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Prevalence and Associated Factors of Depression among Perimenopausal Women of Tokha Municipality, Kathmandu

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ABSTRACT

Introduction

Depression is common among all population but even more in women going through menopause. It is due to hormonal changes during that period paired with certain behavioral as well as biological factors and even certain life events that can have devastating effects on the person. The objective of this research is to find the prevalence and associated factor of perimenopausal depression along with factors associated with it.

Methods

A Cross sectional descriptive study was conducted in Ward no. 10 and 11 of Tokha Municipality among 205 perimenopausal women. Permission was taken from Research department of National Open College also from the ward offices of Tokha Municipality, Kathmandu. The collected data was entered in Microsoft excel and analyzed in SPSS version 20.

Results

The prevalence of depression among perimenopausal women was more than one-third (39.2%), 28.7% of respondents having mild depression, 8.3% having moderate depression, 1.1% having moderately severe and 1.1% having severe depression. Depression was found to have significant association with loss of family members or peers and help seeking intention of the respondents.

Conclusions

The study identified prevalence of depression among perimenopausal women. Loss of closed ones and help seeking intentions were seen to be associated with depression during perimenopause.

Keywords: perimenopause; depression; help seeking intention; factors.

INTRODUCTION

Menopause, the cessation of menstruation, typically occurs after 45 when ovaries reduce estrogen and progesterone production. Preceding menopause, during perimenopause, symptoms like depression may arise due to hormonal decline.[1] Depression, affecting over 264 million globally, disproportionately impacts women. Hormonal shifts during menopause can lower serotonin levels, contributing to mood changes.[2] The increased prevalence of depressive symptoms during perimenopause

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is influenced by both hormonal shifts and life events.[3] Despite psychological challenges, 89% of perimenopausal women refrain from consulting physicians.[4] In Nepalese society, societal taboos around menstruation and menopause may hinder women from seeking help. This study was conducted in Tokha municipality, Kathmandu, addresses this knowledge gap, exploring depression prevalence during menopause. Understanding women's knowledge, attitudes, and practices towards perimenopausal depression aims to raise awareness and prompt action in this under-researched area, vital for reproductive health.

METHODS

A cross sectional study design study was conducted in Tokha Municipality, Kathmandu, Nepal among women aged 40-54 years. Two wards, Tokha 10 and Tokha 11, were conveniently selected from total of 11 wards of Tokha municipality, Kathmandu. Prevalence of depression among perimenopausal women was found to be 56.6% i.e., 0.566.[6] by taking this as a prevalence with 95% CI and 7% margin of error. The sample size for this study was calculated by using formula.

$$n_o = \frac{z^2 * p * q}{e^2}$$

$$= \frac{1.9^{\wedge 2} * 0.566 * 0.434}{0.07^2}$$

$$= \frac{3.8416 * 0.566 * 0.434}{0.0050}$$

$$= \frac{0.943}{0.0055}$$

$$= 171$$

By adding 20% non-responsive rate to the sample size we get, n = 171 + 20% of 171=171 + 34.2=205. The perimenopausal women then selected using non probability purposive sampling as well as snowball sampling technique from the two wards. Women aged 40-54 who were going through perimenopause were selected purposively and snowball sampling was then used to further identify and recruit the required study subjects. Structured questionnaire were provided to the respondents for the data collection. The tool was prepared both in Nepali and English. The tool was prepared based on information in literature about perimenopausal depression, its associated risk factors and help seeking intention towards it. Socio-demographic characteristics used in this research were age, marital status, educational background, etc. Perimenopausal depression contained questions related to presence of depressive symptoms among the respondents. This section included a PHQ-9 (Patient Health Questionnaire-9) as a tool for measuring depression.[7] The PHQ-9 is the depression module, which scores each of the nine DSM-IV criteria as "0" (not at all) to "3" (nearly every day). The total score from the questionnaire will determine the severity of depression with 0-4 as none, 5-9 as mild depression, 10-14 as moderate, 15-19 as moderately severe and 20-27 as severe depression. The tools were translated from English to Nepali under close supervision from the supervisor for the ease of understanding of the respondents. Cronbach's alpha for both the scale was >0.8 (0.81 for PHQ-9(8) and 0.85 for GHSQ.[9] Women of 40-54 years of age were included in the study. While Women having regular menstruation, Post-menopausal women, Women who had gone through hysterectomy. Approved consent was taken from each of the respondents. Permission was taken from Research department of National Open College also from the ward offices of Tokha Municipality, Kathmandu. The collected data was entered in Microsoft excel and analyzed in SPSS version 22. Descriptive statistics was used to measure prevalence. Chi-square test was used to measure the associations. Tables as well as figures were used for presentation of the facts. Microsoft office 2007 was used for presentation.

RESULTS

A total of 181 Perimenopausal women of age 40

to 54 from Tokha municipality were taken as the participant of the study. Majority (50.8%) of the women belonged to 40-45 years age group while the rest 49.2% belonged to 46-54 age group 3.3% showcasing the mean age of 46.32±4.554. A high percentage of 69.1% respondents were from ward Number 10 while 30.9% were from ward number 11. It also shows that majority of 59.1% of females belonged to Janajati ethnic group followed by Brahmin at 23.2% and Chhetri at 16.6% with very low percentage 1.1% of females were from the Dalit ethnic group. Maximum respondents i.e., 33.1% had Graduate level or above educational qualification followed by higher secondary level at 30.4%, secondary level at 25%, primary level at 11% and 3.9% had no education (Table 1).

Table 1. Distribution of respondents according to their socio demographic characteristics. (n=181)

Variables	Frequency (%)
Age	
46-54	89(49.2)
40-45	92(50.8)
Mean±SD = 46.32±4.554	
Address	
Tokha 10	125(69.1)
Tokha 11	56(30.9)
Ethnicity	
Brahmin	42(23.2)
Chhetri	30(16.6)
Janajati	107(59.1)
Dalit	2(1.1)
Education	
None	7(3.9)
Primary level	20(11)
Secondary level	39(21.5)
Higher secondary level	55(30.4)
Graduate and above	60(33.1)
Marital status	
Unmarried	5(2.8)
Married	171(94.5)
Divorced/Separated	2(1.1)
Widow	3(1.7)
Family type	
Neutral	115(63.5)
Joint	66(36.5)
Employment status	
Employed	58(32)
Housewife	56(31)
Self-business	67(37)
Monthly family income	
Less than 1,10,000	120(66.3)
1,10,000 and above	61(33.7)
Mean±SD=113359.12±101889.691	

The table also reveals that most of the respondents were married comprising of 94.5% of the total sample, with 2.8% of the respondents being unmarried, 1.7% widowed and 1.1 of them being either divorced or separated. 63.5% of the respondent lived in a neutral family while 36.5% lived in a joint family. The table above shows that, out of total 181 respondents, majority (60.8%) were normal or showed no signs of depression, followed by 28.7% of respondents having mild depression and 8.3% having moderate depression. Very less number of respondents showed moderately severe and severe depression both at 1.1% (Table 2).

Table 2.Depression among respondents.

Prevalence level	Number (%)
None	110(60.8)
Mild	52(28.7)
Moderate	15(8.3)
Moderately severe	2(1.1)
Severe	2(1.1)

The above table shows that majority of 65.2% of the respondents had low physical activity, 21.5% had high level and 3.3% did not indulge in any physical activity. The majority of 95.6% of respondents did not smoke cigarettes while 4.4% did. Most of the respondents (50.8%) did not consume alcohol while 49.2% did.

One third of the respondents (32.6%) suffered from one or more chronic diseases among them High blood pressure (18.2%) was in highest occurrence and least to that of the heart disease

Table 3. Behavioral characteristics of the respondents. (n=181)	
Characteristics	**Frequency(%)**
Level of physical activity	
High	39(21.5)
Low	118(65.2)
Never	24(13.3)
Smoking Cigarette	
Yes	8(4.4)
No	173(95.6)
Drinking alcohol	
Yes	89(49.2)
No	92(50.8)

Table 4.Biological and psychosocial characteristics of respondents	
Characteristics	Number (%)
Presence of chronic disease	
Yes	59(32.6)
No	122(67.4)
If yes, existing diseases (Multiple response)	
High blood pressure	33(18.2)
Thyroid	12(6.6)
Diabetes	11(6.1)
Cholesterol	3(1.7)
Uric acid	2(1.1)
Cancer	2(1.1)
Migraine	2(1.1)
Heart disease	1(0.6)
Liver cirrhosis	1(0.6)
History of depression	
Yes	7(3.9)
Relationship issues	
Yes	6(3.3)
Loss of family members/peers	
Yes	43(23.8)

and liver cirrhosis both at 0.6%, while the rest 32.6% of respondents did not suffer from any chronic disease. It also shows that only 3.9% of the respondents had a history of depression, 3.3% faced problem in relationship with their partner and 23.8% faced loss of family members recently (Table 4).

Chi square test was used to find association between prevalence of depression and several characteristics of the respondents (Table 4). The above table reveals that there was a significant association of loss of family members with prevalence of depression (p=0.028) (Table 5). Perimenopausal females who had recently faced death of family members or closed ones were 2.156 times more prone to have depression (OR=2.156). Out of the total respondents, 71 of them had depression out of which 32.4% had faced loss of family members. Out of the rest of 110 respondents who showed no signs of depression, 18.2% had faced with loss of family members or closed ones. In contrast, other psychosocial factors namely problems in relationship and history of depression had no significant association with prevalence of depression as shown in the table. Similarly, the table also shows that there was significant association between help seeking intention of the respondents with the prevalence of depression (p=0.042, OR=4.12). The respondent that were likely to seek help for their personal/emotional problems as well as suicidal thoughts were 0.537 times less prone to having depression. 59.1% of the respondents not showing any signs of depression were likely to seek help while 40% of the depressed respondents were unlikely to seek help for their mental problems. The above table also shows that prevalence of depression had no significant association with sociodemographic characteristics, biological as well as behavioral characteristics of the respondents.

DISCUSSION

The current study reveals prevalence of depression along with its associated factors among perimenopausal females of Ward number 10 and 11 of Tokha Municipality, Kathmandu. The study revealed that average age of the respondents was 46, the result being same to that of a previous study conducted in Butwal Sub-Metropolitan City of Rupandehi district where the mean age of the respondents was 46 as well. The same research had 92.5% of respondents

Table 4. Association between depression and independent variables.				
Variables	**Depression**		**Chi square (χ2)**	**p-value**
	No	**Yes**		
Age				
<46	57(51.8%)	35(49.3%)	0.11	0.74
>46	53(59.55%)	36(40.45%)		
Level of education				
Secondary level and below	22(23.2%)	17(28.8%)	0.362	0.547
Above secondary level	73(76.8%)	42(71.2%)		
Marital status				
Married	103(93.6%)	68(95.8%)	0.84	0.742
Unmarried/separated/widowed	7(6.4%)	3(4.2%)		
Family type				
Neutral	67(60.9%)	48(67.6%)	0.835	0.361
Joint	43(39.1%)	23(32.4%)		
Employment status				
Employed/Business	77(70%)	48(67.6%)	0.116	0.734
Unemployed/Retired	33(30%)	23(32.4%)		
Monthly family income				
<100000	72(65.5%)	48(67.6%)	0.089	0.765
>110000	38(34.5%)	23(32.4%)		
Physical activity				
Yes	96(87.3%)	61(85.9%)	0.069	0.793
No	14(12.7%)	10(14.1%)		
Smoking				
Yes	3(2.7%)	5(7%)	2.25	0.266
No	107(97.3%)	66(93%)		
Alcohol consumption				
Yes	65(59.1%)	34(47.9%)	2.186	0.139
No	45(40.1%)	37(52.1%)		
Presence of chronic disease				
Yes	34(30.9%)	25(35.2%)	0.363	0.547
No	76(69.1%)	46(64.8%)		
History of depression				
Yes	2(1.8%)	5(7%)	1.25	0.075
No	108(98.2%)	66(93%)		
Relationship issues				
Yes	3(2.7%)	3(4.2%)	1.68	0.681
No	107(97.3%)	68(95.8%)		

who were married similar to my study with 94.5% of married respondents, 2.8% unmarried, 1.7 widowed and 1.1 divorced or separated while another study conducted in China had 96.8% of the perimenopausal women married while 3.2% were single.[6] The educational status of the respondents of this study showed that only 3.9% of the total respondents were illiterate while the rest 96.1% were literate with majority of 33.1% having university education, followed by 30.4%

Table 5. Association between depression and independent variables (loss of family and help seeking intension)					
Variables	**Depression**		**Chi square**	**Odds ratio (95% CI)**	**p-value**
	No	**Yes**			
Loss of family members					
Yes	20(18.2%)	23(32.4%)	4.812	2.156	0.028*
No	90(81.8%)	48(67.6%)		(1.077-4.317)	
Help seeking intention					
Unlikely to seek help	45(40.9%)	40(56.3%)	4.12	0.537	0.042*
Likely to seek help	65(59.1%)	31(43.7%)		(0.293-0.981)	

having higher secondary level education, 21.5% having secondary and least 11% having primary level of education. This varied with a similar study conducted in Lublin where the largest number of the respondents had secondary school education 55.60%, while 24.63% had university education, and 19.78% elementary/ elementary vocational level education.[10] Similar study conducted in Syangja district, Nepal reported majority of 51.4% of respondents working as housewives, 25% involved in business, 22.1% service holders and 1.5% involved in farming which contrasted with my study as majority of 37% of respondents in my study were involved in self business, followed by 32% employed and least 31% working as housewives.[11] A PHQ-9 scale was used to measure the level of depression in my study in contrast the study conducted in Rupandehi district used Hamilton Depression Rating Scale as their tool. The PHQ-9 scale revealed that among 181 participants in the study, the majority 60.8% showed no signs of depression, 28.7% had mild depression, 8.3% had moderate depression, 1.1% had moderately severe depression and 1.1% had severe depression. In comparison, the Depression level was higher in the study conducted in Rupandehi with 56.6% showing depression symptoms among which 16.2% had mild depression, 15% had moderate depression, 14.4% had severe and 11% had very severe depression while 43.4% having shown no symptoms of depression.[6] However, in the study conducted in Lublin, majority of 55.6% were normal or showed no signs of depression similar to my study while 30.97% had mild depression, 7.84% moderate and 5.6% had severe depression.[10] This study showed no significant association of depression with the socio demographic characteristics of the respondents. However, in a similar study conducted in China, age (p=0.016) and family income (p=0.004) were significantly associated with depression.[12] The study conducted in Lublin showed a relationship between the level of depression among perimenopausal women and education, this level being higher in the group of women who had elementary/ elementary vocational and secondary school education, compared to those who possessed a university education.[10] A significant association of depression with age (p=0.035) and family type (p=0.003) of the perimenopausal females was seen in the study of Rupandehi.[6] Depression was seen to have no relationship with behavioral factors such as physical activities, smoking and alcohol consumption in my study. This finding was in line with previous study outcome which also showed no significant association of behavioral factors with depression. Presence of diseases also had no significant association with depression, the result being similar to my study.[6] Similar study conducted in Lublin also showed no significant association between depression and presence of chronic diseases. It also had similar findings to my study regarding presence of chronic diseases among the perimenopausal

females 36.8% living with one or more chronic diseases in line with findings of my study where 32.6% of the respondents had one or more chronic diseases.[10] This study showed an association between loss of family members and depression (p=0.028%). The Rupandehi study too had similar results with significant relationship (p<0.001) between depression and loss of family members/ peers. It also depicted that history of depression (p<0.001) and relationship issues were related to depression which opposed the findings of my study which showed that there were no significant relationship of depression with either of them.[6] A study on rural Chinese adults revealed that 79.8% of the participants would seek help for their mental health problems. While in my study 53.03% were likely to seek help from different sources for their mental health problems. The study also showed that depression was significantly associated with the help seeking intention (p<0.01) garnering similar results to my study (p=0.042).[13]

CONCLUSIONS

This study in Tokha Municipality, Kathmandu, focused on perimenopausal women aged 40-54, revealing a 46-year average respondent age. More than one-third experienced depression, with over half expressing an inclination to seek help, favoring partners and doctors. The findings underscore the need for increased awareness about mental health support. Loss of family members was associated with depression, emphasizing vulnerability post-loss. The study highlights the urgency of promoting awareness and interventions for seeking help, especially among those less likely to do so.

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