

ORIGINAL RESEARCH ARTICLE

Factor analysis of quality of life among menopausal women attending primary health centers of Jazan city, KSA

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Abstract

Although it looks reasonable to say menopausal women experience significant changes in quality of life, however the period is filled with anxiety and distress. Women can experience an array of symptoms including hot flushes, night sweats, sleep and mood disorders, impaired memory, lack of concentration, nervousness, depression, insomnia, bone and joint complaints Objectives: 1. To assess Quality of life in menopausal women attending primary health care centers of Jazan, KSA 2. To conduct factor analysis for the variables affecting quality of life of menopausal women Methodology: A cross-sectional study conducted in primary health centers located in Jazan city. All menopausal women between age of 40-79 years were considered. A predesigned questionnaire drawn from World Health Organization Quality Of Life BREF (WHO QOL BREF) utilized Results: Mean age was 50.02±4.5 (Age ± SD) Physical changes domain mean was 1.42±1.46 (mean ± SD), greater than other domains and the participants were experiencing physical changes affecting quality of life more than any domain Sexual changes domain mean ± SD was 1.21±1.99 and the participants were extremely bothered with symptoms of this domain. Conclusions: Significant shift in health care services is required for improving QOL of menopausal women which continue to be overlooked. (*Afr J Reprod Health 2023; 27 [10]: 36-45*).

Keywords: Factor analysis, Jazan city, MENQOL, post-menopausal women, quality of life

Résumé

Bien qu'il semble raisonnable de dire que les femmes ménopausées connaissent des changements significatifs dans leur qualité de vie, cette période est néanmoins remplie d'anxiété et de détresse. Les femmes peuvent ressentir toute une série de symptômes, notamment des bouffées de chaleur, des sueurs nocturnes, des troubles du sommeil et de l'humeur, des troubles de la mémoire, un manque de concentration, de la nervosité, de la dépression, de l'insomnie, des problèmes osseux et articulaires. Objectifs : 1. Évaluer la qualité de vie des femmes ménopausées fréquentant les centres de soins de santé primaires de Jazan, KSA 2. Effectuer une analyse factorielle pour les variables affectant la qualité de vie des femmes ménopausées Méthodologie : Une étude transversale menée dans les centres de santé primaires situés dans la ville de Jazan. Toutes les femmes ménopausées âgées de 40 à 79 ans ont été prises en compte. Un questionnaire prédéfini tiré du BREF sur la qualité de vie de l'Organisation mondiale de la santé (WHO QOL BREF) a utilisé les résultats : L'âge moyen était de 50,02+4,5 (âge + écart-type). La moyenne du domaine des changements physiques était de 1,42+1,46 (moyenne + écart-type), supérieure à celle des autres domaines et les participants subissaient des changements physiques affectant la qualité de vie plus que n'importe quel domaine. La moyenne du domaine des changements sexuels + SD était de 1,21 + 1,99 et les participants étaient extrêmement gênés par les symptômes de ce domaine. Conclusions : Un changement significatif dans les services de soins de santé est nécessaire pour améliorer la qualité de vie des femmes ménopausées, qui continue d'être négligée. (*Afr J Reprod Health 2023; 27 [10]: 36-45*).

Mots-clés: Analyse factorielle, ville de Jazan, MENQOL, femmes ménopausées, qualité de vie

Introduction

Menopause in a woman's life is a crucial period and is a normal physiologic process. It is a physical

element of women's aging process¹ and is defined as the permanent cessation of menses for 12 months or more due to cessation of ovarian hormone production² This period is always filled with

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anxiety for the females. Based on the WHO classification, if the female is experiencing amenorrhea for the last 12 months or more period then she is classified as post-menopausal women². Early menopause is menopause occurring before the age of 45 years. During menopausal transition, there is a lot of fluctuation in the hormone levels, and thus women may experience many symptoms and conditions³. Coping with menopause in the peri-menopausal ages has always been a troublesome issue in every woman's life⁴.

During menopausal transition hormonal fluctuations occur leading to physical mental physiological stress. However this influence is subjective and varies from woman to woman⁵. During this period women can experience an array of symptoms including hot flashes, night sweats, sleep and mood disorders, impaired memory, lack of concentration, nervousness, depression, insomnia, bone and joint complaints, and reduction of muscle mass⁶. The duration, severity, and impact of these symptoms vary tremendously from person to person, and population to population depending on race and ethnicity^{7,8}. In some females experience severe symptoms affecting their personal and social functioning, and quality of life (QOL)⁹. Quality of life is a broad, multidimensional concept lacking a definition. According to the World Health Organization, quality of life is individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns¹⁰. Women experience vasomotor and psychological symptoms during this period. Vasomotor symptoms, are common physical conditions experienced by women when the female passes menopausal or early menopausal period. Psychological symptoms frequently associated with menopause include fatigue, irritability, and anxiety. Some symptoms associated with changing hormone levels are directly linked with estrogen depletion. Hot flashes, night sweats, and vaginal atrophy resulting in vaginal dryness are correlated with changing levels of sex hormones¹¹. Other symptoms, such as sleep disturbances, fatigue, anxiety, and weight gain, although common to the experience of menopause, are multi factorial in cause and occur in non-postmenopausal women as well. For identifying the symptoms, the menopause specific Quality of life questionnaire (MENQOL) is utilized. WHO introduced MENQOL in 1996 as a

tool to assess QOL among post-menopausal women¹² and this tool is widely used with reliability and validity¹³. The widespread use of MENQOL in different populations establishes its credit as a valuable measure for quality of life. Added advantages of using MENQOL are its easy administration and preciseness of the four-domain scale¹⁴. Despite the widespread use of MENQOL certain variables are found to be associated with other domain factors and this can be evaluated by factor analysis.

The factor analysis may assist clinicians in evaluating post-menopausal symptoms effortlessly and also it may give deep insight in estimating the health burden (both physical and psychological) of menopause among women living in an urban community of Jazan city. It will help identify the health care needs of the post-menopausal women.

Specific objectives

1. To assess Quality of life in menopausal women attending primary health care centers of Jazan, KSA
2. To conduct factor analysis for the variables affecting quality of life of menopausal women.

Methods

This is a descriptive observational study conducted in primary health centers located in Jazan city for the period of 6 months. A predesigned questionnaire covering socio demographic and quality of life related aspects [drawn from World Health Organization Quality Of Life BREF (WHO QOL BREF)]², Menopause-Specific Quality-Of-Life (MENQOL)¹³ and Menopause Rating Scale (MRS)]¹⁵ tested and analyzed. The variables were classified in 4 sections.

Socio demographic characteristics

Age, occupation, literacy status, marital status husband (occupation, literacy), family (total members, type, income, socio economic status).

Menstrual and obstetric details

Age at menarche, Menstrual cycles, History of dysmenorrhea, age at marriage, age at first child birth, number of pregnancies, number of children, history of miscarriage, age at menopause,

Attainment of menopause, Pattern of menstrual cessation.

MENQOL symptoms assessment

Hot flashes (V1), night sweats (V2), sweating (V3), dissatisfaction of my personal life (PM1), feeling anxious (PM2), poor memory (PM3), accomplishing less than I used to do (PM4), feeling depressed (PM5), Being impatient (PM6), feeling or wanting to be alone (PM7), passing of gas (P1), aching in muscles and joints (P2), feeling tired or worn off (P3), difficulty sleeping (P4), headache or back of neck pain (P5), decrease in physical strength (P6), decrease in stamina (P7), lack of energy (P8), dry skin (P9), weight gain (P10), increased facial hair (P11), changes in appearance and texture (P12), feeling bloated (P13), low backache (P14) frequent urination (P15), involuntary urination while laughing (P16), decrease in sexual desire (S1), vaginal dryness (S2), avoiding intimacy (S3).

Factor analysis of the variables affecting quality of life of menopausal women

Factors were extracted using the principal component analysis and the number of retained factors was decided using the latent root (Eigen value) criterion and a scree plot on the un-rotated factor matrix. Those factors with eigen value greater than 1.4 were included. The factor matrix was then rotated by varimax rotation to obtain a simple factor pattern and only correlations (factor loadings) greater than ± 0.50 were considered. The factors' reliability was then tested using the Cronbach's alpha test which is a coefficient of reliability (consistency). P values were considered significant if less than 0.05.

Sample size calculation

The prevalence of symptoms related to menopause was found to be 47% in Saudi menopausal women taking in to account the most common symptom hot flashes¹⁶. The sample size was calculated taking 47% prevalence of symptoms and an allowable error of 5%. The number of menopausal women to be covered is 398. ($n = 4pq / L^2$, where p = positive character, q = 100-p, L= allowable error 5% of 'p') so sample size collected from the primary health

centers located in Jazan city. Total sample collected was 416 in the period of 6 months from the region Menopausal women selected randomly (using simple random method) from different areas in the center like, from the screening room, and female waiting areas After taking consent students interviewed participants for not less than 10 min each.

Inclusion criteria

All menopausal women (completed 12 months of Amenorrhea) between 35 to 79 years of age were included.

Exclusion criteria

Women with medically or surgically induced menopause and on HRT
Menopausal women with diagnosed gynecological cancers.
Menopausal women with severe illnesses

Statistical analysis

The data obtained entered and analyzed in Microsoft Office Excel. Important findings were subjected to tests of significance like Z test and Chi square test at 5% level of significance. Factor analysis with Eigen value >1.4 was taken Statistical computations were carried out with Statistical Package for Social Sciences (SPSS) version 22.0 software (SPSS Inc., IBM, Chicago, Illinois, USA).

Results

Section 1: Sociodemographic features

In the total sample 416, majority of the women responded belong to the age group 45-50 years and 51-55 years accounting for 25% each. 5.9% of the study population were more than 70 years. Mean age was found to be 50.02 ± 4.5 (Age \pm SD).

Section 2: Menstrual history of the participants

Twenty of the total participants (4.8%) achieved menarche at unusual age of more than 18 years Majority of the study population achieved menarche in the age range 13-15 years, next age group being 10-12 years. 9.6% had irregular menstrual cycles. 28.8% had dysmenorrhea.

Table 1: Age wise distribution of study participants

Age group of the respondents	Frequency	Percent
35-40years	24	5.8
41-45 years	28	6.7
46-50years	104	25.0
51-55 years	104	25.0
56-60 years	63	15.2
61- 65 years	44	10.6
66-70years	24	5.8
71-75 years	9	2.1
76-80 years	16	3.8
Total	416	100.0

Table 2: Menstrual history of the participants

Menstrual History of the participants		
Age at Menarche	Frequency	Percent
10-12 Years	128	30.8
13-15 Years	236	56.7
16-18 Years	32	7.7
> 18 Years	20	4.8
Total	416	100
Menstrual cycle		
Regular	376	90.4
Irregular	40	9.6
Total	416	100
Dysmenorrhea		
Yes	296	71.2
No	120	28.8
Total	416	100
Age at Marriage		
< 17 years	172	41.3
18-20 Years	120	28.8
21-23 Years	40	9.6
24-26 Years	44	10.6
> 26 Years	40	9.6
Total	416	100
Age at first child birth		
15-17 Years	28	6.7
18-20 Years	8	1.9
21-23 Years	112	26.9
24-26 Years	112	26.9
>26 Years	100	24
Not given birth to any children	56	13.5
Number of pregnancies		
0	28	6.7
1	8	1.9
2	20	4.8
3	4	1
4	20	4.8
5	36	8.7

6	300	72.1
Number of children		
0	28	6.7
1	8	1.9
2	20	4.8
3	16	3.8
4	28	6.7
5	36	8.7
6	280	67.3
History of miscarriages		
Yes	268	64.4
No	148	35.6
If yes how many miscarriages		
0	140	33.7
1	124	29.8
2	108	26
3	20	4.8
4	12	2.9
6	12	2.9
Age at menopause		
<40	76	18.3
40	71	18.3
41	269	63.5
Attainment of Menopause		
Natural	252	60.6
Induced	116	27.9
LSCS	48	11.5

172 (41.3%) married before achieving 17 years of age and 6.7% of them attained pregnancy and delivered first child. Number of pregnancies was more than 6 in 72% of population indicating high fertility rate in the region and in that around 67% have not less than 6 living children. Alarming number of miscarriages (64.4%) happened in the study population 18.3% of the study population have attained menopause at an early age of less than 40.

Section 3: Quality of life of post-menopausal women

Post-menopausal symptoms were studied under 4 domains as per the WHO MENQOL scale **Vasomotor changes:** 29.8% of the study population were found to have hot flashes and in those 7.7% hot flashes were seen to be severely affecting the quality of life in whereas 34.6% and 32.7% were feeling night sweats and sweating. In the total study population 17.3% and 13.5% were extremely

Table 3: Post-menopausal symptoms representing quality of life of participants

Variable	Not Bothered		Mildly bothered		Bothered for some of the day		Bothered mildly for the whole day		Moderately bothered		Severely bothered		Extremely bothered		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Vasomotor changes	Hot flashes	292	70.2%	32	7.7%	20	4.8%	12	2.9%	12	2.9%	16	3.8%	32	7.7%
	Night sweats	272	65.4%	72	17.3%	20	4.8%	20	4.8%	4	1.0%	16	3.8%	12	2.9%
	Sweating	280	67.3%	56	13.5%	44	10.6%	4	1.0%	20	4.8%	4	1.0%	8	1.9%
Psychomotor changes	Dissatisfaction with my personal life	332	79.8%	40	9.6%	20	4.8%	8	1.9%	4	1.0%	4	1.0%	8	1.9%
	Feeling anxious	228	54.8%	76	18.3%	40	9.6%	16	3.8%	20	4.8%	12	2.9%	24	5.8%
	Poor memory	236	56.7%	72	17.3%	32	7.7%	44	10.6%	16	3.8%	8	1.9%	8	1.9%
Physical changes	Accomplishing less than I do	256	61.5%	56	13.5%	24	5.8%	16	3.8%	20	4.8%	28	6.7%	16	3.8%
	Feeling depressed	260	62.5%	60	14.4%	20	4.8%	12	2.9%	24	5.8%	4	1.0%	36	8.7%
	Being impatient with others	300	72.1%	40	9.6%	36	8.7%	12	2.9%	4	1.0%	20	4.8%	4	1.0%
	Feeling of wanting to be alone	328	78.8%	24	5.8%	32	7.7%	20	4.8%	0	0.0%	8	1.9%	4	1.0%
	Passing gas	196	47.1%	72	17.3%	44	10.6%	20	4.8%	24	5.8%	16	3.8%	44	10.6%
	Muscle aches, joint pains	112	26.9%	100	24.0%	56	13.5%	16	3.8%	24	5.8%	36	8.7%	72	17.3%
	Feeling tired or worn out	156	37.5%	88	21.2%	48	11.5%	28	6.7%	16	3.8%	28	6.7%	52	12.5%
	Difficulty sleeping	224	53.8%	68	16.3%	36	8.7%	32	7.7%	8	1.9%	20	4.8%	28	6.7%
	Headache or back of neck pain	184	44.2%	68	16.3%	28	6.7%	56	13.5%	16	3.8%	16	3.8%	48	11.5%
	Decrease in physical strength	168	40.4%	88	21.2%	40	9.6%	24	5.8%	32	7.7%	20	4.8%	44	10.6%
	Decrease in stamina	208	50.0%	64	15.4%	48	11.5%	24	5.8%	12	2.9%	32	7.7%	28	6.7%
	Lack of energy	188	45.2%	48	11.5%	60	14.4%	24	5.8%	36	8.7%	4	1.0%	56	13.5%
	Dry skin	232	55.8%	56	13.5%	28	6.7%	36	8.7%	8	1.9%	8	1.9%	48	11.5%
	weight gain	276	66.3%	40	9.6%	32	7.7%	12	2.9%	12	2.9%	12	2.9%	32	7.7%
	Increased facial hair	356	85.6%	20	4.8%	16	3.8%	0	0.0%	12	2.9%	4	1.0%	8	1.9%
	Changes in appearance of texture	300	72.1%	44	10.6%	16	3.8%	16	3.8%	8	1.9%	12	2.9%	20	4.8%
	Feeling bloated	248	59.6%	52	12.5%	56	13.5%	16	3.8%	8	1.9%	20	4.8%	16	3.8%
Low backache	148	35.6%	72	17.3%	52	12.5%	20	4.8%	12	2.9%	48	11.5%	64	15.4%	
Frequent urination	240	57.7%	48	11.5%	16	3.8%	28	6.7%	32	7.7%	20	4.8%	32	7.7%	
Involuntary urination while laughing or coughing	324	77.9%	44	10.6%	12	2.9%	8	1.9%	0	0.0%	16	3.8%	12	2.9%	
Sexual changes	Decrease in sexual desire	276	66.3%	28	6.7%	28	6.7%	0	0.0%	8	1.9%	32	7.7%	44	10.6%
	Vaginal dryness	292	70.2%	36	8.7%	8	1.9%	4	1.0%	8	1.9%	16	3.8%	52	12.5%
	Avoiding intimacy	288	69.2%	36	8.7%	16	3.8%	4	1.0%	12	2.9%	12	2.9%	48	11.5%

Table 4: Domains means comparison affecting quality of life of menopausal women

Quality of life of post-menopausal women				
	Vasomotor changes domain	Psychomotor changes domain	Physical changes domain	Sexual changes domain
Mean	0.86	0.87	1.42	1.21
Std. Deviation	1.28	1.13	1.46	1.99

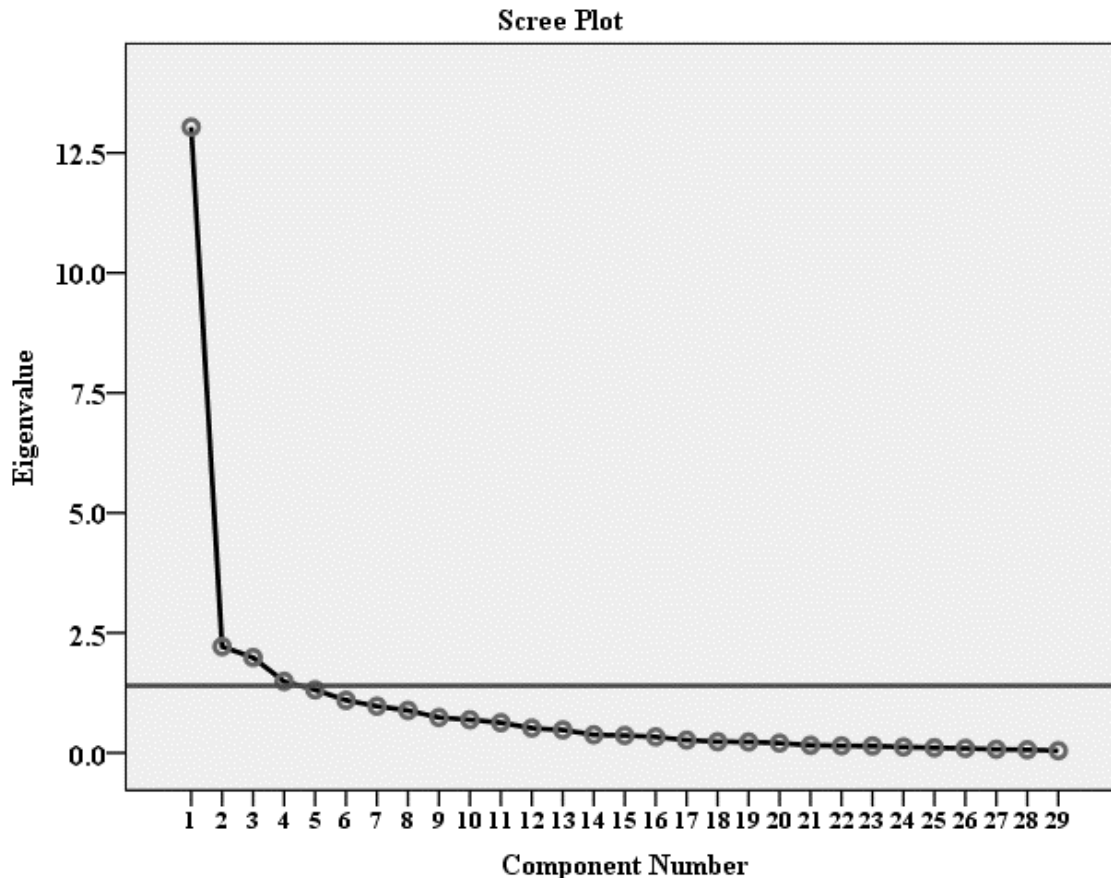


Figure 1: Factors representing Eigen value >1.4

bothered about night sweats and sweating respectively.

Psychomotor changes: 9.6% have expressed mild dissatisfaction with the personal life, 18.3% have said anxiousness bothers them mildly in their lives. Poor memory (17.3%) was causing mild influence on the participants. Substantial percentage (8.7%) were experiencing severe depression. 5.7% of participants answered they want to be alone sometimes a day.

Physical changes: 10.6% of the participants were extremely bothered about passing gas, 17.3% were having severe muscle aches and joint pains, 12.5% were feeling extremely exhausted, 11.5% had severe

head ache and neck pain episodes. 10.6% and 6.7% of the participants were experiencing severe decrease in physical strength and stamina respectively. 11.5% said dry skin is extremely bothering them. 7.7% of the participants answered weight gain is extremely bothering them. 12.5% have answered feeling bloated is mildly bothering them. 17.3% experiencing mild low backache sometimes a day. 11.5% and 10.6% were having mild bothering for frequent urination and urinary incontinence respectively

Sexual changes: 10.6% of the participants were experiencing extreme decrease in sexual desire and 11.5% were avoiding intimacy Table 4

Physical changes domain mean was 1.42 ± 1.46 (mean \pm SD), greater than other domains and the participants were experiencing physical changes affecting quality of life more than any domain.

Sexual changes domain mean \pm SD was 1.21 ± 1.99 and the participants were extremely bothered with the symptoms of this domain. Similarity captured between vasomotor changes and psychomotor changes domain with mean \pm SD values being 0.86 ± 1.28 and 0.87 ± 1.13 respectively.

Factor analysis of the variables performed to show the domains correlations. Eigen value of > 1.4 is considered for factor analysis. 4 factors were identified as shown in the below scree plot.

Factor analysis

Factor analysis was conducted to find out the variable of major concern for the menopausal women affecting the quality of life. Factors were extracted using the common factor method, four factors met the Kaisers rule (Eigen value > 1.4 criterion) with the first factor representing the highest Eigen value of 8.522 Minimal Eigen value (2.225) was found for factor 4. Scree plot for the Eigen values was designed to represent the break in the plot with the remaining components capturing wide variation in the factors. In the plot it was seen 4 factors as significant however the first factor holds major variation.

The factor analysis depicts that increased facial hair is correlated with vasomotor changes like night sweats and sweating. Psychomotor variables feeling anxious and poor memory were closely associated with physical changes and were found to be correlated, So the group is defined as physical and somatic changes (Factor 1) The core psychotic component variables (dissatisfaction with my personal life, accomplishing less than I used to do, being impatient and feeling of wanting to be alone) associated with weight gain leaving hint towards association of psychiatric illness with weight gain. Presence of urinary incontinence and change in appearance of texture of skin are found to be associated with sexual changes domain so the variables are reclassified according to the factor bearing name sexual changes with urinary incontinence.

Factor 1 (Physical and somatic changes)

First factor represented correlation between variables hot flashes of vasomotor domain feeling

anxious, poor memory and feeling depressed of psychomotor changes. Majority of physical changes excepting "increased facial hair" "weight gain" and "changes in appearance and texture of skin" are grouped under factor 1 First factor explained the major portion of variation (29% of total variation 65%). It can be inferred that patients expressing bothering towards hot flashes have experienced anxious feeling and complained about poor memory. Majority of participants experiencing physical changes complained about memory loss as well as anxiousness. Cronbach's alpha for the reliability test was found to be 0.953.

Factor 2 (Sexual changes and changes in appearance of skin)

The second factor composed of decreased sexual desire, vaginal dryness and avoidance of sexual intercourse variables of sexual changes domain and also urinary incontinence, changes in appearance of skin from physical changes domain. This factor accounted for 14 % of the total variance. This gives evidence that while asking regarding sexual changes in post-menopausal stage urinary incontinence and skin texture change should be verified. Cronbach's alpha was found to be 0.856

Factor 3 (Psychological changes with weight gain)

This factor represented purely psychotic component Dissatisfaction with my personal life, accomplishing less than I do, being impatient and wanting to be alone variables align with weight gain of physical changes domain are grouped in factor 3 with 13.4% of variation in total. This factor analysis reveals that while the participants had psychological changes it is evident that weight gain can occur for the participant. Cronbach's alpha was found to be 0.811

Factor 4 (Vasomotor changes with increased facial hair growth)

Night sweats and sweating from vasomotor changes domain and increased facial hair from physical changes domain have represented factor 4 with 7% of total variation. Cronbach's alpha was found to be 0.598.

Discussion

Despite marked advancement in medical services, still the menopausal women face the hurdles in identifying symptoms of menopause being a physiological phenomenon. As the women continue to struggle for acclimatizing to the post-menopausal period with limited resources investment by the countries in identifying, assessing and treating symptoms, this study offers insight in to the significance of shifting paradigm. The estimates highlighted in the study might help in reshaping the infrastructure of existing health care systems in the Jazan region to improve health care provision and access for the post-menopausal women.

The current study showed that approximately half of the participants were from the age group 45-55 years and this is similar to the study done by Binu *et al*¹⁷ in India. More than 2/3rd of population has experienced dysmenorrhea. Although menstrual cycle for the females should be a normal physiological process however dysmenorrhea witnessed by the study population. This result exactly corresponds with the epidemiological study done in Saudi Arabia¹⁸ with 80.1% of females were experiencing dysmenorrhea. Approximately 40% of the study population were married before they reached 17 years as in the country as it was culturally bounded. Two thirds of study population had miscarriages. It was found that 28% of the study population had induced menopause citing varied reasons for induction. This relishes question regarding the intensity of symptoms experienced by the women related to the genitourinary system and it demands increased services of health centers in this arena.

Vasomotor changes like hot flashes night sweats and sweating were felt by almost all women however maximum women have expressed that the symptoms were not causing any issues in daily life. Hot flashes was usually not bothering the women as the temperature in tropical region is extremely hot and women perceive the symptom as an effect of warm and humid climate.¹⁶ The results have similarity with the study done Aloufi *et al* in Saudi Arabia¹⁹.

Approximately 9% of the study population were feeling extremely depressed and the results are similar with study done by Kandys *et al* in Poland²⁰ and in the study done in Saudi Arabia²¹ Insomnia was also found to be bothering women and the same

result achieved by the study done by Alharthi in Riyadh Saudi Arabia²¹.

Muscle and joint pains were found to be extremely bothering in 17% of the study population and it is similar with the study done in Saudi Arabia regarding post-menopausal symptoms and its correlates²² women feeling tired and this is extremely bothering around 12.5% of the total study population. Weight gain was evident and extremely bothering for approx. 8% of study population, however women were mildly bothering about weight gain in 10% of the study subjects. This result was contradicting to the study done by Senthilvel *et al* in Riyadh, Saudi Arabia²³ sever low backache was reported in 15.4%. in a study done in Emirati women it was reported that low backache was prevailing in 50% of menopausal women²⁴.

Physical changes domain found to be more bothering women than other domains as mean of the physical changes domain showed greater value followed by sexual changes domain and it is found to be similar with the studies done by Senthilvel *et al*²³ and Barati *et al*²⁵ and also found similarity in other studies^{26,27} however it is slightly different from the study done in Egypt regarding QOL in post-menopausal women²⁸.

Cronbach`s alpha coefficient of vasomotor, psychomotor and physical domains showed good level of reliability except sexual changes domain achieving acceptable level of reliability. The results are congruent with the factor analysis done by Gazibara *et al*²⁹.

The factor analysis depicts that increased facial hair is correlated with vasomotor changes like night sweats and sweating (Factor 4) In a study done in south India it was found that 70-80% of post-menopausal women were found to have vasomotor and psychological symptoms²³ hot flashes (75.3%) night sweats (58%) was associated with vaginal dryness (30.7%). Psychomotor variables feeling anxious and poor memory were closely associated with physical changes and were found to be correlated, So the group is defined as physical and somatic changes (Factor 1) The core psychotic component variables (dissatisfaction with my personal life, accomplishing less than I used to do, being impatient and feeling of wanting to be alone) associated with weight gain leaving hint towards association of psychiatric illness with weight gain (Factor 3) Presence of urinary incontinence and

change in appearance of texture of skin are found to be associated with sexual changes domain so the variables are reclassified according to the factor bearing name sexual changes with urinary incontinence (Factor 3) Vasomotor domain variables and most of the physical changes' domain variables corresponded with similar factors and the participants responded alike with these variables. factor analysis of the variables of QOL in menopausal women have given the hint about the associations between the variables and lead the way for effective utilization of the questionnaire. Beyond the reporting of symptoms, improvement to the health infrastructure must also be considered to enhance quality of life of post-menopausal women.

Conclusion

Although menopause being physiological phenomenon, it's been cumbersome for the women to acclimatize with the situation. Moreover, significant shift in health care services is required for improving QOL of menopausal women which continue to be overlooked. Building stronger health systems with more robust diagnostic and surveillance related infrastructure, with standardized workflows, are crucial steps to address the burden of the symptoms in menopausal women. Psychomotor changes like depression and physical changes Eg: muscle aches and joint pains, feeling tired, headache and lack of energy, low backache were extremely bothering menopausal women. Factor analysis revealed the association of certain variables and implicit the presence of variable while clinical examination of the menopausal women making it easy. The role of health education and promotion is necessary in improving the quality of life of menopausal women.

Recommendations

The current study gives deep insight to the treating physicians in customizing health care services to be offered in primary health care centres in addressing the specific needs of the menopausal women. In factor analysis few psychomotor variables and sexual changes were associated with physical domains, leaving a lacuna in awareness of treating doctors for QOL of post-menopausal women. In this connection it is recommended that health care services offered at primary health centres to the

menopausal women shall be customized and tailored according to the needs. Developing menopause specific health care programs considering factor analysis can be done by the policy makers. Educational campaigns directing health care providers and menopausal women shall be considered. Substantial percentage of depression in menopausal women warrants psychological support services such as group therapies and counselling sessions at primary health centres. Reduced QOL in menopausal women can be substantiated by physical health programs and diet therapies. Routine screening for early diagnosis of symptoms to identify at risk women can be done at primary health centres. The research findings can be shared for influencing positive change at the level of policy making.

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