

PREVALENCE OF DEPRESSION AMONG MENOPAUSAL WOMEN IN A RURAL COMMUNITY OF MORANG, NEPAL

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ABSTRACT

There is a great diversity in nature of menopausal symptoms and frequencies across countries, even in the same cultures. These symptoms could be unpleasant and disabling leading to depression in some menopausal women. Hence, this study was conducted to determine the prevalence of depression among menopausal women and to assess the association of menopausal symptoms with the socio-demographic variables. A cross sectional study was conducted in the Tankisinuwari area of Morang District. Total of 355 menopausal women were enrolled using systematic random sampling. The women were interviewed using semi-structured questionnaire. Depression was assessed according to Center for Epidemiological Studies Depression Scale (CES-D). Data analysis was done using SPSS 16 version. The majority of women 226 (63.7%) were illiterate and 226 (63.7%) of them were living below the poverty line. Mean age of menopause and (SD) was 46.81± 4.64 years. Prevalence of depression was found to be 31.5% (n=112). Among women belonging to Dalit caste, menopausal symptoms were more common as compared to other ethnic groups. Menopausal symptoms were experienced most frequently by women living below poverty line. The menopausal symptoms which was found to be significantly associated with literate women was complaints of irritability (p=0.023) whereas with illiterate women were sleep problem (p=0.045), decrease in sexual desire (p=0.012) and nocturia (p=0.041). Depression was significantly associated with low economic condition (p=0.011). As there is increase in the life expectancy and population of menopausal women in Nepal, large efforts are required to educate and make these women aware of menopausal symptoms. It is also important for health-care providers to understand the differences between cultures, so that appropriate advice can be given and treatment can be tailored according to the needs of the community, irrespective of the country.

KEYWORDS

Menopause, menopausal symptoms, depression, socio-demographic characteristics

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INTRODUCTION

As anthropologist Dona Lee Davis says: “*menopause is most remarkable for being unremarkable*”. Menopause is a term used to describe the permanent cessation of the primary functions of the human ovaries: the ripening and release of ova and the release of hormones that cause both the creation of the uterine lining and the subsequent shedding of the uterine lining (also known as the menses or the period). Menopause signals the end of the fertile phase of a woman’s life. This transition is normally not sudden or abrupt, tends to occur over a period of years, and is a natural consequence of aging. However, for some women, the accompanying signs and effects that can occur during the menopause transition years can significantly disrupt their daily activities and sense of well-being. The women experience menopause usually during the age of 46-51 years.¹

According to one estimate, in 1990 there were around 467 million women aged 50 years and above, all over the world. With improved life expectancy, it is expected that the number of post-menopausal women will increase in the near future and the rate of this increase will be substantially faster in the developing world than in the industrialized world. It was projected that between 1990 to 2030 in the developing regions, average annual growth rate of the number of women aged over 50 will be 2-3.5%.^{2,3} The marked decline in ovarian production of estrogen, with the onset of menopause, induces some physiological changes, which are reflected by physical and psychological symptoms experienced by most women at this stage of life.^{4,5} These symptoms may be grouped as vasomotor (VMS), somatic and psychological. These symptoms are self-limiting and not life threatening. Nevertheless, they could be unpleasant and sometimes disabling.⁶ The timing of menopause and the experience of changes in wellbeing associated with it, generally called menopausal symptoms, vary greatly between individuals and between populations.^{7,8} Study of Women’s Health Across the Nation (SWAN), a multi-centre, multi-ethnic, community-based cohort study among menopausal women, found the median age of women at natural menopause to be 51.4 years. Current smoking, lower educational attainment, being separated/ widowed/ divorced, non employment, and history of heart disease or prior gynaecological surgery were all independently associated with earlier natural menopause, while parity, prior use

of oral contraceptives, and Japanese race/ ethnicity were associated with later age at natural menopause.⁹

Of the 5 racial/ethnic groups studied in SWAN, the highest rates of VMS were reported among Central American women and lowest rates among Chinese and Japanese women. This difference may be explained by genetic differences, different ways of identifying symptoms, different lifestyles and dietary habits. Cultural variations in how women experience, interpret, label, and report VMS may also play a role in observed racial/ethnic differences in VMS. This could be also due to differences in the endocrine changes during midlife between the different ethnic groups. Chinese and Japanese women were found to have lower estradiol levels across the midlife transition compared with Caucasian and African American women.¹⁰ Further, women who are in lower socioeconomic positions, with lower educational attainment and lower income are more likely to report VMS relative to their higher socioeconomic position counterparts.¹¹ Lower socioeconomic position is associated with smoking, higher BMI, higher perceived stress, and higher negative affect,^{12,13} and is concentrated among certain minority racial/ethnic groups.¹⁴ Depression is more likely to be a consequence of distressing menopausal symptoms than a cause of them. The classical social and contextual determinants of depression, such as unemployment, socioeconomic adversity, negative life events, lack of social support, loss of partner or lack of a confiding relationship with a partner, continue to be a powerful influence during menopause. Women living in households where the income was earned by manual labour, or who were themselves on a low income, had higher symptom scores than those from non-manual-labour households or with higher income.

Higher social support, including emotional support, and access to help in a crisis were associated with low symptom.¹⁵ Socio-cultural factors can also alter women’s attitude and experience of menopausal symptoms. These symptoms are found to be less common in societies where menopause is viewed as positive rather than negative event.^{16,17} Hence, this study aimed to determine the prevalence of depression among the menopausal women and to assess the association of menopausal symptoms with the socio-demographic variables.

MATERIALS AND METHODS

A cross-sectional study was conducted at Tankisinuwari area which is the part of Budhiganga Rural Municipality located at Morang District from 1st July 2011 to 30th June 2012. In this area, multi-ethnic population are residing with diverse social and cultural values, beliefs and lifestyles. Sample size was calculated using the formula, Sample Size (n) = $4pq/d^2$, where prevalence (p) was taken as 57%¹⁸ and allowable error (d) was taken as 10% of p. Considering 10% as the possible non respondents, the total sample size calculated was 355. Using systematic random technique, 355 menopausal women were selected. All the menopausal women whose menstruation had stopped either due to natural, surgical or medical cause and whose duration since menopause was within 10 years were included in the study. Data was collected by direct interview technique using pretested semi-structured questionnaire. Depression was assessed according to CES-D scale.¹⁹ Depression was defined as any person who on interviewing has a value higher than or equal to 16 on CES-D scale. If score is less than 16, person is normal, if score is 16 to 24, the person has mild to moderate depression and if the score is more than 24 then the person has moderate to severe depression. Classic/vasomotor symptoms comprised of hot flushes, night sweats, sleep problems, dry/sore vagina and sexual desire decreased. Somatic symptoms comprised of aching /painful joints, dizziness, headaches, sore breasts, nocturia and palpitations. Psychological symptoms comprised of more irritable, trouble with memory and depression. Statistical analysis of the collected data was carried out using SPSS version 16.0. Frequency distribution of socio-demographic data, menopausal symptoms and depression were calculated. Chi-square test was used to study association between categorical variables. The ethical clearance was taken from the Institutional Ethical Review Board of B.P. Koirala Institute of Health Sciences (BPKIHS). Verbal consent was taken from each menopausal woman prior to interview. Respondents were assured about the anonymity and confidentiality of the information provided by them.

RESULTS

Out of 355 menopausal women, 111 (31.3%) were in the age group of less than 50 years and similar percentage 113 (31.8%) were in the age group of 55 to 59 years. Majority of the participants belonged to *Brahmin-Chhetri* caste 122 (34.4%). More than two thirds of respondents

Table 1: Socio-demographic characteristics of the study participants (n=355)

Characteristics	n	%
Age (years)		
<50 years	111	31.3
50 - 54 years	62	17.5
55 - 59 years	113	31.8
≥60 years	69	19.4
Mean age ± SD = 53.35 ± 5.43		
Ethnicity		
<i>Brahmin-Chhetri</i>	122	34.4
<i>Adivasi-Janajati</i>	108	30.4
<i>Dalit</i>	62	17.5
<i>Terai</i>	63	17.7
Literacy Status		
Illiterate	226	63.7
Literate	129	36.3
Among Literates (n=129)		
Informal	54	15.2
Formal	75	21.1
Education Level (n=75)		
1 - 9	44	12.4
≥ 10	31	8.7
Per capita income/person/day		
< 1.25 (\$)	226	63.7
≥1.25 (\$)	129	36.3
PCI ± SD = 30000 ± 42632		
Marital Status		
Married	264	74.4
Widowed/separated	91	25.6
Age at marriage (years)		
<18	295	83.1
≥18	58	16.3
Mean age ± SD = 15.58 ± 3.70		
Parity		
<3	118	33.2
3 - 5	114	32.1
≥ 6	115	32.4
Age at menopause (years)		
< 45	134	37.7
45 - 49	97	27.3
≥ 50	124	34.9
Mean age ± SD = 46.81 ± 4.64		

were *Hindu* 334 (94.1%). Regarding education, 226 (63.7%) of respondents were illiterate and only 129 (36.3%) were literate. Among literates, 75 (21.1%) of them had formal education and 54 (15.2%) had informal education. Most of them 162 (45.6%) were housewives, 131 (36.9%)

Table 2: Prevalence of depression among the menopausal women as per CES-D score

Characteristics	n (355)	%
Depression		
Yes (≥ 16)	112	31.5
No (> 16)	243	68.5
Depressive category		
Normal (score < 16)	261	73.5
Mild to moderate (score 16- 24)	73	20.6
Moderate to severe (Score > 24)	21	5.9

farmers and 62 (17.5%) were shopkeepers, teachers, factory workers, etc. Most of the respondents 226 (63.7%) were living below the poverty line with median per capita income of Rs.30,000. Majority of the subjects 277 (78%) had menarche after the age of 13 years. Majority of women were married 264 (74.4%) and 295 (83.1%) of them were married before the age of 18 years. Just under half of the respondents 170 (47.9%) gave birth to their first child between the age of 14 to 19 years. About a third of women 118 (33.2%) had a parity of less than three in number and similar proportions of women 114 (32.1%) and 115 (32.4%) had parity of three to

Table 3: Menopausal symptoms among respondents with respect to ethnic group (n = 355)

Menopausal Symptoms	Ethnic group n (%)					P value
		Brahmin-Chhetri	Adivasi-Janajati	Dalit	Terai	
Hot flushes	Yes	40 (32.8)	41 (38.0)	27 (43.5)	19 (30.2)	0.363
	No	82 (67.2)	67 (62.0)	35 (56.5)	44 (69.8)	
Night sweats	Yes	36 (29.5)	29 (26.9)	22 (35.5)	15 (23.8)	0.503
	No	86 (70.5)	79 (73.1)	40 (64.5)	48 (76.2)	
Sleep problems	Yes	37 (30.3)	41 (38.0)	21 (33.9)	21 (33.3)	0.682
	No	85 (69.7)	67 (62.0)	41 (66.1)	42 (66.7)	
Dry/sore vagina	Yes	15 (12.3)	8 (7.4)	6 (9.7)	5 (7.9)	0.610
	No	107 (87.7)	100 (92.6)	56 (90.3)	58 (92.1)	
Sexual desire decreased	Yes	82 (67.2)	62 (57.4)	34 (54.8)	37 (58.7)	0.302
	No	40 (32.8)	46 (42.6)	28 (45.2)	26 (41.3)	
Aching/painful Joints	Yes	82 (67.2)	72 (66.7)	45 (72.6)	38 (60.3)	0.545
	No	40 (32.8)	36 (33.3)	17 (27.4)	25 (39.7)	
Dizziness	Yes	64 (52.5)	60 (55.6)	41 (66.1)	37 (58.7)	0.348
	No	58 (47.5)	48 (44.4)	21 (33.9)	26 (41.3)	
Headaches	Yes	74 (60.7)	59 (54.6)	46 (74.2)	44 (69.8)	*0.044
	No	48 (39.3)	49 (45.4)	16 (25.8)	19 (30.2)	
Sore breasts	Yes	13 (10.7)	8 (7.4)	6 (9.7)	1 (1.6)	0.169
	No	109 (89.3)	100 (92.6)	56 (90.3)	62 (98.4)	
Nocturia	Yes	24 (19.7)	20 (18.5)	17 (27.4)	12 (19.0)	0.530
	No	98 (80.3)	88 (81.5)	45 (72.6)	51 (81.0)	
Palpitations	Yes	60 (49.2)	48 (44.4)	32 (51.6)	29 (46.0)	0.797
	No	62 (50.8)	60 (55.6)	30 (48.4)	34 (54.0)	
More irritable	Yes	54 (44.3)	8 (53.7)	32 (51.6)	39 (61.9)	0.139
	No	68 (55.7)	50 (46.3)	30 (48.4)	24 (38.1)	
Trouble with memory	Yes	60 (49.2)	53 (49.1)	35 (56.5)	25 (39.7)	0.313
	No	62 (50.8)	55 (50.9)	27 (43.5)	38 (60.3)	

*Significant level Chi-square: $p < 0.05$

Table 4: Menopausal symptoms with respect to economic status (n = 355)

Menopausal Symptoms	Poverty line		P value
	Below poverty line n (%)	Above poverty line n (%)	
Hot flushes			
Yes	89 (39.4)	38 (29.5)	0.61
No	137 (60.6)	91 (70.5)	
Night sweats			
Yes	70 (31)	32 (24.8)	0.217
No	156 (69)	97 (75.2)	
Sleep problems			
Yes	81 (35.8)	39 (30.2)	0.283
No	145 (64.2)	90 (69.8)	
Dry/sore vagina			
Yes	22 (9.7)	12 (9.3)	0.894
No	204 (90.3)	117 (90.7)	
Sexual desire decreased			
Yes	138 (61.1)	77 (59.7)	0.799
No	88 (38.9)	52 (40.3)	
Aching/ painful joints			
Yes	147 (65.0)	90 (69.8)	0.3
No	79 (35.0)	39 (30.2)	
Dizziness			
Yes	141 (62.4)	61 (47.3)	*0.006
No	85 (37.6)	68 (52.7)	
Headache			
Yes	147 (65.0)	76 (58.9)	0.250
No	79 (35.0)	53 (41.1)	
Sore breast			
Yes	20 (8.8)	8 (6.2)	0.373
No	206 (91.2)	121 (93.8)	
Nocturia			
Yes	56 (24.8)	17 (13.2)	*0.009
No	170 (75.2)	112 (86.8)	
Palpitation			
Yes	116 (51.3)	53 (41.1)	0.063
No	110 (48.7)	76 (58.9)	
More irritable			
Yes	119 (52.7)	64 (49.6)	0.581
No	107 (47.3)	65 (50.4)	
Trouble with memory			
Yes	113 (50.0)	60 (46.5)	0.527
No	113 (50.0)	69 (53.5)	

five and more than five children respectively. Regarding age at menopause, 134 (37.7%) of them had attained their menopause before the age of 45 years with almost equal proportion 124 (34.9%) after the age of 50 years. Mean age of menopause was 46.81 ± 4.64 years. The

minimum age at menopause of respondents was 30 years and maximum was 58 years. Most of the women 196 (55.2%) had menopause for 7 to 10 years followed by 94 (26.5%) of them for 3 to 6 years and 65 (18.3%) of them for 1 to 2 years (Table 1).

Table 5: Menopausal symptoms with respect to literacy status (n = 355)

Menopausal Symptoms	Literacy status		P value
	Illiterate n (%)	Literate n (%)	
Hot flushes			
Yes	76 (33.6)	51 (39.5)	0.264
No	150 (66.4)	78 (60.5)	
Night sweats			
Yes	60 (26.5)	42 (32.6)	0.229
No	166 (73.5)	87 (67.4)	
Sleep problems			
Yes	85 (37.6)	35 (27.1)	*0.045
No	141 (62.4)	94 (72.9)	
Dry/sore vagina			
Yes	21 (9.3)	13 (10.1)	0.809
No	205 (90.7)	116 (89.9)	
Sexual desire decreased			
Yes	148 (65.5)	67 (51.9)	*0.012
No	78 (34.5)	62 (48.1)	
Aching/painful joints			
Yes	156 (69.0)	81 (62.8)	0.230
No	70 (31.0)	48 (37.2)	
Dizziness			
Yes	131 (58.0)	71 (55.0)	0.592
No	95 (42.0)	58 (45.0)	
Headache			
Yes	137 (60.6)	86 (66.7)	0.257
No	89 (39.4)	43 (33.3)	
Sore breast			
Yes	14 (6.2)	14 (10.9)	0.117
No	212 (93.8)	115 (89.1)	
Nocturia			
Yes	39 (17.3)	34 (26.4)	*0.041
No	187 (82.7)	95 (73.6)	
Palpitation			
Yes	113 (50.0)	56 (43.4)	0.232
No	113 (50.0)	73 (56.6)	
More irritable			
Yes	126 (55.8)	57 (44.2)	*0.036
No	100 (44.2)	72 (55.8)	
Trouble with memory			
Yes	119 (52.7)	54 (41.9)	0.05
No	107 (47.3)	75 (58.1)	

*Significant level Chi-square: $p < 0.05$

As shown in Table 2, the prevalence of depression, among menopausal women, was found to be 31.5%. Further classification based on the CES-D score showed, 73 (20.6%) of them were suffering from mild to moderate depression with 21 (5.9%) suffering from moderate to severe depression.

As revealed in Table 3, the menopausal symptoms were more common in *Dalit* caste group as compared to other ethnic groups. The frequent symptoms experienced by women belonging to *Dalit* caste were hot flushes 27 (43.5%), night sweats 22 (35.5%), aching/painful joints 45 (72.6%), dizziness 41 (66.1%), headache 46 (74.2%), palpitation 32 (51.6%), nocturia 17 (27.4%) and trouble with memory 35 (56.5%). There was a significant association between *Dalit* caste and headache (p=0.044). In *Brahmin-Chhetri* caste group, most common complaints were decreased sexual desire 82 (67.2%), dry/sore vagina 15 (12.3%) and sore breasts 13 (10.7%). Sleep problem 41 (38.0%) was most common complaint in *Adivasi-Janajati* caste and irritability 39 (61.9%) in *Terai* caste. According to duration of menopause, hot flushes, dry/sore vagina and dizziness were experienced more during early years of menopause (1-2 years) and decrease in sexual desire, increase in irritability and trouble with memory were experienced more during 7-10 years of menopause among the participants.

According to the table 4, menopausal women who were living below poverty line experienced all the menopausal symptoms more frequently compared to those who were living above poverty line except aching/ painful joints. A highly significant association was seen of low economic status with dizziness (p=0.006) and nocturia (p=0.009).

Women who were literate experienced more of hot flushes 51 (39.5%), night sweats 42 (32.6%), headache 86 (66.7%) and nocturia 34 (26.4%).

However, illiterate women experienced more of sleep problem 85 (37.6%), decreased sexual desire 148 (65.5%), painful joints 156 (69.0%), dizziness 131 (58.0%), palpitation 113 (50%), more irritability 126 (55.8%) and trouble with memory 119 (52.7%). There was a significant association of illiteracy status with sleep problems (p=0.045), decreased sexual desire (p=0.012) and irritability (p=0.036) and there was a significant association of the literacy status with the nocturia (p=0.041) (Table 5).

Table 6 revealed that depression was seen more among illiterate women 77 (34.1%). A highly significant association was found between low economic condition and depression (p= 0.011).

DISCUSSION

In our study, most of menopausal women 226 (63.7%) were illiterate and only 129 (36.3%) were literate. Among literates, 75 (21.1%) had formal education and 54 (15.2%) had informal education. Further, among those who had formal education, 44 (12.4%) had completed secondary level and only 31 (8.7%) had completed above secondary level. This finding was comparable to another study done in another part of Nepal where the women interviewed were mostly illiterates (468, 64.9%).²⁰ Similarly, in Sindh, the proportion of Pakistani women who receive no formal education was 2611 (85.3%) and only 39 (1.3%) of them had 12 years or >12 years of education.²¹ In this study, 162 (45.6%) of women were housewives, 131 (36.9%) were farmers and 62 (17.5%) of them were school teachers, shopkeepers etc. Similar findings were found in the study conducted in Gujarat where among a total of 147 women, the majority of the women were housewives (n=108, 73.5%), while few of them were laborer (n=37, 25.2 %).²² Most of the respondents were living below poverty line 226 (63.7%) and only 36.3% of them were living above poverty line

Table 6: Depression with respect to literacy status and economic status

Characteristics	Depression (n=355)		P value
	Present n (%)	Absent n (%)	
Literacy status			
Illiterate	77 (34.1)	149 (65.9)	0.176
Literate	35 (27.1)	94 (72.9)	
Poverty line			
Below poverty line	82 (36.3)	144 (63.7)	*0.011
Above poverty line	30 (23.3)	99 (76.7)	

*Significant level Chi-square: p <0.05

in this study. This finding was similar with the study conducted in Pakistan in which majority of the study population 1979 (64.6%) belonged to poor socio-economic status, while only 176 (5.7%) were from upper class.²¹ More than two-third of the women were married 264 (74.4%) and few of them 91 (25.6%) were widowed or separated. Mean age of marriage being 15.58 years. Similar findings were seen in the study done in Gujarat, majority of the women (n=118, 80.3%) were married and living with the partner while some were widow (n= 27, 18.4%) and the mean age of marriage was 17.8 years.²²

Among the study population, 134 (37.7%) had attained their menopause before the age of 45 years with almost equal proportion 124 (34.9%) after the age of 50 years. Mean age of menopause was 46.81 years. The mean age is comparable with the studies done in other rural parts of Nepal, in which median age at menopause was found to be 47 years²³ and 49.9 years.²⁰ The difference between these studies performed on Nepali women may be due to difference in sample size, study population and method of sampling. Similar to our findings, the mean age of natural menopause onset was 47.35 years in Iranian women.²⁴ In the study done in India, mean age of menopause was 41.6 years which was little earlier than in Nepal but the age at menopause among Japanese, Chinese, and Hawaiian women was little late, which was between 49 to 50 years²⁵ and 51.4 years in the SWAN study.⁹ Population in developed countries demonstrated comparatively later age at menopause than population in the developing countries. This might be due to genetic differences, different lifestyles and dietary habits. The prevalence of depression in the study population was 31.5%. Comparable finding was reported in Bangladeshi women with 37.3% depressive mood.²⁶ Similar findings were found in a cross-sectional study of women aged 45-54 years where almost one-third (29%) of women in the sample had CES-D scores indicating significant depressive symptoms.²⁷ A study done in Iranian women reported comparatively lower depression in 6 (4.4%) menopausal women.²⁴ In this study, women belonging to *Dalit* caste experienced menopausal symptoms most frequently especially headache 46 (74.2%) and painful joints 45 (72.6%) as compared to other ethnic groups whereas decreased sexual desire 82 (67.2%), dry/sore vagina 15 (12.3%) and sore breasts 13 (10.7%) were most commonly experienced by women belonging to *Brahmin-Chhetri* ethnic group. *Adivasi-Janajati* caste women experienced sleep problem 41 (38.0%) most frequently. This difference between the

ethnic groups in reporting the incidence of menopausal symptoms might be due to the different social and cultural beliefs as well as difference in education and economic status. This finding is comparable with the SWAN study which noted the pronounced variation across different ethnic groups of Hispanic women, with the highest rates of vasomotor reported among Central American women and lowest rates among Cuban women.¹⁰

In current study, classic/vasomotor symptoms were experienced more by subjects who were living in low economic condition than those living in good economic condition. Similar findings were seen in SWAN study in which women who were in lower socioeconomic positions, including women with lower educational attainment were more likely to report vasomotor symptoms.²⁸ In this study, illiterate women reported sleep problem 85 (37.6%), decreased sexual desire 148 (65.5%), aching/painful joints 156 (69.0%), dizziness 131 (58.0%), palpitation 113 (50.0%), irritability 126 (55.8%), trouble with memory 119 (52.7%) and depression 77 (34.1%) most frequently than literate women. There was a significant association between sleep problem ($p=0.045$) and decreased sexual desire ($p=0.012$) with illiterate women. These findings were comparable to other studies²⁹⁻³¹ which showed that less educated women reported more menopausal symptoms than higher educated women. The negative correlation between the respondents' educational levels and the prevalence of menopausal symptoms can be due to life current stress and poor physical and psychological health in the past. In contrast to these findings, a study conducted among Indonesian women found that migrant educated women reported more frequent menopausal symptoms than did migrant non-educated women.³² In this study, depression was seen more in illiterate women and there was a significant association between low economic condition of women and depression ($p=0.011$). This may be due to poor social status, excessive physical work to take care of family and concerns regarding the needs of growing children which makes their lives stressful. Another possible risk factor for depression during menopause is sexual functioning and changes in the frequency of sex or in the level of sexual pleasure and satisfaction.³¹ In the longitudinal Ohio Midlife Women's Study, loss of resources and low level of education were strongly predictive of depression.³³

In conclusion, majority of the study participants were illiterate and living in low socio-economic condition. Prevalence of depression was 31.5%.

Menopausal symptoms were experienced more frequently by women belonging to *Dalit* caste, living in low socio-economic condition and who were illiterate. Depressive symptoms were also seen commonly among low socio-economic and illiterate women. These findings can help to understand the symptoms, health status and health needs, and to establish menopause clinics for screening and managing women in the transition phase in Nepal.

LIMITATIONS: Recall bias could not be avoided as retrospective information were asked such as age at menopause, duration since menopause, menopausal symptoms and depressive symptoms during first ten years of menopause.

Conflict of Interest: None

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