxiety disorders are those mental health conditions that can be influenced by gender-specific factors such as societal expectations, biological variations, or cultural pressures. Particularly for women within low-income and

middle-income countries (LMICs) like Nepal, there are unique sources of pressure like gender-based discrimination, economic reliance upon men, or even cultural norms that restrict their freedom of movement. All these challenges combined with poor access to care services in general make it more likely for the female gender to suffer from high levels of anxiety and emotional distress (Laslett et al., 2024; Luitel et al., 2019; Maharjan et al., 2021).

Although previous studies have identified gender differences in mental health conditions, there is a lack of comprehensive, data-driven research specifically focusing on anxiety and depression in Nepal. To address this gap, the current study examines gender-based mental health inequalities using recent data from the Nepal Demographic and Health Survey (NDHS, 2022). By exploring the socio-cultural factors contributing to these disparities, this research will provide valuable insights for policymakers & researchers to develop gender-sensitive mental health initiatives in Nepal.

Method and Materials

Datasets and Study Design

This was a cross-sectional research that used secondary data from the 2022 Nepal Demographic and Health Survey (NDHS) which was carried out by New ERA and it got technical support from ICF and was financially supported by the USAID. The NDHS received nationally representative information regarding a wide range of health indicators major among them being mental health. This study looked at data collected in the countrywide represented Nepal Demographic Health Survey (NDHS) 2022.

Sample and Sampling

The NDHS 2022 sample design is based on the 2011 Housing and Population Census framework, as detailed. In stage one; the seven provinces were stratified according to urbanity, thereby producing fifteen strata in provinces. Implicit stratification with a proportional allocation technique was also employed within each stratum whereas a probability proportional to size method of selection was used for breaking down the administrative units even further. The inclusion task force settled for 476 primary sampling units (PSUs) in total, 248 being taken from urban areas while 228 originated from rural areas; hence their choice depended on the PSU's magnitude inside all geographical zones. Every PSU was subjected to a household listing exercise whereby wards with more than 300 households were then subdivided and one segment was chosen based on probability proportional to size. Each of the clusters comprised thirty households making it a total of 14,280

households (urban areas accounted for 7,440 while in rural settings 6,840). The actual number of respondents included 14,845 females and 4,913 males. More information about this is available elsewhere (NDHS, 2022).

Data Collection Method

There were 19 teams for the NDHS 2022 survey. Each team was composed of a supervisor, a male interviewer, three female interviewers, and a biomarker specialist. Data collection was done by these teams between 5th January and 22nd June 2022.

Data Analysis Method

Using the 2022 NDHS data from 14,280 households, this paper examined gender-specific anxiety disorders. It was necessary to clean the data by dealing with missing values as well as anomalies. Descriptive statistics were computed in terms of frequencies as well as percentages compared with sex. Multivariate linear regression was used to adjust for possible confounders such as age, education level, and socioeconomic status while examining the impact of sex differences. On a comparison basis, Stratified analyses were conducted between anxieties measured in urban as opposed to rural environments (i.e., stratified analyses). Significance criteria defined at $p<0.05$ Statistical analysis was performed using SPSS Version 20.

Dependent Variables

The generalized anxiety disorder assessment (GAD-7) tool was used during NDHS 2022. GAD-7 comprises seven items that target anxiety measurement. Each item on GAD-7 was to be scaled using a 4-point Likert scale which had (0=not at all, 1=several days, 2= more than half the days, 3= nearly every day). The final GAD-7 score was derived by adding all seven scores, giving a range between 0 and 21. Scoring categorizations include; 0-5=no anxiety, 6-14=mild to moderate anxiety, and 15-21 = severe anxiety. Cases of anxiety were taken in this article as those with a GAD-7 score of above 5 (NDHS, 2022).

Independent Variables

The examination of a wide range of independent variable effects was conducted in this study. Among the independent variables used in this analysis are some socio-demographic factors important for basic comprehension of the participant distribution. Age ranges constitute these independent variables with the categories being subdivided into groups of 15-24 years, 25-34 years, and 35 years plus. Participants' educational status can be separated into literate who can

read and write at primary school or higher level, and illiterate not attended any formal education system since inception. The classification also groups together those whose origins are either Madhesi, Muslims, or any other minority group but different from the above. Together, they help us see the extent to which distinct demographic variables may affect different outcomes among our respondents.

Results and Discussion

This section examines the distribution of symptoms of anxiety and its correlation to socio-demographic and economic aspects utilizing GAD-7 scores. The level of anxiety was higher among people with low income, unemployment, and less social support; however young adults and females scored higher.

Table 1 also summarizes the participants in terms of their socio-demographic characteristics in terms of age, ethnic origin, region, province, education, monetary value, and gender split in terms of sample size.

Table 1
Socio-Demographic Profile of the Respondent

Category	Total		Male		Female
Age Group	N	%	N	%	N
15–24	4,453	41.40	1,842	58.61	2,611
25–34	3,624	36.81	1,332	63.21	2,292
35 and above	4,246	41.03	1,739	59.01	2,507
Ethnic Group					
Brahmin/Chhetri	3,281	37.61	1,232	62.42	2,049
Dalit	1,773	37.12	658	62.92	1,115
Janajati	4,604	40.63	1,869	59.42	2,735
Madhesi/Muslim/Other	2,664	43.34	1,153	56.73	1,511
Residence					
Urban	8,526	40.62	3,462	59.42	5,064
Rural	3,798	38.22	1,451	61.80	2,347
Province					
Koshi	2,123	41.63	882	58.42	1,241
Madhesh	2,509	39.71	997	60.32	1,512
Bagmati	2,707	44.90	1,214	55.12	1,493
Gandaki	1,091	35.51	387	64.51	704
Lumbini	2,172	37.42	812	62.60	1,360
Karnali	724	36.73	266	63.32	458
Sudurpashchim	996	35.60	355	64.41	641

Education					
Illiterate	2,337	16.82	393	83.22	1,944
Literate	9,986	45.32	4,519	54.72	5,467
Wealth Quintile					
Poorest	2,095	35.92	751	64.12	1,344
Second	2,305	40.52	933	59.52	1,372
Middle	2,469	38.82	957	61.21	1,512
Fourth	2,839	40.02	1,135	60.01	1,704
Richest	2,616	43.52	1,137	56.51	1,479

Source. NDHS 2022

The sample includes 15-24, 25-34, and 35+ age groups, with females outnumbering males. The 15-24 age groups have the highest representation (41.4%), followed by 25-34 at 63.2% and 35+ at 59 percent, indicating greater female representation. The study found that ethnic distribution is not homogeneous, with Janajati (40.6%) leading the pack, followed by Brahmin/Chhetri (36.6%), Madhesi/ Muslim/Other (43.3%), and Dalit (37.1%), with equal male representation across all ethnic categories.

The sample primarily resides in urban areas, with a higher female population (59.4%) than in rural areas (61.8%), despite most people of both sexes residing in towns. This shows that there is a slightly greater concentration of women in the countryside compared to cities even though most people of each sex live in towns.

Notably, the most feminine provinces are Gandaki, Sudurpashim, and Karnali, respectively with percentages of 64.5 percent, 64.4 percent, and even 63.3 percent. Conversely, Bagmati has the least number of women represented with a record percentage of 55.1 percent. Whereas there are differences across these regions; there is one constant fact that remains evident whereby there are more females as compared to males in all the provinces showing an inequality that is specifically gender-based in this country.

Education data shows significant gender disparities, with 83.2 percent of females being illiterate and 16.8 percent being males. However, 54.7 percent of females are literate, compared to 45.3 percent of males. The majority of those who cannot read are females, despite their smaller numbers.

The wealth distribution shows a rise in women's representation in poorer economic groups, with 64.1 percent in the lowest quintile and 61.2 percent in the middle quintile, suggesting potential economic marginalization.

The study reveals a high prevalence of females, particularly in rural areas, and illiteracy, highlighting the need to address gender inequalities in education and socio-economic development.

Prevalence of Symptoms

Table 2 shows that anxiety is observed in 20.5 percent of the females but only 11.7 percent among the men within the age bracket of 15-24 years old. This is also repeated among adults aged 25-34 where it was found that 22.4 percent of women had experiences with anxiety symptoms against 11.0 percent of males; similarly, for the 35 years and above group it was reported that 21.2 percent of females had been affected as opposed to 11.1 percent males implying that younger ladies are have more chances of developing this condition.

Table 2

Prevalence of Anxiety Symptoms by Socio-Demographic Variables

Category	Symptoms of Anxiety			
	Male		Female	
	%	N	%	N
Age Group				
15-24	11.70	1,842	20.52	2,611
25-34	11.02	1,332	22.41	2,292
35 and above	11.13	1,739	21.22	2,507
Ethnic Group				
Brahmin/Chhetri	13.90	1,232	20.72	2,049
Dalit	15.70	658	28.12	1,115
Janajati	10.60	1,869	19.61	2,735
Madhesi/Muslim/Other	7.60	1,153	23.32	1,511
Residence				
Urban	11.51	3,462	21.72	5,064
Rural	10.70	1,451	22.51	2,347
Province				
Koshi	13.70	882	24.42	1,241
Madhesh	6.51	997	22.11	1,512
Bagmati	13.52	1,214	19.02	1,493
Gandaki	8.22	387	17.82	704
Lumbini	11.72	812	21.91	1,360
Karnali	17.82	266	27.82	458
Sudurpashchim	8.51	355	24.21	641

Education				
Illiterate	7.51	393	25.21	1,944
Literate	11.72	4,519	21.81	5,467
Wealth Quintile				
Lowest	13.92	751	21.82	1,344
Second	13.42	933	25.51	1,372
Middle	8.83	957	24.62	1,512
Fourth	11.02	1,135	21.32	1,704
Highest	10.32	1,137	16.71	1,479

Source. NDHS 2022

Dalit females experience the highest anxiety symptoms (28.1%), while males report 15.7 percent. This gender gap persists across all ethnicities, with Brahmin/Chhetri and Janajati having slightly lower rates.

In anxiety symptoms, there appears separation between urban and rural areas. Anxiety levels remain high in both rural areas among women as opposed to men (11.5% versus 21.7% in urban and 22.5%) while this can be taken to mean that more rural women suffer from anxiety sickness than the urban types.

In terms of the province, there are the highest proportions of anxiety among women in Koshi (24.4%) and Karnali (27.8%), while Madhesh (6.5%) and Gandaki (8.2%) have the lowest among males. The results point to an important regional disparity in terms of anxiety, particularly for women in underdeveloped provinces such as Karnali suggesting possibly a lack of adequate mental healthcare services there.

Anxiety symptoms vary based on education level, with illiterate women experiencing higher rates (25.2%) and literate individuals experiencing higher rates (21.8%), indicating that education doesn't fully compensate for gender differences in anxiety.

Anxiety prevalence is influenced by income level, with females in the second income quintile having the highest rate at 25.5 percent, followed by middle-income individuals at 24.6 percent and lowest-wealth individuals at 21.8 percent. Wealthier individuals experience anxiety at 10.3 percent and 16.7 percent, respectively.

Females experience higher anxiety symptoms due to factors like younger age, marginalized ethnicity, rural residence, lower education, and economic

disadvantage, necessitating psycho-social interventions targeting vulnerable women.

Linear Regression Analysis

Specific predictors of Anxiety based on the socio-demographic and economic features established from the linear regression analysis include low income and unemployment; low social support; young age and female gender were other relevant predictors, as they had higher GAD-7 scores, showing that these factors have the potential to influence the mental health status in a complex way.

Table 3

Socioeconomic and Demographic Predictors of Anxiety among Adults: A Linear Regression Analysis Using GAD-7 Scores

Independent Variables	β (Coefficient)	Standard Error (*SE*)	*p*-value	95% Confidence Interval (*CI*)
Age	-0.015	0.004	0.001**	-0.023, -0.007
Education No Education	Reference			
Basic	-0.18	0.025	<0.001***	-0.230, -0.130
Secondary and above	-0.3	0.04	<0.001***	-0.380, -0.220
Gender Male	Reference			
Gender Female	0.4	0.07	<0.001***	0.270, 0.530
Wealth Quintile Lowest	Reference			
Second	-0.05	0.03	0.09	-0.110, 0.010
Middle	-0.11	0.035	0.003**	-0.180, -0.040
Fourth	-0.22	0.035	<0.001***	-0.290, -0.150
Highest	-0.29	0.04	<0.001***	-0.370, -0.210
Urban	Reference			
Rural	0.18	0.03	<0.001***	0.120, 0.240

Notes. (Dependent Variable; GAD-7 Anxiety Score); *** Significant at P < 0.00, ** = p <0.01 and * = p< 0.05.

The linear regression analysis in Table 3 The coefficient on age is negative (β= 0.015, *p*=0.001), which means an association exists between lower age in years and lower anxiety ratings. This would hence imply that one more additional year in GAD-7 anxiety score would be -0.015, hence showing that elderly individuals have lower anxiety levels.

Education is important in the context of anxiety. Demonstrably, education level has a strong negative influence on anxiety; lower education level is associated with higher levels of anxiety. This is seen between individuals with basic education (β= -0.180, p<0.001) and those with higher education (β= -0.300, p< 0.001). Education leads to lower anxiety scores, as it serves as a buffer against mental disorders like depression, indicating that individuals with higher education tend to have lower anxiety levels.

The interaction term between gender and mental illness was significant for women who had more anxiety than men (β =0.400, p< 0.001). Females exhibit higher anxiety levels than males due to societal expectations, hormonal imbalances, and the menstrual cycle or pregnancy period, consistent with previous studies showing higher anxiety disorder prevalence.

Anxiety level could be predicted by one's wealth status. Noteworthy, compared with those who were categorized into the least wealth quintile, the middle rankers revealed lower levels of anxiety (β= -0.110, p=0.003), while rates for those placed in other categories have significantly dropped too: fourth (β= -0.220, p<0.001) and highest quintile (β = -0.290, p<0.001). All these imply that on both ends of the measuring scale, higher levels are associated with better relief from stress or anxiety; this might happen because such individuals have more means at their disposal, including social security systems. Even though the second least wealthy quintile yielded non-significant findings (p=0.090) if considered from a broader perspective, this data points us toward positive correlations between economic welfare and decreased stress most probably due to extra capabilities built through joint forces within one community.

Place of abode plays a major role, as individuals in rural areas (β=0.180, p<0.001) had higher anxiety scores compared to their urban counterparts. The positive coefficient indicates that stressors like inadequate healthcare access and limited mental services may contribute to higher levels of anxiety disorders among rural residents.

The analysis reveals socioeconomic and demographic factors influencing anxiety levels, including age, education, gender, wealth status, and location. Further education and wealth protect against anxiety, while women and remote areas are risk factors.

This study reveals an over-representation of females among various disadvantaged groups in Nepal through socio-demographic analysis of mental health disparities in rural areas, lower wealth quintiles, and among the illiterate

populations, showing higher percentage levels of female cases compared to their male counterparts.

The socio-economic and demographic disparities have significant effects on prevalence rates for anxiety symptoms, where consistently women show more anxiety than men across all categories. This trend is similar to those from other global or regional studies mentioning gender as one important factor predicting mental well-being in humans (Vuorre & Przybylski, 2023).

All age groups exhibit more widespread anxiety symptoms among women than men, according to the research. It is specifically pronounced in young females aged 15-24 years, where 20.5 percent of them experience an anxiety disorder compared to 11.7 percent in males. These results support previous studies that show that women are more likely to suffer from mental health issues like depression and anxiety than men (Liu et al., 2021; Lu et al., 2023).

These disparities result from biological, social, or cultural factors. In the low-income countries, for example, Nepal, factors such as cultural, social, and economic situations play several roles. Hillman and Radel found that 2023 indicates that women experience additional psychological stresses like gender-based violence and economic dependency imposed upon them due to their gender. The meeting point of all these factors in formative years could be responsible for increased stress levels, especially among young females; at such times, gender expectations and pressures are arguably at their highest points.

There exist significant ethnic disparities in the prevalence of anxiety symptoms, as demonstrated by the data. While Dalit females have the highest rates for anxiety symptoms (28.1%), this is closely followed by that of Madhesi/Muslim/other females at 23.3 percent. These findings are disconcerting given that minority groups experience widespread systemic discrimination, are relegated to few resources, and are sometimes ostracized, leading to growing mental health issues among them (Shawon et al., 2024). The high prevalence rates of anxiety symptoms among Dalit and Madhesi/Muslim women point to their dual precariousness arising from their ethnicity plus gender identities. Analogously, anxiety-related signs vary among regions, and it is understood through research evidence that girls from poor regions such as Karnali record 27.8 percent while Koshi records 24.4 percent since they seem to be more anxious.

In these places, there are numerous infrastructural problems like inadequate health care delivery systems as well as few psychosocial support systems that are accessible, which makes women suffer more (Giusto et al., 2024). On the other

hand, men in regions like Madhesh (6.5 percent) and Gandaki (8.2 percent) have smaller proportions of anxiety, suggesting that women's mental health outcomes are particularly influenced by regional differences. This corresponds with earlier research, which underscores the significance of regional disparities in the availability of mental health services (Salinas-Perez et al., 2023).

According to the analysis, we learn that anxiety levels are greatly affected by socioeconomic status and education. The leading group in terms of anxiety levels among females includes those in the second wealth quintile, recording 25.5 percent, with the middle and the lowest wealth quintiles following closely behind; thus, economic deprivation is seen to worsen the chances of mental health. However, anxiety prevalence is consistently higher in females compared to males of all age groups, notwithstanding that there is a general reduction for both genders in the highest wealth quintile. Findings globally have shown that mental health problems increase with poverty and economic uncertainties, especially for females (Moitra et al., 2023).

Restricted healthcare, lack of social support system around them, as well as poverty, leave us at more risk when it comes to our mental stability because if we become sick, there is nobody who can provide for others or even give them proper medical attention if need be. Anxiety symptoms are also affected by educational achievement. Illiterate women have significantly higher anxiety levels (25.2%) as compared to illiterate men (7.5%). Education reduces anxiety rates, but gender differences persist due to social norms and economic factors, and education alone may not improve mental well-being for all (Love et al., 2024).

The regression analysis revealed that female participants scored higher in anxiety levels compared to male participants, indicating a significant gender-specific correlation (β=0.400, p<0.001), thus gender bias in mental health provision confirming the original hypothesis held about it in Nepal but not elsewhere by any means whatsoever; education also serves as protection for anxiety disorder while other factors increase its likelihood, like coming from top high school grades or another social economic status such as wages accompanying rather an urban residence instead rural ones (β= -0.300, p< 0.001).

That anxiety reduces as the wealth quintile rises was another notable result, which is supported by data depicted in Jordans et al. (2019; Killingsworth et al., 2023) showing that the anxiety levels dropped for individuals found in better economic positions (β =-0.290, p<0.001), probably because of enhanced quality health facilities as well as improved social welfare systems.

The observation that rural dwellers have higher levels of stress compared to their urban counterparts in terms of β =0.180; $p<$ 0.001 reveals impact zone disparities on mental illness issues. To get help for mental issues affecting them, rural women have too many signalized roads because of their culture; therefore, they rarely receive such services. This population cannot afford such services because there are very restricted healthcare services for them (Corrigan & Nieweglowski, 2019). The study emphasizes the importance of bridging the rural-urban divide for the success of psychiatric initiatives and their budgeting requirements.

In the future, research should focus on identifying and assessing culturally acceptable and cost-efficient strategies that seek to enhance access to mental health treatment among women living in the countryside.

Conclusion

This work establishes that there is gender disparity that continues to affect the mental health of Nepalese women, especially anxiety disorders. Women are at a higher risk of affecting by anxiety if they are younger, belong to an ethnic racial group, reside in rural areas, have a low level of education, and are financially unstable. Hence, mental health care in particular requires gender-sensitization that involves trying to understand the roles played by socio-economic factors in shaping mental health or ill health.

It consequently means that mental health policies of the future shall aim at equal utilization of mental health services despite existing infrastructure-related inequalities. The ‘gender lens’ should be then incorporated into existing approaches by targeting the source of mental health disparity. Increased coverage to get improved mental health issues, making mental healthcare easily accessible, starting awareness campaigns to alter society’s perception, and most importantly, offering economic support for women should be the next steps that can help in avoiding anxiety levels.

Implementation of these measures will reduce the causes of mental health disorders in the population of Nepal and support socio-economic development for all provinces of the country.

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