

Health Promoting Lifestyle Behaviors and Sleep Quality among Post-Menopausal Women in Pakistan

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ABSTRACT

Background: One of the most important concerns regarding improving women health is to promote healthy lifestyle behaviors. Adoption of such behaviors can increase the quality of life as well as delay development of co-morbidities due to menopause.

Aim: The aim of the study was to assess health promoting behaviors and sleep quality among post-menopausal in Pakistan.

Methodology: A descriptive cross-sectional study design was used. Study respondents included postmenopausal women visiting gynecologic clinic of healthcare facilities located in twin cities of Pakistan. Sample size was calculated to be 382 patients to achieve 95% confidence level with 5% margin of error. Two pre-validated structured questionnaires were used for collection of data in this study i.e., Health Promoting Lifestyle Profile II (HPLPII) and Pittsburgh Sleep Quality Index (PSQI). Mann-Whitney and Kruskal-Wallis ($p \geq 0.05$) tests were applied according to different demographic variables.

Results: The results highlighted that among all the HPLP domains, highest mean score was observed for interpersonal relations (13.53 ± 4.65) followed by nutrition (13.16 ± 4.84) and spiritual growth (11.20 ± 4.43), whereas the lowest score was observed for physical activity (5.57 ± 4.10). The results highlighted that highest scores for PSQI were observed in the domain of sleep disturbances (1.43 ± 588) followed by domain of sleep latency (1.34 ± 1.18) and subjective sleep quality (1.07 ± 739). Whereas lowest scores were observed in the domain of habitual sleep efficiency (0.25 ± 464) which indicates better sleep quality in this domain.

Conclusion: The result of the present study concluded poor health promoting lifestyle behavior and poor sleep quality among post-menopausal women in Pakistan. There is a need of designing awareness programs and sessions for women in order to provide counseling to women regarding the effects of menopause on body and importance of adopting a physical and healthy lifestyle by healthcare professionals.

Keywords: Health promoting lifestyle behaviors, post-menopausal, women, sleep quality, Pakistan

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INTRODUCTION

Women are the most important part of this society and considered as the backbone of promoting healthy behaviors among family. A normal healthy female undergoes many physiological and hormonal phases during her lifetime, which includes puberty at age between 10-16 years with start of menstruation which starts to cease from the age of 45 years [1]. Menopause is a transition that women undergo in mid stages of life which involves the slow process of menstrual cycle cessation, which in turn, triggers various physiological changes in the body such as vascular instability, atrophy of the urogenital tract, bone and skin diseases as well as soft tissue disorders. The menopausal phase also includes other common symptoms like hot flashes, night sweats, a myriad of non-specific emotional and psychological distresses, decreased sexual functioning and libido [2]. In addition, sleep disorders are quite common among women in menopause. One of the most common sleep problems seen in menopause is sleeplessness with a prevalence of 28%–63%, which includes difficulty in falling asleep and/or maintaining sleep, leading to daytime drowsiness and fatigue [3]. The most frequent underlying causes of insomnia in menopause includes anxiety, hot flashes and sleep disorders [4]. Managing the overall health, health related issues and promoting healthy lifestyle among women in post-menopausal phase has become the most important health concern. Interventions aimed towards postmenopausal women can increase expectancy of life among menopausal women as most of the women are

anticipated to spend quarter or one third of their lives in this state of menopause [5]. There are multiple factors that can influence women's beliefs, knowledge and behavior towards menopause among which health education is a prime factor along with other factors such as social background, physical health, nutrition, sexual and emotional health [6]. Health promotion, disease prevention, and a healthy lifestyle have been identified as main factors that promote quality of life and eventually reduce health care expenses in menopausal women [7]. Women in developing countries such as Pakistan lack basic knowledge about physiology of menopause and its sign and symptoms, and they tend to avoid discussion about it or seek medical help. Health promoting behavior is a new dimension, which is yet to be explored in Pakistan especially in case of post-menopausal women. Extensive research has been conducted in developed world regarding health promoting behaviors as well as sleep quality in menopausal women. However, assessment of health promoting behaviors and sleep quality among post-menopausal women is an unexplored area of research in Pakistan. Limited data is available in Pakistan in this regard. Thus, the present study has been designed to assess health promoting behaviors and sleep quality among post-menopausal in Pakistan.

METHODOLOGY

A descriptive cross-sectional study design was used to assess health promoting behaviors and sleep quality among post-menopausal women in Pakistan. Study

approval was taken from the Ethical Committee of Hamdard University (BASR-78-5). Approval was also taken from medical superintendents of different hospitals of Islamabad and Rawalpindi. Respondents were briefed regarding nature and objectives of the study. Verbal and written consent were obtained prior to data collection from respondents. Respondents were assured of the confidentiality of their responses and their right to withdraw from the study at any time. The study respondents were post-menopausal women aged between 40-65 years old. Patients were categorized on the basis of age between 40-65 years old, whose last menstrual period occurred within period of last 1-5 years and had a normal menopause. Raosoft sample size calculator was used for calculation of the sample size at 95% confidence interval and 5% margin of error which came to be 382. Convenient sampling technique was used and all the respondents available at the time of data collection were selected. Two pre-validated structured questionnaires were used for collection of data in this study i.e., Health Promoting Lifestyle Profile II (HPLPII) and Pittsburgh Sleep Quality Index (PSQI) to assess healthy behaviors and sleep quality among post-menopausal women from twin cities of Pakistan. Pre-validated tool HPLP II includes 52 items the scoring of which has been done by the 4-item Likert scale where never scored 1, sometimes scored 2, often scored 3, and always scored 4. The HPLPII has six subscales of health responsibility (9 items), physical activity (8 items),

nutrition (9 items), spiritual growth (9 items), interpersonal relations (9 items) and stress management (8 items). Total score ranges from 52 to 208 [8]. Pittsburgh Sleep Quality Index is a self-report scale consisting of 7 components and 19 questions. The components include subjective sleep quality (C1), sleep latency (C2), sleep duration (C3), habitual sleep efficiency (C4), sleep disturbances (C5), use of sleeping medications (C6) and daytime dysfunction (C7). The score range of this questionnaire is 0-21 and an overall score of more than 5 indicates poor quality of sleep [9]. Pilot testing was performed on 10% of sample size to check reliability of tool. The value of Cronbach's alpha was 0.71 for HPLPII and 0.75 for PSQI. Data was cleaned, coded and analyzed using SPSS 21. Descriptive statistics comprised of frequencies and percentages were determined. Mann-Whitney and Kruskal Wallis test ($p \leq 0.05$) was used to determine differences among different variables.

RESULTS

Demographic Characteristics of Respondents

Out of 382 respondents, 30.4% (n=116) were 40-49 years old, 43.2% (n=165) were 50-59 years old and 26.2% (n=100) were 60-65 years old. Of all the respondents, 88.5% (n=388) had menopause between the age of 44-53 years. Most of the female were married (85.6%, n=327) and over three quarter of respondents (75.4%, n=228) had more than 3 children. A detailed description is given (Table 1).

Table 1. Demographic Characteristics of Respondents

Indicator	n (%)	
Age	40-49 Y	116 (30.4)
	50-59Y	165 (43.2)
	60-65Y	100 (26.2)
Hospital	Public	362 (94.8)
	Private	20 (5.2)
Age at Menarche	≤10years	3 (0.8)
	11-12years	80 (20.9)
	13-14years	213 (55.7)
	≥15years	86 (22.5)
Age at Menopause	≤40years	8 (2.1)
	41-45years	72 (14.3)
	46-50years	164 (42.9)
	>50years	137 (35.8)
Marital status	Married	327 (85.6)
	Unmarried	14 (3.7)
	Divorce	39 (10.2)
Qualification	Illiterate	108 (28.3)
	Primary	44 (11.5)

	Secondary	85 (22.3)
	Bachelor	78 (20.4)
	Masters	56 (14.7)
	Postgraduate	11 (2.9)
No of children	None	34 (8.9)
	1	15 (3.9)
	2	45 (11.8)
	3	96 (25.1)
	4	97 (25.4)
	More than Four	95 (24.9)
Setting	Urban	238 (62.3)
	Rural	144 (37.7)
Work Status	Employed	150 (39.3)
	Housewife	229 (59.9)
Type of Morbidity	None	164 (42.9)
	Hypertension	116 (30.4)
	Diabetes	40 (10.5)
	Others	62 (16.2)
Type of therapy	Hormone Replacement Therapy	19 (5.0)
	Others	360 (94.2)

Domains of Health Promoting Lifestyle Profile II (HPLP-II) among Post-Menopausal Women in Pakistan

The results highlighted that among all the HPLP domains, highest mean score was observed for interpersonal

relations (13.53 ± 4.65) followed by nutrition (13.16 ± 4.84) and spiritual growth (11.20 ± 4.43), whereas the lowest score was observed for physical activity (5.57 ± 4.10). A detailed description is given in (Table 2).

Table 2. Domains of Health Promoting Lifestyle Profile II (HPLP-II)

Indicator	Mean	Standard Deviation
Health Responsibility	9.84	± 4.04
Physical Activity	5.57	± 4.10
Nutrition	13.16	± 4.84
Spiritual Growth	11.20	± 4.43
Interpersonal Relations	13.53	± 4.65
Stress Management	9.69	± 3.43

Comparison of Healthy Promoting Lifestyle Profiles by Demographic Characteristics among Post-Menopausal Women in Pakistan

Significant difference ($p \leq 0.05$) was observed in health promoting lifestyle profiles among respondents having different levels of education. Respondents having bachelors as their education had comparatively healthier

lifestyle promoting behaviors whereas postgraduates and those having master’s education reported poor healthy promoting lifestyle behaviors. No significant difference ($p \geq 0.05$) was observed among respondents having different age groups, marital status, and number of children, co-morbidities and type of therapies. A detailed description is given in (Table 3).

Table 3. Comparison of Healthy Promoting Lifestyle Profiles by Demographic Characteristics

Demographics	n	Mean rank	Test statistics	p-value
Age	40-49=116	127.31	4.164 ^b	0.125
	50-59= 165	139.91		
	60-65=99	122.16		
Marital status	Unmarried= 14 Married= 327 Divorced=39	23.14 28.38 22.16	219.000 ^b	0.276
Level of education	Primary= 44	112.76	27.719 ^b	0.001
	Secondary= 85	151.04		
	Bachelors= 78	162.65		
	Masters= 56	109.83		
	Postgraduate= 11	76.46		
Number of children	None= 34	159.25	7.242 ^b	0.124
	1= 15	205.68		
	2= 45	158.91		
	3= 96	163.21		
	4= 97	192.72		
	More than 4= 95	168.27		
Type of co-morbidity	None= 164	139.53	2.603 ^b	0.272
	Hypertension= 116	104.00		
	Diabetes= 40	106.98		
	Others= 62	119.83		
Type of therapy	Hormone replacement therapy= 19	246.00	1.130 ^a	0.659
	Others= 360	181.47		

Mann-Whitney Test ($p \leq 0.05$)^a, Krsukal Wallis Test ($p \leq 0.05$)^b.

Domains of Pittsburgh Sleep Quality Index (PSQI) among Post-Menopausal Women

The results highlighted that highest scores for PSQI were observed in the domain of sleep disturbances (1.43 ±.588) followed by domain of sleep latency (1.34 ±1.18) and

subjective sleep quality (1.07 ±.739). Whereas lowest scores were observed in the domain of habitual sleep efficiency (0.25 ±.464) which indicates better sleep quality in this domain (Table 4).

Table 4. Domains of Pittsburgh Sleep Quality Index (PSQI)

Indicators	Mean Score	Standard Deviation
Subjective sleep quality	1.07	±.739
Sleep latency	1.34	±1.018
Sleep duration	0.77	±.891
Habitual sleep efficiency	0.25	±.464
Sleep disturbances	1.43	±.588
Use of sleep medication	0.74	±.941
Day time dysfunction	0.94	±.923
Total score	6.51	±3.238

Comparison of Sleep Quality by Demographic Characteristics among Post-Menopausal Women

Significant difference ($p \leq 0.05$) was observed among sleep quality and age and sector of hospital. Respondents who had age above 60 years had comparatively poor sleep quality whereas younger respondents with age between 40-49 years had comparatively better quality of sleep.

Respondents being treated at public sector hospitals had comparatively poor quality of sleep than those being treated at private sector hospitals. No significant difference ($p \geq 0.05$) was observed among sleep quality and marital status, level of education, number of children, type of co-morbidity and type of therapy. A detailed description is provided in (Table 5).

Table 5. Comparison of Sleep Quality Domains by Demographic Characteristics

Demographics	n	Mean rank	Test statistics	p-value
Age	40-49=116	122.43	9.60 ^b	0.008
	50-59= 165	123.54		
	60-65=99	150.92		
Marital status	Unmarried= 14	29.68	235.500 ^b	0.440
	Married= 327	26.04		
	Divorced=39	25.42		
Hospital	Public= 362	194.37	2581.500 ^a	0.030
	Private= 20	139.58		
Level of education	Illiterate= 108	154.12	6.183 ^b	0.186
	Primary= 44	139.28		
	Secondary= 85	151.19		
	Bachelors= 78	132.12		
	Masters= 56	119.79		
	Postgraduate= 11	152.91		
Number of children	None= 34	165.25	0.823 ^b	0.935
	1= 15	182.70		
	2= 45	174.80		
	3= 96	180.97		

	4= 97	171.62		
	More than 4= 95	169.46		
Type of co-morbidity	None= 164	141.85	3.036 ^b	0.219
	Hypertension= 116	107.95		
	Diabetes= 40	124.41		
	Others= 62	102.77		
Type of therapy	Hormone replacement therapy= 19	208.50	0.195 ^b	0.659
	Others= 360	181.78		

Mann-Whitney Test ($p \leq 0.05$)^a, Krsukal Wallis Test ($p \leq 0.05$)^b.

DISCUSSION

During the transition phase of menopause, women experience fluctuations in levels of hormones due to which women at later age experience a variety of symptoms and syndromes [7]. Reduced adherence to healthy behaviors and lifestyle changes and low levels of knowledge regarding menopause can lead to reduced quality of life. The reduced quality of life among menopausal women places an increased disease burden on the healthcare system in developing nations such as Pakistan. Developing an appropriate and effective intervention aimed at promotion of health lifestyle behaviors, sleep quality and overall quality of life are vital for improving menopausal related quality of life [10].

The results of the present study reported poor healthy lifestyle behaviors among women undergoing the post-menopausal phase. The results of the present study reported that the most common symptoms associated with menopause included physiological and psychological disturbances, changes in mood ultimately leading to reduced quality of life. Marital status, age, number of children and type of therapy did not affect the health promoting lifestyle behaviors of menopausal women. Similar findings were reported in a study conducted in Bahrain where change in mood, mental disturbances and compromised quality of life was observed in post-menopausal women [11]. The results of the present study revealed that health promoting lifestyle profile, health responsibility and physical activity was quite low among respondents who had lower level of education. This might be due to poor awareness, limited access to healthcare services and poor education. On the other hand, women with better education, high physical activity and high income had better health promoting lifestyle profile. This might be due to the fact that they had better excess to nutrition, resources and health facilities. A study conducted in Pakistan reported similar findings highlighting multiple factors which influenced women's beliefs, knowledge and behavior towards menopause highlighting education as a prime factor along with social background, physical health, nutrition, sexual and emotional health as other factors for better quality of life [12]. Physical activity can play a positive role in improving the quality of life of postmenopausal women [13]. The results of the present study reported that regular exercise and physical activity was moderate among menopausal women. This might be due to the fact that women had less awareness regarding benefits of physical activity on

symptoms of menopause. Similar findings were reported in a study conducted in Brazil where women who did not do any sort of physical activity had more pronounced symptoms of menopause [14].

An appropriate diet comprised of necessary macro and micronutrients is essential for post-menopausal women to prevent development of deficiencies and diseases. Women should take food rich in calcium, that is milk, yogurt, plums, cheese, etc., as well as vitamin D contained in salt water fish [15, 16]. The results of present study reported that healthy dietary habits were poor among majority of the respondents. Most of them had a diet low in fats, saturated fats and cholesterol however there were moderate number of respondents taking breakfast including daily consumption of 2-3 servings of milk, yogurt or cheese, and 3-5 servings of vegetables. Moreover, only few of the women restricted use of sugar & sugar containing food. Similar diet pattern adopted by females in Poland were reported among post-menopausal women [17].

CONCLUSION

The result of the present study concluded poor health promoting lifestyle behavior and poor sleep quality among post-menopausal women in Pakistan. The lowest score was observed in domain of physical activity while the highest score was observed in interpersonal relationship. Most common consequences of menopause observed among respondents were poor memory, compromised physical health, low stamina, night sweats, anxiety, vaginal dryness and loss of sexual desire. There is a need of designing awareness programs and sessions for women in order to provide counseling to women regarding the effects of menopause on body and importance of adopting a physical and healthy lifestyle by healthcare professionals. Post-menopausal clinics should be developed to promote healthy living and improve sleep patterns and quality under supervision of a healthcare professional. Pharmacist must be involved to counsel post-menopausal women on their physiological and psychological changes and to educate them in maintaining better nutrition & physical activity for improving quality of life as well as provide OTC supplements to counter symptoms of menopause.

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