Original Article

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Status of Anxiety and Depression among Caregivers of Mentally Ill Patients in a Tertiary Hospital

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ABSTRACT

Introduction: The main source of support for mentally ill patients is family, and they take the role of caregivers. Caregivers of mentally ill patients are at great risk of developing anxiety and depression. The main objective of the study was to find out the status of anxiety and depression among caregivers of mentally ill patients in a tertiary hospital.

Methods: A descriptive cross-sectional research design was adopted. A purposive sampling technique was used to select 263 caregivers of mentally ill patients at the psychiatric department of Tribhuvan University Teaching Hospital. Data was collected through an interview technique with a semi-structured questionnaire, along with a pretested and validated Nepali version of the General Anxiety Disorder and Patient Health Questionnaire scale to assess anxiety and depression, respectively. SPSS version 16 was used to analyze the data using descriptive and inferential statistics (chi-square tests). Ethical consideration was maintained throughout the study.

Results: Anxiety and depression among caregivers of mentally ill patients were 19.8% and 18.2%, respectively. Risk factors significantly associated with anxiety and depression were sex and health problems of caregivers, social support received by caregivers, and sex of the patient. The type of mental illness of the patient was significantly associated with anxiety, while ethnicity and educational level were significantly associated with depression among caregivers.

Conclusion: Minimal anxiety and mild depression were seen among caregivers of mentally ill patients. Thus, there is a need for a screening test and regular psychological counseling for the caregivers of mentally ill patients to prevent mental illness.

Keywords: Anxiety, caregiver, depression, mentally ill patients

INTRODUCTION

Caregivers are those who can be family member, near neighbor or close friend and they provide care to the mentally ill patients.[1] Caregivers have to face significant amount of strain and difficulties during the care of mentally ill patients and include a range of psychological, emotional, social, physical, and financial problems. They are at great risk to develop mental health problems like anxiety and depression. Anxiety and depression among caregivers had an impact on both caregivers and patients.[2]

A study conducted in Brazil in 2020 shown, the prevalence of anxiety and depression among caregivers was 32.5% and 40% respectively.[4] Similar study conducted in Nepal depicts-in 2021, the prevalence of anxiety and depression among caregivers of mentally ill patients was 24.5% and 19.6% respectively. [12] Such studies are limited in the context of Nepal. This study aimed

to find out the status of anxiety and depression among caregivers of mentally ill patient at a Tertiary Hospital, Kathmandu, Nepal.

METHODS

Quantitative approach of descriptive cross-sectional research design was used to assess anxiety and depression among the caregivers of mentally ill patients attending the outpatient and inpatient department of T. U. Teaching Hospital, Maharajgunj, Kathmandu. A purposive sampling technique was used to select the samples. Sample size was determined by taking the prevalence of anxiety and depression of Mishra & Shakya (2021)[12], and using Cochran's formula. A total of 263 caregivers, who gave written consent and met the inclusion criteria, were interviewed face-to-face by the researcher from 7th August to 2nd September 2022.

The family members of patients diagnosed with psychiatric problems who were directly involved in the care of the patients for a minimum period of six months and were willing to participate in this study were included. Data was collected after the interview schedule had been pretested with 10% of the total sample size attending the inpatient and outpatient departments of the Mental Hospital, Lalitpur.

The pre-tested Nepali version of the semi-structured interview schedule was used to assess the socio-demographic characteristics of caregivers and patients. Anxiety and depression status in caregivers were measured using the validated Nepali translated version of Generalized Anxiety Disorder (GAD-7) and Patient Health Questionnaire (PHQ-9), respectively.

The GAD-7, having 7 items with 4 domains, was used to assess anxiety. On a 4-point Likert scale, the item received ratings ranging from 0 (not at all) to 3 (always). The total score range for the GAD-7 was 0-21, and each item was scored on a scale of 0-3. Cut-off scores greater than 10 were applied. This instrument's sensitivity and specificity were 89% and 82%, respectively. GAD-7's internal consistency was high (Cronbach's alpha=0.89).[8]

The PHQ-9 instrument, having 9 items, was used to identify depression. Scores for each item range from 0 (Not at all) to 3 (Always). Cut-off scores greater than 10 were applied, as reported in other studies, to determine who had depression. It is a valid and reliable instrument for screening depression in the primary care setting in Nepal because it has been validated in terms of criterion validity, convergent validity, and reliability. PHQ-9's internal consistency was high (Cronbach's alpha=0.84).[10]

Ethical approval was obtained from the Institutional Review Committee (IRC) of T.U., I.O.M., Maharajgunj, and permission from T.U. Teaching Hospital, Kathmandu. The purpose and procedure of the study were clearly explained to the study respondents to meet the inclusion criteria for participating in the study. Data was collected after getting informed written consent from each participant. Respondents had been informed that they can leave the study at any time they want. Privacy was maintained by interviewing respondents in a separate corner/ room of the hospital (even without a patient), by keeping all the collected information confidential and using it only for study purposes. Data was gathered by the researcher using an in-person interviewing method with a semi-structured interview schedule in Nepali.

Data was collected from 2079/4/22 to 079/5/18 B.S. (2022/08/07 to 2022/09/02 A.D.). Each day, 8-10 respondents were interviewed from 8 am to 4 pm, and the time required to complete the interview was 20-25 minutes for each respondent. Data collection has been done 7 days per week, even on public holidays. Data was collected at the time while they were waiting for their turn for a checkup, and after finishing their checkup in the outpatient department, and before and after rounds in inpatient departments. Collected data were stored in a safe place that was only accessible to the researcher.

The collected data were entered into an Excel spreadsheet and transferred to Statistical Package for Social Sciences (SPSS) version 16 for analysis. Under descriptive statistics, frequency distribution, percentage, mean, and standard

deviation were calculated. Descriptive statistics were also used to assess the level of anxiety and depression among caregivers. Under inferential statistics, the chi-square test (at 5% level of significance and 95% CI) and Spearman's rank correlation coefficient test were calculated. The association between anxiety and depression and a few selected variables was investigated using chi-square and Fisher's exact tests. Spearman's rank correlation coefficient test was used to examine the relationship between anxiety and depression.

In this study, those who were family members or relatives taking care of the mentally ill patient for at least six months uninterrupted and accompanying the patient at the time of data collection were considered caregivers. Diagnosis of the patients was obtained from the patients' record card or self-reported by caregivers. The mental illness of the patients is further classified according to WHO International Classification of Diseases (ICD-10) code.

RESULTS

Table 1: Socio-demographic Characteristics of Respondents (n=263)

Characteristics	Number	Percentage
Age in completed years		
18-25	52	19.8
26-35	55	20.9
36-45	67	25.5
46-55	89	33.8
Mean: 38.3±1.12 years		
Gender		
Male	160	60.8
Female	103	39.2
Ethnicity		
Janajati/Aadibasi	117	44.5
Brahmin/Chhetri	93	35.4
Dalit	36	13.7
Madhesi	17	6.5
Religion		
Hinduism	225	85.6
Buddhism	21	8.0
Islam	12	4.6
Christianity	5	1.9
Residence		
Urban	168	63.9
Rural	95	36.1
Marital Status		
Married	200	76.0
Unmarried	58	22.1
Divorce	5	1.9
Educational status		
Can read and write	234	89.0
Cannot read and write	29	11.0
Educational level (234)		
Below secondary level	83	35.47
Secondary and above	151	64.53
Type of Family		
Nuclear family	135	51.3
Joint family	128	48.7

Table 2: Respondents' Level of Anxiety and Depression (n=263)

Characteristics	Number	Percentage
Level of Anxiety		
Minimal anxiety (0-4)	111	42.2
Mild anxiety (5-9)	100	38.0
Moderate anxiety (10-15)	50	19.0
Severe anxiety (16-21)	2	0.8
Level of Depression		
No Depression	28	10.6
Minimal depression (1-4)	89	33.8
Mild depression (5-9)	98	37.2
Moderate depression (10-14)	37	14.0
Moderately severe depression (15-19)	10	3.8
Severe depression (20-27)	1	0.4

Possible score for level of anxiety: 0-21
Possible score for level of depression: 1-27

Table 1 reveals that the majority (60.8%) of the respondents were male. Most respondents (85.6%) were Hindu, and only 1.9% of respondents were Christian. Regarding marital status, a majority (75.3%) of the respondents were married, whereas 1.9% of the respondents were divorced. Most respondents (89.0%) were able to read and write.

Table 2 shows the respondents' anxiety and depression levels. The anxiety of respondents was 19.8% (cut-off point 10), and the depression of the respondents was 18.2% (cut-off point 10). About 42.2% of the respondents experienced minimal anxiety, whereas 37.2% respondents experienced mild depression.

Table 3: Association between Respondents' Anxiety Level with Socio-demographic Variables (n=263)

Variables	Minimal to mild anxiety No. (%)	Moderate to severe anxiety No. (%)	χ^2 value	*p*-value
Age				
18-39	110(82.1)	24(17.9)	.597	.536
40-55	101(78.3)	28(21.7)		
Sex				
Female	120(75.0)	40(25.0)	7.040	**.011**
Male	91(88.3)	12(11.7)		
Ethnicity				
Brahmin/Chhetri	77(84.6)	14(15.4)	1.688	.254
Janajat/Aadibasi/Dalit	134(77.9)	38(22.1)		
Residence				
Urban	137(81.5)	31(18.5)	.510	.520
Rural	74(77.9)	21(22.1)		
Marital status				
Married	162(81.8)	36(18.2)	1.277	.283
Single	49(75.4)	16(24.6)		
Educational level(n=234)				
Below secondary level	73(88.0)	10(12.0)	4.272	.056
Secondary and above level	116(76.8)	35(23.2)		
Type of family				
Nuclear family	102(75.6)	33(24.4)	3.818	.063
Joint family	109(85.2)	19(14.8)		
Past Experience				
Yes	24(72.7)	9(27.3)	1.338	.349
No	187(81.3)	43(18.7)		
Social support received				
Yes	129(88.4)	17(11.6)	13.668	**<.001**
No	82(70.1)	35(29.9)		
Health problem				
Yes	69(71.9)	27(18.1)	6.650	**.011**
No	142(85.0)	25(15.0)		

Table 4: Association between Respondents' Depression Status and Socio-demographic Variables (n=263)

Variables	No depression No. (%)	Minimal to mild depression No. (%)	Moderate to severe depression No. (%)	χ^2 value	*p*-value
Age of the respondents					
18-39	16(11.9)	95(70.9)	23(17.2)	.608	.752
40-55	12(9.3)	92(71.3)	25(19.4)		
Sex					
Female	14(8.8)	108(67.5)	38(23.8)	8.895	**.011**
Male	14(13.6)	79(76.7)	10(9.7)		
Ethnicity					
Brahmin/chhetri	18(19.8)	61(67.0)	12(13.2)	13.183	**.001**
Janajati/Aadibasi/Dalit	10(5.8)	126(73.3)	36(20.9)		
Marital status					
Married	20(10.1)	146(73.7)	32(16.2)	2.922	.230
Single	8(12.3)	41(63.1)	16(24.6)		
Educational level(n=234)					
Below secondary level	13(15.7)	62(74.7)	8(9.6)	7.164	**.027**
Secondary and above level	14(9.3)	103(68.2)	34(22.5)		
Type of family					
Nuclear family	17(12.6)	88(65.2)	30(22.2)	4.750	.096
Joint family	11(8.6)	99(77.3)	18(14.1)		
Past Experience					
Yes	5(15.2)	20(60.6)	8(24.2)	2.046	.301 *
No	23(10)	167(72.6)	40(17.4)		
Social support received					
Yes	22(15.1)	113(77.4)	11(7.5)	28.509	**.001**
No	6(5.1)	74(63.2)	37(31.6)		
Health problems of caregivers					
Yes	4(4.2)	68(70.8)	24(25.0)	9.737	**.007**
No	24(14.4)	119(71.3)	24(14.4)		

*P-value significant at <0.05 level, *****-Fisher's Exact Test*

Table 3 and 4 shows the association between respondents' anxiety and depression levels with sociodemographic characteristics. There was a significant association between anxiety and sex (p=<.001), social support (*p*=.000), and health problems (*p*=.011) of the respondents. At the same time, there was a strong association between depression and sex (*p*=.011), ethnicity *(p*=.001), social support (*p*=.001), and health problems of caregivers (*p*=.007) of the respondents.

Table 5: Relationship between Anxiety and Depression

Variables	Depression	
	Correlation Coefficient(*r*)	*p*-value
Anxiety	0.849	<.001

Test: Spearman's rank correlation coefficient

Table 5 illustrates the relationship between anxiety and depression. There was strong positive correlation between depression and anxiety with correlation coefficient 0.849 and $p<.001$.

DISCUSSION

In the present study, the presence of anxiety symptoms according to Generalized Anxiety Disorder (GAD-7 cutoff point 10) was 19.8%. The finding was supported by the study conducted in Pakistan where prevalence of anxiety was 12.7% among caregivers of mentally ill patients.[8] This result differs from that of a related study carried out in Pakistan, where it was revealed that more caregivers of mental patients (40.6%) had clinically significant levels of anxiety and depression.[6] The present finding was **lower** than the findings of another similar study conducted in Ethiopia, where the prevalence of anxiety and depression was found to be 56.7%.[13] Similarly, the present finding was **lower** than the finding of another similar study was conducted in Brazil where the prevalence of anxiety was 32.5%.[4] A study conducted in New Delhi, India had higher prevalence of anxiety (76%) than the finding of the present study.[14] The difference in findings might be because of difference in setting, instrumentation, ethnicity and education level of respondents.

In this study, the presence of depression symptoms according to PHQ-9 (cut of point 10) was 18.2%. This finding was supported by the study conducted in Pakistan where prevalence of depression was 18.3% among caregivers of mentally ill patients.[8] This finding supported by another study conducted in Southwest, Ethiopia, where prevalence of depression among caregivers of mentally ill patient was 19%.[3] The present finding was lower than the similar study conducted in India, which depicted 47.5% caregivers of psychiatric patients had depression.[7] Similarly, the present finding was lower than the similar study conducted in Brazil where the prevalence of depression was 40%.[4] The difference in findings might be because of difference in setting, instrumentation, data collection time/period, understanding level of caregivers and the respondents might have been treated earlier than the study time.

A correlation between respondents' stress levels and sex ($p=.011$), social support ($p=.001$), health condition ($p=.011$), and patient diagnosis ($p=0.04$) was discovered in the present study. It was found that female respondents were more likely to have symptoms of anxiety ($p=.011$), in comparison to male respondents. A study among caregivers of mentally ill patients at Mental Hospital, Lalitpur found a similar result, where female respondents were more likely to suffer from anxiety and depression than male respondents.[12] This gap might be result from the study participants' gender-related variations in characteristics and differences in emotional state of male and female.

The present study also found that association between the respondents' depression level and sex ($p=.011$), ethnicity ($p=.001$), education level ($p=.027$), social support ($p=<.001$), health problems ($p=.007$) and perceived benefit of treatment ($p=.013$). In this study, it was found that female respondents were more likely to have symptoms of depression ($p=.011$) in comparison to male respondents. A study of caregivers of mentally ill patients at Mental Hospital, Lalitpur revealed a similar finding, with female respondents more likely to experience depression than male respondents.[12] Similarly, in Southwest Ethiopia, a study of primary caregivers of patients with serious mental illness also found that female respondents had higher rates of depression than male respondents.[3] This gap also might be result from the study participants' gender-related variations in characteristics and differences in emotional state of male and female.

In the current study, it was revealed that respondents who had reported receiving

social support were less likely to experience anxiety (*p*=.001) and depression (*p*=.001) than respondents who did not have reported receiving such support. Similar finding was present in a study was conducted in Ethiopia which has reported that the respondents who had social support were less likely to have anxiety and depression.[13]

The current study shows that the respondents who had health problems were more likely to have anxiety (*p*=.011) and depression (*p*=.007) comparison to the respondents who did not have health problems. The finding supported by the study was done in Pakistan which showed that the caregivers, who had health problems, had more anxiety and depression compared to who did not have health problems.[7]

According to the results of the current study, respondents who indicated they had received social support were less likely than those who did not have to report such support to experience anxiety or depression (*p*=.001).[9] It was also revealed that there was significant association of education level (*p*=.027) to the respondents' depression level. Higher anxiety and depressive symptoms were associated with lower educational attainment. A similar study done in Portugal discovered that females had greater rates of anxiety and depression (*p*=0.05). Participants with lower levels of education experienced greater levels of anxiety than those with higher levels of education (*p*=.001).[1]

This study demonstrated a significant correlation between caregiver anxiety symptoms and patient diagnoses (*p*=.040) was found that mild to moderate anxiety is more common among the caregivers of mood disorder and anxiety disorder, and moderate to severe anxiety is more common among the caregivers of the psychotic disorder and substance abuse. Similar finding was presented by the study done by Imtiaz et al., in 2021 from Pakistan where there was significant association between depression and types of psychiatric illness of the patient *(p*=0.023).[7]

Among the most common psychiatric illnesses are anxiety and depressive disorders. These two conditions are highly comorbid and are collectively referred to as internalizing disorders. In this study there was a strong correlation (*p*=0.849) between anxiety and depression and significantly associated (*p*=<0.001) with each other. Similar finding was presented on the study conducted in Singapore on relationship of anxiety and depression among smokers. Anxiety symptoms had positive correlation with depressive symptoms (β = 0.22), (*p*=< 0.001).[5] The results of a similar study carried out in Brazil, which used Spearman's rank correlation coefficient test to analyze the relationship between anxiety and depression, revealed that high anxiety indexes were related to low levels of depression. In other words, higher anxiety rates were linked to higher depression rates.[4]

CONCLUSION

Most caregivers of patients with mental illness had minimal anxiety and mild depression. Anxiety is founded to be associated with sex, perceived social support and caregivers' health status. Similarly, depression is associated with sex, ethnicity, education level, social support, and health problems of caregivers. There is a strong relationship between anxiety and depression among caregivers.

It is recommended to provide routine health screening, monitor their physical and mental well-being and provide regular psychological counseling. Community-based programs and support groups should be established to strengthen social connections and reduce isolation.

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