Health related quality of life among postmenopausal women of Siddharthanagar Municipality

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ABSTRACT

INTRODUCTION

Menopause is the permanent cessation of menstruation caused by the loss of ovarian follicular activity and subsequent hormonal deficiency. It significantly affects woman's quality of life because of the accompanying physiological, psychological, and social changes. The present study aimed to assess the health-related quality of life (HRQoL) and its associated factors among postmenopausal women.

MATERIAL AND METHODS

A community based cross-sectional study was conducted among 217 postmenopausal women from Siddharthanagar municipality, Nepal. Health-related quality of life was assessed using Menopausal Rating Scale (MRS). Logistic regression analysis was performed, adjusted odds ratios (AOR) with a 95% confidence interval (CI) was calculated to identify factors associated with HRQoL. A *p*-value of less than 0.05 was considered statistically significant.

RESULTS

Overall, 72.35% of postmenopausal women had poor quality of life. The mean and the standard deviation of the total MRS score was 13.32±7.41. Significantly associated factors included education (AOR= 0.38, 95% CI: 0.16-0.90), occupation (AOR= 2.63, 95% CI: 1.34-5.15), age at menopause (AOR= 0.38, 95% CI: 0.20-0.74) and duration of menopause in years (AOR= 2.26, 95% CI: 1.18- 4.35).

CONCLUSION

Findings of the study highlight the need for targeted health interventions and awareness programs aimed at improving the overall quality of life among postmenopausal women.

KEYWORDS

Quality of life, HRQoL, Menopause, Menopause Rating Scale

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INTRODUCTION

Quality of life (QoL) refers to an individual perception of their overall wellbeing within the framework of their cultural and value system and in relation to their expectations, standards and concerns.[1] HRQoL is a multi-dimensional concept that evaluates the impact of health status on overall QoL, through various domains.[2] It is considered to have a significant role in implementation and evaluation of health interventions.[3] Menopause is a natural physiological change in women's life which constantly gets affected by various physical, psychological, and urogenital symptoms, leading them to pursue medical care. It signifies the shift from reproductive to nonreproductive phase characterized by the permanent cessation of menstruation, resulting from a decline in the production of hormones by the ovaries.[4, 5] According to WHO report worldwide the age of menopause is 45 to 55 years,[6] while in Nepal the average age is found to be of 48.7 years.[7] Women experiences different symptoms like hot flushes, sleep disturbances, bone and joint problem and depression during this period which can have a negative impact in their HRQoL.[4, 8] These symptoms related to poor HRQoL of life could be distressing as it happens along with other important roles and responsibilities towards society, family and workplace.[9]

In many developing countries including Nepal, menopause remains a neglected health issue due to limited awareness, cultural taboos and inadequate access to healthcare services.[10] The social and economic challenges generally faced by women might further worsen the quality of life during menopausal shift. Therefore, understanding the HRQoL and identifying its determinants remains crucial for proper public health interventions.

MATERIAL AND METHODS

A cross-sectional study including 217 postmenopausal women was conducted in Siddharthanagar municipality, Rupandehi District, Nepal, from October 2024 to March 2025. The study population included women aged group 45-60 years, who had reached natural menopause for last 12 consecutive months and were living in Siddharthanagar municipality. Women with history of hysterectomy, self-reported chronic physical or mental illness and those unwilling to participate were excluded from this study.

Sample size was calculated using the Cochran formula:
$n=Z^2pq/d^2$ Where Z= 1.96, is the normal variate at confidence interval of 95%, p = 51.4% = 0.514 (based on previous study where 51.4% had poor quality of life)[10], q=1-p = 1-0.514 = 0.486, d= allowable error (7%) The calculated sample size = 196, considering a non-response rate of 10%, final sample size was 218.

Sampling procedure

Siddharthanagar Municipality, located in the southern part of Rupandehi District of Lumbini Province, serves as the administrative headquarter of the district. It includes 13 wards with a total population 74,436, including 37,249 males and 37187 females. From the total 13 wards, two wards (Ward no 7 and 9) were selected using simple random sampling method. Ward no. 7 has a population of 3,626, with 1834 females, of whom 350 were within 45-60 years age group. Similarly, ward no 9 has a population of 8,370, including 4268 females of whom 605 were within the required age group.[11] From the two selected wards equal number of respondents (109 from each ward) were taken to meet the required sample size. In order to choose the respondents from selected wards, snowball sampling method was used.

Tools and technique for data collection

Face-to-face interviews were conducted using a self-formulated questionnaire to collect sociodemographic, reproductive and personal information of the participants. The validated Nepali version of a Menopause Rating Scale (MRS) was also used for the assessment of HRQoL.[12] It consists of 11 symptoms grouped into three dimensions, with each symptom scoring, 0 (no complaints) to 4 (severe symptoms) based on participants perceived severity. The MRS scoring is a widely used instrument that has demonstrated high reliability, validity, applicability, and good repeatability.[10, 13, 14]

Dimension 1: Somatic domain (4 items, total score: 0-16)

- Hot flushes
- Heart Discomfort
- Sleep problems
- Joint and muscular discomfort

Dimension 2: Psychological domain (4 items, total score:0-16)

- Depressive mood
- Irritability
- Anxiety
- Physical and mental exhaustion

Dimension 3: urogenital domain (3 items, total score: 0-12)

- Sexual problems
- Bladder problems
- Dryness of vagina

The total score of the Menopause Rating Scale (MRS) ranges from 0 to 44 and is used to assess health-related quality of life. On the basis of total score, symptoms are categorized into four categories: little or no symptoms (0-4), mild (5-8), moderate (9-16), and severe (17-44). For the purpose of further analysis, participants with moderate to severe scores were considered as having poor quality of life. Dimension specific scores were obtained adding the scores of individual items within each respective domain.

Data analysis

Data were first entered into a Microsoft Excel and then analyzed using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics such as frequency, percentage, mean and standard deviation were used to summarize participants characteristics and assess overall HRQoL. Bivariate analysis was conducted to examine the association between HRQoL and the independent variables.

Variables with *p*-value of less than 0.05 in bi-variate analysis were considered statistically significant and then included in a multivariate logistic regression model to calculate the adjusted odd ratios.

Ethical consideration

Ethical approval for the study was taken from the Institutional Review Committee of Universal College of Medical Science (UCMS/IRC/089/24). Prior to data collection, the purpose and objectives of the study were explained to each participant. Both verbal and written informed consent were obtained from all the respondents. Participant's Privacy was respected and confidentiality of the information was maintained throughout the study.

RESULTS

Total 218 postmenopausal women were enrolled in this study. During data cleaning, one record was found to have missing information and was therefore excluded. Thus, total 217 participants were included in final analysis.

Most participants were aged 55 years and above, belonged to Hindu religion (90.8%), and lived in a joint family (71.9%). Most of them (69.1%), reported a monthly income of ≥ 50,000 NRS while 29.5% had an education of SLC and above. Early menarche <15 years was common (94%) and menopause at ≥50 years was reported by 53.9% of participants. Health seeking behavior was reported by 64.1% of participants, while 20.3% were smokers and 26.7% consumed alcohol (table 1). Assessment of menopausal symptoms using the Menopause Rating Scale showed that Somatic symptoms were the most prevalent. Nearly all participants (97.7%) reported at least one somatic symptom, and this domain had the highest mean score (6.50±3.64). Majority of them reported joint and muscular discomfort (88.2%) and the mean total MRS score was found to be 13.32 ± 7.41 (Median=14) (table 2). Overall, 72.35% of participants had poor quality of life (MRS ≥9) suggesting that the majority of postmenopausal women experienced considerable impairment in health-related quality of life (table 3).

Table 1. Characteristics of participants (n = 217)

Characteristics	Frequency	Percentage
Age		
<55	106	48.8
≥55	111	51.2
Religion		
Hindu	197	90.8
Muslim	20	9.2
Ethnicity		
Bhramin/Cheetri	62	28.6
Janjati	74	34.1
Madhesi	61	28.1
Muslim	20	9.2
Education		
No Schooling	59	27.2
Primary school	48	22.1
Secondary School	46	21.2
SLC* and above	64	29.5
Occupation		
Service	34	15.7
Business	28	12.9
Agriculture	33	15.2
Homemaker	122	56.2
Marital status		
Married	187	86.2
Divorced/Widow	30	13.8
Monthly income		
<50000	67	30.9
≥50000	150	69.1
Type of family		
Nuclear	61	28.1
Joint	156	71.9
Age at menarche		
<15	204	94
≥15	13	6
Age at menopause		
<50	100	46.1
≥50	117	53.9
Parity		
1-2	91	41.9
≥3	126	58.1
Duration of menopause in years		
<5	109	50.2
≥5	108	49.8
Health seeking behavior		
Yes	139	64.1
No	78	35.9
Smoking		
Yes	44	20.3
No	173	79.7
Alcohol intake		
Yes	58	26.7
No	159	73.3

SLC- School leaving certificate

Table 2. Information about the symptoms using the Menopausal Rating Scale (MRS)

Characteristics	Frequency (n)	Percentage (%)	Mean ± SD
Somatic subscale	212	97.70	6.50±3.64 (Median 7)
Hot flashes, sweating	186	85.71	2.18±1.30
Heart discomfort	98	45.16	1.03±1.30
Sleep problems	112	51.61	1.09±1.26
Joint and muscular discomfort	191	88.2	2.21±1.25
Psychological subscale	192	88.48	5.78±4.24 (Median 6)
Depressive mood	152	70.05	1.76±1.43
Irritability	167	76.96	2.09±1.50
Anxiety	107	49.31	1.17±1.43
Physical and mental exhaustion	78	35.94	0.78±1.22
Urogenital subscale	164	75.58	2.78±2.41 (Median 2)
Sexual problem	88	40.55	0.75±1.03
Bladder problems	87	40.09	0.68±0.98
Dryness of vagina	143	65.90	1.35±1.19
Total score			13.32±7.41 (Median=14)

Table 3. Quality of life among postmenopausal women using Menopausal Rating Scale

Characteristics	Frequency (n)	Percentage (%)
Quality of Life (QOL)		
Poor (Total MRS score ≥ 9)	157	72.35
Good (Total MRS score <9)	60	27.65

Further analysis was done using bivariate and multivariate logistic regression to identify the factors associated with quality of life. Variables such as education, occupation, age at menopause and duration of menopause were statistically significant in multivariate analysis. Women with no schooling were likely to experience poor quality of life as compared to those who had attended school (AOR = 0.38, 95% CI: 0.16-0.90, *p*= 0.028), whereas those engaged in occupation like service or business were more likely to have a good quality of life in comparison to those who were house makers (AOR = 2.63, 95%CI: 1.34-5.15, *p*= 0.005). Those participants who experienced menopause before 50 years of age were likely to have poor quality of life (AOR = 0.38, 95%CI: 0.20-0.74, *p*=0.004). Moreover, duration of menopause less than five years was associated with good quality of life (AOR = 2.26, 95%CI: 1.18-4.35, *p*=0.014). However, other variables like age, marital status, family type, income, parity, health- seeking behavior, smoking and alcohol intake were not found to have statistically significant associations with quality of life (table 4).

Table 4. Associated factors of health-related quality of life of the study participants

Variables	HRQoL		COR	95% CI	AOR	95% CI	*p*-value
	Good (%)	Poor (%)					
Age of respondent							
<55	32 (30.2)	74 (69.8)	1.28	0.70-2.32			
≥55	28 (25.2)	83 (74.8)	1				
Religion							
Hindu	56 (28.4)	141 (71.6)	1.58	0.50-4.96			
Muslim	4 (20)	16 (80)	1				
Ethnicity							
Janjati	20 (27)	54 (73)	1.06	0.49-2.29			
Madhesi	20 (32.8)	41 (67.2)	1.40	0.64-3.06			
Muslim	4 (20)	16 (80)	0.71	0.20-2.47			
Bhramin/Chhetri	16 (25.8)	46 (74.2)	1				
Educational status							
No Schooling	8 (13.6)	51 (86.4)	0.32	0.14-0.72*	0.38	0.16-0.90**	0.028
Schooling	52 (32.9)	106 (67.1)	1		1		
Marital Status							
Married	54 (28.9)	133 (71.1)	1.62	0.62-4.19			
Divorced/Widow	6 (20)	24 (80)	1				
Occupational status							
Service/Business	28 (45.2)	34 (54.8)	3.16	1.68-5.96*	2.63	1.34-5.15**	0.005
Agriculture/Homemaker	32 (20.6)	123 (79.4)	1		1		
Monthly Income							
<50000	11 (16.4)	56 (83.6)	0.40	0.19-0.84*	0.68	0.31-1.52	0.359
≥50000	49 (32.7)	101 (67.3)	1				
Family type							
Nuclear	15 (24.6)	46 (75.4)	0.80	0.40-1.58			
Joint	45 (28.8)	111 (71.2)	1				
Age at menarche							
< 15 years	59 (28.9)	145 (71.1)	4.88	0.62-38.39			
≥ 15 years	1 (7.7)	12 (92.3)	1				
Age at menopause							
< 50 years	19 (19.0)	81 (81.0)	0.43	0.23-0.81*	0.38	0.20-0.74**	0.004
≥ 50 years	41 (35.0)	76 (65.0)	1				
Parity							
1-2	21 (23.1)	70 (76.9)	0.66	0.36-1.24			
≥3	39 (31.0)	87 (69.0)	1				
Duration of menopause in years							
< 5	39 (35.8)	70 (64.2)	2.30	1.24-4.27*	2.26	1.18-4.35**	0.014
≥ 5	21 (19.4)	87 (80.6)	1				
Health seeking behavior							
Yes	46 (33.1)	93 (66.9)	2.26	1.14-4.45*	1.96	0.96-3.98	0.062
No	14 (17.9)	64 (82.1)	1				
Smoking							
No	52 (30.1)	121 (69.9)	1.93	0.84-4.44			
Yes	8 (18.2)	36 (81.8)	1				
Alcohol intake							
No	49 (30.8)	110 (69.2)	1.90	0.91-3.98			
Yes	11 (19)	47 (81)	1				

DISCUSSION

The present study assessed the health-related quality of life (HRQoL) and the factors associated with it among postmenopausal women in Siddharthanagar Municipality. The average age at menopause was 49.82 ± 2.14 years, which is in accordance with previous studies.[5, 15, 16] The findings revealed that nearly three-fourth (72.35%) of the participants had poor HRQoL, indicating a significant burden of menopausal symptoms in this population. This result is similar to previous studies that documented poor quality of life among 70.2% and 77% of the study population.[17, 18] However contrasting finding with lower percentage of poor quality of life (51.4)% was reported among menopausal women in Pokhara, Nepal.[10] Differences in socioeconomic conditions, cultural perceptions of menopause and access to health services may account for this disparity. The mean total MRS score in present study was 13.32 ± 7.41 (Median= 14), a finding that is similar to those reported in studies done in India[17] and Iran.[19] However, higher scores have been reported in studies from Ecuador[20] and India.[21] The variation in score might be due to different study setting, study population and the methodology used. Symptoms related to somatic domain were found to be the most prevalent followed by psychological and urogenital domain, alike to other studies.[22, 23] Commonly reported symptoms from MRS were joint and muscular discomfort, followed by hot flushes and irritability which is in line with other studies.[21, 24, 25]

Our study showed a significant association with educational status where women with no education were more likely to experience poor HRQoL. This finding supports previous studies that identified education as a protective factor, likely because educated women possess greater health awareness, engage in positive health seeking behaviors in consistent with studies done in different countries.[10, 19, 25, 26] Also, occupation was significantly associated, employed women engaged in services or some business exhibiting better quality of life than homemakers supported by earlier studies.[10, 19, 25] It could be speculated that an employment not only contributes to economic independence but also boosts confidence, enhances social interactions and psychological well-being, which further helps in mitigating the negative impact of menopausal symptoms.

Furthermore, the findings of this study showed that age at menopause was another important factor associated with HRQoL. Women who attained menopause before 50 years of age reported poor quality of life which is similar to the findings from previous studies.[19, 21] Early menopause shortens estrogen exposure and increases likelihood of vasomotor, psychological, and urogenital symptoms that collectively reduce HRQoL.[27] In addition, our finding showed that women with a shorter duration of postmenopausal period were more likely to experience a good quality of life in comparison to those with longer duration. Several studies have similarly reported that menopausal symptoms can persist and tend to become chronic over time, largely due to progressive estrogen deficiency which contributes to poor HRQoL.[25, 28, 29]

Lifestyle factors such as smoking and alcohol intake were not significantly associated in this study, however, global evidence suggest that these behaviors affect HRQoL, by aggravating menopausal symptoms.[10, 21, 28, 30] Similarly, family income was also not associated in HRQoL in our findings which contradicts with the findings from previous studies.[10, 19, 29] This difference in findings might be due to variations in study population, educational status, level of economic independence, life style, cultural back grounds and believes.

CONCLUSION

Overall, this study highlights that postmenopausal woman experiences significant impairment in HRQoL which is influenced by educational status, occupational involvement, age at menopause and duration of menopause. These findings support the need for targeted community-based interventions, including menopausal counseling services, lifestyle modification, skill building and occupational engagement program, and health education programs for further improvement in quality of life among postmenopausal women.

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CONFLICT OF INTEREST

None

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