Quality of life of Jordanian menopausal working and retired women and its associated factors: a cross-sectional study [version 2; peer review: 3 approved]

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Abstract

Objective

Life expectancy of Jordanian women has increased, indicating that the number of women entering menopause age, during the prime of their working life, will also increase. Therefore, assessments of the quality of life (QoL) of working and retired women and factors associated with overall wellbeing, are essential for the provision of quality services and care.

Method

A cross-sectional study was conducted with 200 Jordanian women between the ages of 45 to 60 years old. The Utian QOL tool was used to assess the quality of life among menopausal women. Multiple regressions were used to determine predictors for QoL for the whole sample and for each group of working and retired women.

Results

The study shows that the total QoL for women was 77.5 ±14.4, with a significant difference (p=.023) in total QoL and the occupational domain (p=.003) between working and retired women. Employed women with fewer chronic diseases and using frequent preventive measures had a higher QoL compared to others.
Conclusion

Working itself might be an important indicator for better a quality of life among menopausal women. Better working conditions and more attention from the health care providers for the menopausal changes and the preventive measures could enhance women's perceived QoL in addition to increasing their productivity.

Keywords
menopausal women, QoL, Jordanian
Introduction

Menopause is a normal transitional period experienced by more than 1.5 million women each year. It is characterized by cessation of the menstrual period and many other disruptive symptoms among which are joint pain, hot flashes, vaginal dryness, insomnia and general tiredness and fatigue. Among other important symptoms are mood changes and depression, which is correlated with estrogen level decrease during the menopausal stage.

Menopausal age is associated with multiple morbidities and chronic diseases, particularly after the age of 60, such as hypertension, diabetes mellitus arthritis, heart diseases, breast cancer, depression, osteoporosis, chronic obstructive pulmonary diseases, and stroke. Menopausal age is also associated with many psychological changes such as memory loss, lack of self-confidence and issues with body image. Therefore, the menopausal stage represents a very important biological milestone in a women’s lifespan; the transition from reproductive to a non-reproductive phase is marked by cessation of menstrual period which may have negative effects on the women’s quality of life (QoL).

The health related QoL was initially defined by WHO based on the concept of subjective perception, cultural context and value scheme. In addition, the objective context is related to specific schemes measured for the studied population. Women’s QoL, which could be related to several important factors such as biological as represented by hypoestrogenism, psychosocial, and cultural perspectives and might differ based on their attitudes toward menopausal changes and age which culturally could be either defined as positive or negative stage.

In a meta-analysis study of 14 studies among Iranian post-menopausal women, it was found that the mean QoL was higher than moderate, while the lowest QoL was reported for the physical and the sexual domain. In one Egyptian study using a menopause specific quality of life instrument (MENQOL), it was found that physical symptoms were perceived as the most affecting to women’s QoL, and had the lowest mean score. Another study in Iran used WHO Quality of Life-BREF (WHOQOL-BREF) and the Menopause Rating Scale (MRS) among premenopausal and postmenopausal women; QoL was found to be negatively correlated with menopausal symptoms at all WHOOL domains (physical health, psychological health and social interactions). Moreover, QoL decreased with increasing the severity of menopausal symptoms. While in Saudi Arabia/Qatif, there were no difference in QoL domains between menopausal and non-menopausal women. Previous studies showed that working women might have better QoL in the menopausal and postmenopausal stages than those unemployed or housewives, as they might have better access to health care, better economic stability, social interaction and empowerment which all might reduce the physical symptoms of menopause. Moreover, women at this stage would be at the age of highly skilled and work role models, despite the difficulties and challenges of the menopausal symptoms. One study measured Serbian women’s QoL using the Utian menopausal QoL scale, which has one specific domain measuring the occupational QoL and found that that employment and economic status were correlated with the occupational domain in QoL. On the other hand menopausal symptoms shows to have adverse effect on work as what was found in UK study.

Jordanian women at menopausal age

Bustami et al. conducted a cross-sectional study to assess factors associated with onset of premature/early menopause among 409 Jordanian women. Findings revealed that the mean age of natural menopause (ANM) is 48.5±5.0, and 2.7% of the women experienced premature menopause (ANM <40) and 7.8% early menopause (ANM 40–44). Smoking was highly associated with early/premature menopause, chronic diseases or combinations of diseases were associated with average (45–52 years) or late menopause (>52 years). BMI, arthritis pain, hot flushes and inconsistent urination were significantly higher in the early and regular menopause than in premenopausal and perimenopausal women.

Jaber et al. (2017) examined patterns and severity of menopausal symptoms among 359 women between the age of 45-65 years. The Arabic version of Menopause Rating Scale (MRS) was used. Results showed that the mean age at menopause was 49.4 years, a total of 105 women had regular menstruation (premenopausal), 49 experienced irregular cycles, and 205 had reached menopause. Women who were still menstruating regularly were found to be 1.5 times more likely to suffer from irritability, while women experiencing irregular cycles but were still menstruating, were found to be 1.63 times more likely to suffer from hot flushes, approximately 2 times more likely to suffer from physical and mental exhaustion and more likely to have sexual problems, vaginal dryness, and joint and muscular discomfort.
Severity of menopausal symptoms in Jordanian women was examined by Gharaibeh et al., (2010) who recruited 350 women between the ages of 45 to 55 years. Authors used the Greene Climacteric Scale to measure the severity of menopausal symptoms. The scale consists of domains of vasomotor symptoms, somatic symptoms, psychological symptoms and sexuality symptoms. Results showed that the mean age of menopause was 48.7 years. A positive association between severity of menopausal symptoms and both educational level and menopausal status; the mean score for severity of menopausal symptoms in perimenopausal women was higher than that for premenopausal women. The scores for the psychological, somatic, vasomotor and sexuality subscales were significantly higher among the perimenopausal, and postmenopausal groups compared to the premenopausal group. Perimenopausal women’s scores for all clusters were higher compared to those of postmenopausal women except for the vasomotor and its symptoms of sweating at nights, and the sexuality and its symptoms of loss of interest in sex, vaginal dryness and pain during intercourse.

An earlier study by Al-Qutob (2001) investigated types and magnitude problems associated with menopausal using exploratory study with 317 of Jordanian women between 18 and 49 years old and 185 women older than 50 years. The mean and median age of onset of menopause were 47.5 and 49 years. Chronic diseases were found to be present among menopausal women such as urinary tract infection, hypertension, diabetes, iron deficiency anemia, reproductive tract prolapse.

In Jordan life expectancy at birth has increased for females to 78.6 in 2020. However the retirement age for women in Jordan is 55 for women where women can ask for early retirement at early age between 50 and 52 years old and can still benefit from the governmental pension.

It is clear from the review of the available studies that there is a gap in studies from Jordan that addressed the quality of life of menopausal working women. Therefore, the study comes to fill the gap by assessing the quality of life of Jordanian working and retired women and its associated factors. The importance of the study comes from the fact that the life expectancy at birth of Jordanian women has increased from 61.98 years in 1971 to 76.45 years in 2019, indicating that the numbers of women in perimenopause, transitional phase and postmenopausal ages will increase and we are expected to see more working, active women involved in the society and enjoy a positive QoL. Findings of this study will help women live a productive life, and health care professionals who can provide supportive services that enhance working women’s QoL.

**Methods**

**Ethics**

The study was approved by the Institutional Review Board (IRB) of Applied Science Private University, Jordan. The informed participant consent was obtained along with the data collection with maintaining participant privacy, confidentiality, and anonymity which was built into the design and the process of the instrument. The cover letter included with the questionnaire stated the study purpose and that the completion and submitting of the questionnaire was indication of consenting to the study.

A cross-sectional study was conducted with 200 Jordanian women during the period from 5th January to 5th March 2021. Sample size was determined using power analysis software for the following parameters: alpha 0.05, power of 95%, moderate effect size 0.3. The needed sample size was 196 participants; 200 questionnaires were completed and submitted. The main inclusion criteria were working and retired women between the age of 45 to 60 years old. The women were excluded if they suffered from any mental disorders since these will impact the QoL. The women were recruited from main authors or research assistants who were employed from the main authors. These women were recruited based on information provided on leaflets, which were distributed in health centers and hospitals. The leaflets included information on the researchers and how to contact them.

Women were recruited using social media and emails. This research utilized Google Forms for data collection; a link was sent by the authors to participants via social media, such as Facebook, Instagram. Google forms is an application in the form of a template or worksheet that can be used independently or together for the purpose of obtaining information. Google form is very easy to understand and use and is available in the Arabic language. The form took 15 minutes to fill out.

**Measurement tool**

The questionnaire consisted of three parts; the demographic part which consisted of seven questions on age in years, employment status (employed, retired), social status, level of education, chronic diseases, menopausal stage (pre, menopausal and postmenopausal), and finally number of children. All variables were categorical except for age and number of children, which were continuous. The second part was the menopausal information and preventive measures,
which consisted of the perceived menopausal health related information, (very good, moderate, know some, not good), sources of menopausal information (social media, family/friend, TV, health personnel) and health promotion and disease prevention measures (BSE, monogram, pap smear, routine checks). The third part was the QoL measures, the study used the Utian QoL developed by Utian et al. (2018). The tool consists of 23 items divided into four main domains: occupation domain (7 items), health domain (7 items), emotional domain (6 items) and sexual domain (3 items). The original tool was validated with a diverse sample of peri- and postmenopausal women using the Short Form-36 (well established inventory of QoL). For the QoL domains, confirmatory factor analyses were conducted with a second sample of 270 women. The original scale is in the English language and showed to be valid and reliable. Cronbach’s alpha for the 23-item scale as a whole was 0.830, occupational domain was 0.83, health domain 0.73, emotional domain 0.64 and for the sexual domain 0.79.

For our study, the scale was translated to the Arabic language using the World Health Organization standard (translation and back translation process). This method consisted of the following steps: forward translation; expert back-translation; pretesting and cognitive interviewing and producing the final version. A panel of three experts in psychiatry, mental health nursing, nursing education and women’s health from Jordan University of Science and Technology and Applied Science University. These experts were chosen based on their experience and were tasked with checking the content validity and the process of translation and back translation. The Arabic version was then pilot tested with 25 menopausal women, which were not included in the sample. These women were recruited by research assistants and have the same inclusion and exclusion criteria of the participants of this study and were not entered into the main data of the project. Results of the pilot testing revealed that it is simple to read, and completion of the tool required approximately 10 minutes. The Cronbach reliability coefficients for the translated version for the total scale was 0.85, it was 0.80 for the occupational domain, 0.69 for the emotional domain, 0.62 for the health domain, and 0.50 for the sexual domain.

Data analysis
Data was analyzed using the SPSS software for Windows version 25 (IBM Corp, USA, RRID:SCR_016479). Descriptive statistics including means, standard deviation, numbers, and frequencies were used to describe the sample characteristics. Means and standard deviation were used to describe each domain and the total QoL. The t-test was used to show the differences in the four domains for working and retired women. Frequencies and percentage were used to describe the response for each item of QoL. Chi-square test was conducted to show the difference in each item for QoL for working and retired women. Multiple regression was conducted to determine predictors for QoL for the whole sample and for each group of working and retired women.

Results
Demographic and health background characteristics
Table 1 presents the demographic characteristics of the sample as the mean age of women was 50.5 ± 4.8 years old. Employed women were 117 (58.5) and retired women were 83 (41.5).

| Characteristics        | N (%)    |
|------------------------|----------|
| **Employment status**  |          |
| Employed               | 117 (58.5) |
| Retired                | 83 (41.5)  |
| **Age (M±SD)**         |          |
| Employed               | (48.1±3.0) |
| Retired                | (53.7±5.0) |
| **Working as**         |          |
| Administrator          | 40 (20.0)  |
| Academic               | 49 (24.5)  |
| Health profession      | 55 (57.5)  |
| Others                 | 58 (28.5)  |
| **Social status**      |          |
| Currently Married      | 174 (87.0) |
| Others                 | 26 (11.5)  |
Table 1. Continued

| Characteristics                  | N (%)  |
|----------------------------------|--------|
| **Level of education**           |        |
| Bachelor and more                | 117 (58.5) |
| Less than Bachelor               | 83 (41.5) |
| **Perceived family income as**   |        |
| Satisfactory                     | 39 (19.5) |
| Somehow satisfactory              | 75 (37.5) |
| Not satisfactory                  | 86 (43.0) |
| **Chronic disease**              |        |
| Hypertension                     | 58 (29.0) |
| Thyroid gland dysfunction        | 20 (10.0) |
| Sever's back pain                | 51 (26.5) |
| Diabetes mellitus                | 33 (16.5) |
| Cardiac diseases                 | 8 (4.0) |
| Varicose veins                   | 29 (14.5) |
| Bowel irritability               | 10 (5.0) |
| Breast cancer/other cancer       | 4 (2.0) |
| None                             | 71 (35.3) |
| **Menopausal stage**             |        |
| premenopausal                    | 68 (34.9) |
| Menopausal                       | 52 (26.0) |
| post-menopausal                  | 80 (40.0) |
| **Number of children**           |        |
| None                             | 12 (6.0) |
| One                              | 6 (3.0) |
| Two                              | 19 (9.5) |
| Three                            | 32 (16.0) |
| Four                             | 57 (37.0) |
| Five and more                    | 74 (37.0) |

M: mean, SD: standard deviation.

**Information and preventive measures**

Women reported acceptable information level regarding the menopausal stages and changes 134 (67%). The majority receive their information from social media, rather than their health care providers, 61 (30%). For preventive measures, self-examination breast checks that were done regularly the previous year, was 63 (31.5) and those who had a Mammogram examination once during the previous year was 40 (30.0). As shown in Table 2.

**Domains of QoL**

The total QoL for women was 77.5 ± 14.4, which is higher than the average total universal quality of life (UQoL). There is a significant difference (p=0.023) in total QoL between working (80.5 ± 12.7) and retired women (73.4 ± 15.7). The highest domain mean score was for the occupational domain 25.9 ± 6.4, followed by the emotional domain 22.3 ± 4.8, and health domain 21.5 ± 5.0, while the lowest mean score was among the sexual domain 7.6 ± 2.6. There was a significant difference in occupational health (p=.003) between working (27.2 ± 5.3) and retired women (24.1 ± 7.4), see Table 3.

**Description of QoL among menopausal women**

Descriptive statistics was used to describe the women's response to the QoL tool. The highest response was for “I am currently experiencing physical discomfort or pain during sexual activity with my partner” 141 (71%), “I think my work benefits society” 129 (65%), and “I'm not happy with my appearance” 124 (62%). However, the lowest score response
was reported for “I do exercise at least 3 times a week” 15 (8%), “I feel like I'm not satisfied with my sex life” 21 (11%), and “I feel in good shape” 38 (19%).

There was a significant difference in QoL between working and retired women in seven questions. Items were, “I am able to control the important things in my life” (p=.024), “I think my work benefits society” (p=.007), “I am satisfied with my romantic life” (p=.007), “I get anxious frequently” (p=.003), “I am proud of my professional achievements” (p=.006), “I keep setting personal goals for myself” (p=.006), and “I keep setting professional goals” (p=.001) (Table 4).

Table 2. Health promotion and information of the sample (N=200).

| Perceived Menopausal health related information | N (%) |
|-----------------------------------------------|-------|
| Very good                                     | 62 (31.0) |
| Moderate                                      | 72 (36.0) |
| Know some information                         | 38 (19.0) |
| Not good need more information                | 28 (14) |

| Sources of menopausal information             |        |
|-----------------------------------------------|--------|
| Social media                                  | 61 (30.0) |
| Family/friends                                | 54 (27.0) |
| TV and audio media                            | 46 (23.0) |
| Health staff                                  | 39 (19.5) |

| Health promotion and disease prevention measures | N (%) |
|--------------------------------------------------|-------|
| Self-breast examination regularly last year      | 63 (31.5) |
| Mammogram examination once last year             | 40 (30.0) |
| Pap smear test once last year (prevention)       | 38 (19.0) |
| Regular gynecology checkup every 6 month         | 31 (15.5) |

Table 3. t-test for differences in Quality-of-Life domains between working and retired women.

| Domain                     | Whole sample | Working (M±SD) | Retired (M±SD) | P value |
|----------------------------|--------------|----------------|----------------|---------|
| Occupational domain        | 25.9±6.4     | 27.2±5.3       | 24.1±7.4       | .003    |
| Health domain              | 21.5±5.0     | 22±5.1         | 20.9±4.9       | .562    |
| Emotional domain           | 22.3±4.8     | 22.9±4.3       | 21.3±5.3       | .082    |
| Sexual domain              | 7.6±2.6      | 8.2±2.3        | 6.9±2.7        | .063    |
| Total QoL                  | 77.5±14.4    | 80.5±12.7      | 73.4±15.7      | .023    |

t-test, p≤.05 based on no-equal variance.

Table 4. Description of QoL for Whole Sample for Menopausal women (N=200).

| Items                                      | Not agree | Neutral | Agree |
|--------------------------------------------|-----------|---------|-------|
| 1. I can control things that are important to me | 27 14%    | 80 40.0% | 93 47% |
| 2. I feel challenged to prove myself and my work | 37 19%    | 75 37.5% | 88 44% |
| 3. I believe my work benefits society      | 20 10%    | 51 25.5% | 129 65% |
| 4. I feel like I’m not content with my sexual life | 131 66% | 48 24.0% | 21 11% |
| 5. I am content with my romantic life       | 78 39%    | 68 34.0% | 54 27% |
| 6. I have gotten a lot of personal appreciation and recognition in my community or at my job | 31 16% | 69 34.5% | 100 50% |
Table 4. Continued

| Items                                                      | Not agree | Neutral | Agree  |
|------------------------------------------------------------|-----------|---------|--------|
| 7. I’m unhappy with my appearance                          | 34 17%    | 42 21.0%| 124 62%|
| 8. I think my diet is not nutritionally sound              | 49 25%    | 89 44.5%| 62 31% |
| 9. I feel able to control my eating behaviors              | 43 22%    | 101 50.5%| 56 28% |
| 10. I do exercise at least 3 times a week                  | 134 67%   | 51 25.5%| 15 8%  |
| 11. My mood is generally depressed                         | 29 15%    | 72 36.0%| 99 50% |
| 12. I frequently experience anxiety                        | 39 20%    | 77 38.5%| 84 42% |
| 13. Most things that happen to me are out of my control    | 35 18%    | 65 32.5%| 100 50%|
| 14. I am content with the frequency of my sexual interaction with my partner | 67 34%    | 70 35.0%| 63 32% |
| 15. I am currently experiencing physical discomfort or pain during sexual activity with my partner | 20 10%    | 39 19.5%| 141 71%|
| 16. I believe I have no control over my physical health    | 32 16%    | 83 41.5%| 85 43% |
| 17. I am proud of my occupational achievements             | 23 12%    | 58 29.0%| 119 60%|
| 18. I consider my life stimulating                         | 24 12%    | 79 39.5%| 97 49% |
| 19. I continue set a new personal goals for myself         | 26 13%    | 69 34.5%| 105 53%|
| 20. I expect that good things will happen in my life       | 23 12%    | 74 37.0%| 103 52%|
| 21. I feel physically well                                 | 26 13%    | 111 55.5%| 63 32% |
| 22. I feel physically ill                                  | 69 35%    | 93 46.5%| 38 19% |
| 23. I continue to set new professional goals               | 39 20%    | 76 38.0%| 85 43% |

Table 5. Predictors of QoL for the whole sample for menopausal women.

|                                              | Unstandardized Coefficients | Standardized Coefficients | t    | Sig.  |
|----------------------------------------------|-----------------------------|---------------------------|------|-------|
|                                              | B                           | Std. Error                | Beta |       |
| 1 (Constant)                                 | 86.645                      | 14.269                    |      |       |
| How old are you                              | -0.070                      | 0.304                     | -0.024| 0.231 | 0.818 |
| What is your employment status now?          | -5.124                      | 2.552                     | -0.175| -2.007| 0.046 |
| What is the nature of your business          | -0.439                      | 0.749                     | -0.047| -0.587| 0.558 |
| number of chronic diseases                   | -5.990                      | 2.043                     | -0.198| -2.932| 0.004 |
| What is your marital status?                 | -0.069                      | 1.521                     | -0.003| -0.046| 0.964 |
| What is your education level?                | 1.298                       | 1.088                     | 0.092| 1.194 | 0.234 |
| Do you think your monthly income is sufficient for the requirements of your life/ the lives of those you care about? | 1.020                       | 1.315                     | 0.052| 0.776 | 0.439 |
| How do you assess your situation now at any stage? | 0.937                       | 1.591                     | 0.056| 0.589 | 0.557 |
| the number of your children                  | 0.215                       | 0.916                     | 0.018| 0.235 | 0.814 |
| The number of your loads                     | 0.426                       | 1.261                     | 0.026| 0.338 | 0.736 |
| What are your sources of information about the age of safety (you can choose more than one answer)? | 0.434                       | 0.922                     | 0.031| 0.471 | 0.638 |
| Using preventive measures                    | 5.122                       | 2.006                     | 0.177| 2.553 | 0.011 |
| Did you use hormonal contraceptives during your reproductive life? | 1.084                       | 1.945                     | 0.038| 0.557 | 0.578 |

*Dependent variable: Total QoL.*
Predictors of QoL for whole sample of menopausal women

Multiple regressions test was conducted to determine the predictors of QoL among menopausal women. The model was significant (F= 3.5, p<.001). This means that many factors predicted QoL among women; these were employment status/currently employed (B=.175, p=.046, r²=.34), number of chronic diseases (B=-.198, p=.004, r²=-.260), and using preventive measures (B=.177, p=.011, r²=.222). Employed women with fewer chronic diseases and using frequent preventive measures had higher QoL compared to others. The three variables explained 54% in the variance of QoL. See Table 5.

Predictors of QoL for working and retired menopausal women

Multiple regression tests were conducted to determine the predictors of QoL among working and retired menopausal women. These models were significant for working women (F=4.45, p=.001) and retired women (F=6.52, p<.001). The only significant predictors for QoL for working women were number of chronic diseases (B=-.198, p=.004, r²=-.260) and using preventive measures (B=.177, p=.011, r²=.222). Employed women with fewer chronic diseases and using frequent preventive measures had higher QoL compared to others. The three variables explained 54% in the variance of QoL. See Table 5.

Table 6. Predictors of QoL for working and retired menopausal women.

|                | Unstandardized coefficients | Standardized coefficients | t     | Sig. |
|----------------|-----------------------------|---------------------------|-------|------|
|                | B                           | Std. Error                | Beta  |      |
| Working (Constant) | 31.342                      | 11.026                    |       | 2.842| 0.005|
| How old are you  | -0.048                      | 0.224                     | -0.028| -0.216| 0.829|
| Education       | -1.475                      | 1.222                     | -0.132| -1.206| 0.230|
| number of Chronic diseases | -6.778                    | 2.415                     | -0.264| -2.806| 0.006|
| Income          | 1.444                       | 0.685                     | 0.204 | 2.109| 0.037|
| Menopausal status| 0.771                       | 0.813                     | 0.111 | 0.948| 0.345|
| Number of children | -0.290                     | 0.478                     | -0.066| -0.607| 0.545|
| Number of pregnancies | -0.141                    | 0.659                     | -0.023| -0.214| 0.831|
| Menopause information | -0.226                    | 0.571                     | -0.040| -0.396| 0.693|
| Source of information | 1.638                       | 1.059                     | 0.151 | 1.547| 0.125|
| preventive measures | 5.086                       | 2.441                     | 0.196 | 2.084| 0.040|
| Retired (Constant) | 27.760                      | 11.331                    |       | 2.450| 0.017|
| How old are you  | -0.154                      | 0.218                     | -0.104| -0.708| 0.481|
| Education       | 11.904                      | 3.749                     | 0.352 | 3.176| 0.002|
| number of Chronic diseases | -2.706                    | 1.847                     | -0.158| -1.465| 0.147|
| Income          | 0.075                       | 1.132                     | 0.007 | 0.067| 0.947|
| Menopausal status| 5.852                       | 2.818                     | 0.298 | 2.077| 0.041|
| Number of children | 1.311                       | 0.879                     | 0.191 | 1.493| 0.140|
| Number of pregnancies | -0.668                    | 1.090                     | -0.081| -0.612| 0.542|
| Menopause information | -1.181                     | 0.811                     | -0.175| -1.455| 0.150|
| Source of information | 1.034                       | 0.719                     | 0.150 | 1.437| 0.155|
| preventive measures | 6.834                       | 3.351                     | 0.217 | 2.039| 0.045|

Predictors of QoL for whole sample of menopausal women

Our study showed that the total mean score for quality of life of working and retired women was more than the UQoL average (77.5±14.4). The highest score was reported for the occupational domain, followed by the emotional domain, with the lowest being among the sexual domains.
There were significant differences between working and retired women in each of the occupational domains and the total QoL scores. These differences could be to domain questions that showed a significant difference between the two groups of women related to their work benefits to society (p=0.007), being proud of their professional achievements (p=0.001), setting personal goals for themselves (p=0.006), and in setting professional goals (p=0.001). This suggests that working serves as a good source of self-satisfaction, planning future goals, sense of achievements and recognition. This is consistent with that found in China study, which assessed the QoL between retired and working people, to find out that working has a positive correlation with both social interactions, family interactions and leisure time. As retired women may lack the sense of achievements and may feel that their professional goals and careers have ended. Furthermore, retired women usually face changes in socioeconomic status and lifestyle. Moreover, they might lose the daily socialization with people, work interactions, and challenges of their work environment, which all could enhance the feelings of well-being. This reflects the findings of other study in USA, on the effect of retirement on ones’ QoL.

Our study showed no significant differences between working and retired women in the emotional domain. This might be related to the fact that the average age of the study sample of retired women is 53 years old, by which at this age Jordanian women have many responsibilities towards their family needs, through the role of grandmother as well as caring for their elderly parents and in-laws. These responsibilities might give them a great satisfactory feeling and emotional stability that can minimize the bad feelings of retirement, in addition to filling their time with many other responsibilities than work. In addition, women going through menopause are likely preoccupied with the menopausal symptoms such as hot flashes which might be a priority issue.

The predictors for total QoL among menopausal women in this study were currently working with few chronic diseases, good income, and using frequent preventive measures; these factors explained better QoL compared to others (p=0.046, 0.004, 0.011 respectively). One study in Australia that reviewed the relationship between menopausal age and chronic disease and comorbidity, found a strong negative relationship between QoL and chronic diseases. It is expected that chronic diseases in general had a negative effect on QoL looking at the overall complaints, limited physical activity and the overall psychological effect. In one early study conducted in Jordan, the majority of menopausal women complained of chronic diseases, while only 29% reported that they are feeling “good”. Working women appear to be more satisfied socially and have a more meaningful life, and responsibilities. As well as their time being filled with achieving their career plans and objectives, reported that Jordanian working women have better leisure time since they have better income. Preventive measures like self-check breast examination, pap smear tests, mammograms among and regular gynecological check ups could be all widely affected by women’s level of education, income and availability of services, which was found in different cultures and studies. Working women could have a better opportunity to conduct any of the preventive measures than others; the availability of health insurance, better access to health care services and higher awareness of the importance of conducting preventive measures. Menopausal QoL was not directly connected previously with using preventive measures, rather it related to health-related issues, problems and disease prevention and how those could affect the overall health of aging women, which was discussed by Pertynska-Marczewska & Pertyński.

Income satisfaction reflects women’s access to health services and follow up on health preventive measures as well as a better sense of high self-esteem and empowerment, which was discussed previously with several previous studies. Women’s employment would increase the overall family income and empowerment, one study among Jordanian women found that women with higher family income reported less severe menopausal symptoms compared to those with low family income.

Our study shows that retired women with higher education, who reached postmenopausal, and used preventive measures had a higher QoL compared to other women. Higher educated women have better opportunities and more understanding of the symptoms of menopausal changes, which makes the adaptation a lot easier and more acceptable. A study conducted in Iran found positive correlations between levels of education and occupational status, with better scores of psychological symptoms, they found that women might have a better understanding of menopausal symptoms and better awareness related to the psychological and physiological changes of the menopause. Moreover, women in post-menopausal stage reported less severe symptoms compared with pre and peri-menopausal stage. Studies among Jordanian women found that the severity of the menopausal symptoms is positively associated with the women’s level of education, and the menopausal stage. On the other hand, Jordanian women have positive attitudes towards menopause in that they would have more time to enjoy their Ramadan fasting without any interruptions and pray regularly. Moreover, Jordanian women appreciate that transitional period since it gives them a status of wise women, which would help them to participate in decision making and empower them. A higher level of education positively affects women’s health promotion and health prevention behaviors.
Our study shows that only 19.5% of women received their information about menopausal changes from health care professionals, even though women in this period require more information about the changes in the physiological and psychological status in order to better cope with them.49

**Conclusion**

In summary, working menopausal women have a significantly better QoL than retired women among both total QoL and among the occupational domains. Major predictors for working women for better QoL were employment, fewer chronic diseases and frequent use of preventive measures. While significant predictors for better QoL among retired women were higher level of education, being in the postmenopausal stage, and using preventive measures.

**Implications**

Health care providers can pay more attention towards the menopausal changes, chronic disease health promotion and disease prevention for working women, to increase their work productivity and achievements. Policy makers should pay more attention towards improving the working conditions that support the transitional period for menopause, to increase women’s productivity and improve their health status during these important life stages.

Increasing the Jordanian women life expectancy would suggest adding more working years for women, as retired women seem to perceive a lower QoL than working women, therefore this study’s results might be used as a valid indicator for revisiting the retirement age law.

It’s recommended for further research on women’s perception of the best retirement age and the influence of their menopausal stage on their work productivity.

**Limitations**

This study has limitations that rise from the convenience nonprobability sample that limited the generalizability of the findings. The fact that the study used Google Form for data collection has eliminated women with poor reading comprehension and those who are not familiar with the use of technology or do not have access to computers or mobiles. Findings are also limited to the use of a translated scale developed for women from western cultures, which may not have captured the cultural aspects of the QoL of Jordanian women.

**Data availability**

**Underlying data**

Figshare: Data Set Menopause Women.xlsx. https://doi.org/10.6084/m9.figshare.20822032.v2.50

This project contains the following underlying data:

- data set menopause.xlsx
- menopause study questionnaire.docx

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

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Open Peer Review

Current Peer Review Status: ✔️ ✔️ ✔️

Version 2

Reviewer Report 01 August 2024

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✔️ Harmeet Kaur Kang
Chitkara University, Punjab, India

I have gone through the revised manuscript. The manuscript has been revised as per my comments in the previous review report. The revised version of the paper is approved.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Women Health, Cardiovascular disease prevention

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 14 March 2024

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✔️ Camille Cronin
University of Essex, Colchester, England, UK

I am happy with the amendments.

Competing Interests: No competing interests were disclosed.
Reviewer Expertise: Women's health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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Version 1

Reviewer Report 27 May 2024

https://doi.org/10.5256/f1000research.138240.r223920

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Zalikha Al-Marzouqi
Oman College of Health Sciences, North Batinah Branch, Oman

Title: I think the title is good and reflecting of the study.

Abstract: Good, just in 'Method' add Cronbach's alpha that you did for your tool in arabic version. Also in 'Results', authors can add some brief information about the findings related to factors associated with overall wellbeing.

Keywords: Good.

Introduction: the authors wrote a clear introduction and tough recent studies in literature review. The authors also identified the knowledge gap and the significance of the study.

Methods: the selected design is matching the aim and objective of the study and it is appropriate. Inclusion and exclusion criteria identified, which is good. The tool used was explained in detail. However, the authors need to slightly revise the language and grammar to make it more readable.

Dependent variable, the authors should make sure that they mention dependent variables of this study.

Independent variables, the authors should make sure that they mention independent variables of this study.

Tool and its validity: Clear and good.

Data analysis: good and clear, just to add 2 sentences about data management / control.

Results: regarding the descriptive statistics, it is good and clear. However, I am not a statistician to understand other type of statistics. Thus I can not provide comments.
Discussion: good and clear, it covered different angles of the results.

Conclusion: no comments, it supports the results of this study.

Is the work clearly and accurately presented and does it cite the current literature? 
Yes

Is the study design appropriate and is the work technically sound? 
Yes

Are sufficient details of methods and analysis provided to allow replication by others? 
Yes

If applicable, is the statistical analysis and its interpretation appropriate? 
I cannot comment. A qualified statistician is required.

Are all the source data underlying the results available to ensure full reproducibility? 
Yes

Are the conclusions drawn adequately supported by the results? 
Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Maternal Health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 21 November 2023

https://doi.org/10.5256/f1000research.138240.r216514

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Harmeet Kaur Kang

Chitkara University, Punjab, India

**General Comments:** The topic of the paper is deemed important and relevant, focusing on Menopausal Quality of Life (QOL). However, there are notable concerns regarding grammar, sentence formation, and the overall association of Menopausal QOL with menopausal symptoms. The paper lacks an exploration of this critical relationship, which is a significant gap in the study.
Specific Comments:
Menopausal QOL and Symptoms: The primary outcome variable, Menopausal Quality of Life, is highlighted, but the authors have not adequately addressed the association between Menopausal QOL and menopausal symptoms. This gap diminishes the overall impact of the study, and it is recommended that the authors explore and discuss this relationship in more detail.

Tools and Content Validity: The initial sections of the tools were reportedly self-prepared by the authors; however, there is a lack of information regarding the content validity of these tools. It is essential to provide evidence of the validity of the tools used in the study to ensure the reliability of the results.

Statistical Tests: A thorough review by a statistician is recommended, particularly for certain tables that appear to lack coherence. The application of statistical tests should be carefully examined to ensure accuracy and relevance. Any discrepancies or inconsistencies in the tables need to be addressed and corrected.

Strengthening the Discussion Section: The discussion section could be strengthened by providing a more comprehensive analysis of the global perspective on menopausal quality of life. The authors have mainly focused on the Jordanian perspective, neglecting a broader view that could enhance the generalizability and applicability of the study findings.

Grammar and Sentence Formation: The manuscript requires careful proofreading for grammar and sentence formation. Ensuring clarity in expression and adherence to grammatical rules will significantly enhance the readability of the paper.

In conclusion, addressing these concerns will contribute to the overall improvement of the paper. Emphasizing the association between Menopausal QOL and menopausal symptoms, validating the tools used, reviewing statistical tests, broadening the global perspective, and enhancing the clarity of language will collectively elevate the quality of the research article.

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Partly

Are all the source data underlying the results available to ensure full reproducibility?
Partly

Are the conclusions drawn adequately supported by the results?
Partly
Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Women Health, Cardiovascular disease prevention

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 30 Jan 2024
Enas Assaf

Comments from the reviewer
Response

**General Comments:** The topic of the paper is deemed important and relevant, focusing on Menopausal Quality of Life (QOL). However, there are notable concerns regarding grammar, sentence formation, and the overall association of Menopausal QOL with menopausal symptoms. The paper lacks an exploration of this critical relationship, which is a significant gap in the study

*Thank you very much for your review and your comments. Regarding the menopausal symptoms and its association, this was part of the study but since the main goal was studying the difference between retired and working menopausal women, symptoms show no significance. Therefore, we did not elaborate on that and did not focus on the symptoms rather than the overall quality domains, which would in itself, reflect the symptoms in each of the quality of life studied domain.*

*English editing was considered and checked. Thank you.*

**Tools and Content Validity:** The initial sections of the tools were reportedly self-prepared by the authors; however, there is a lack of information regarding the content validity of these tools. It is essential to provide evidence of the validity of the tools used in the study to ensure the reliability of the results.

*Thank you, content validity was checked in the tool and highlighted in the paper with yellow*

**Statistical Tests:** A thorough review by a statistician is recommended, particularly for certain tables that appear to lack coherence. The application of statistical tests should be carefully examined to ensure accuracy and relevance. Any discrepancies or inconsistencies in the tables need to be addressed and corrected

*All the statistics were carried out by Expert in statistics*

**Strengthening the Discussion Section:** The discussion section could be strengthened by providing a more comprehensive analysis of the global perspective on menopausal quality of life. The authors have mainly focused on the Jordanian perspective, neglecting a broader view that could enhance the generalizability and applicability of the study findings.
Thank you for your comments, in the discussion each point were analyzed based on both Jordanian and supported by global perspectives taking several international studies from different culture, among which some were highlighted in the text.

**Competing Interests:** none declared

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**Reviewer Report 07 September 2023**

https://doi.org/10.5256/f1000research.138240.r191964

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Camille Cronin
University of Essex, Colchester, England, UK

A cross-sectional study of 200 Jordanian women aged 45-60 years using a QOL tool to assess quality of life in menopausal women.

A range of literature is used and some of which is dated, some may correspond to the tools used but other literature should have been more up to date and more international. Menopause is a global issue.

The study design look appropriate but I imagine that with the world count the author has had to make a decision to cut certain sections out and this I feel has affected the presentation of tool, and what stats have been chosen to present. Perhaps the author(s) need to be more specific in what they what tp present with corresponding literature to support.

I am not a statistician and unable to comments on the other points.

I do feel this is a contemporary issue to be reporting and this paper is looking at working women and those moving to retirement. I feel again this is not reflective globally as the age of working women is growing and working past the age of 60. In Jordan this may be different but this needs to be contextualised - what is the average retirement age and so on.

I think the discussion session is short and does not correspond with the amount tot data - perhaps the author has been limited by the word count. Limitations have been reported which is also good.

I do feel the paper is limited in the literature which I mentioned above.
Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
I cannot comment. A qualified statistician is required.

Are all the source data underlying the results available to ensure full reproducibility?
No

Are the conclusions drawn adequately supported by the results?
No

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Women's health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

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**Author Response 30 Jan 2024**

Enas Assaf

Comments

response

A range of literature is used and some of which is dated, some may correspond to the tools used but other literature should have been more up to date and more international. Menopause is a global issue.

**Thank you for your comments, the following literature is added in the introduction:**

**The introduction section has been revised and updated literature was added as follows:**

*This was added in the introduction “Menopausal age is also associated with many psychological changes such as memory loss, lack of self-confidence and issues with body image” and the reference added*

1. Camille Cronin, Catherine Hungerford & Rhonda Lynne Wilson (2021) Using Digital Health Technologies to Manage the Psychosocial Symptoms of Menopause in the
Workplace: A Narrative Literature Review, Issues in Mental Health Nursing, 42:6, 541-548, DOI: 10.1080/01612840.2020.1827101. (ref. no.....)

This was added in the introduction

"Moreover, women at this stage would be at the age of highly skilled and work role model, despite the difficulties and challenges of the menopausal symptoms“ reference:

1. House of Commons Women and Equalities Committee, Menopause and the workplace, First Report of Session 2022-23. Available at chrome-extension://efaidnbmnnibpcajpcgicnlefenndmadj/https://www.elaweb.org.uk/sites/default/files/docs/HC%2091%20-%20Menopause%20and%20the%20workplace%20-%20EMBARGO.pdf. acceded on September 12, 2023.

Another recent systemic review study ref was cited as no ( ) related to menopausal working women and QoL.

1. S. Theis, S. J. Baumgartner, H. Janka, A. Kolokythas, C. Skala & P. Stute (2023) Quality of life in menopausal women in the workplace – a systematic review, Climacteric, 26:2, 80-87, DOI: 10.1080/13697137.2022.2158729.

The following studies were added in the introduction numbered as (..... )

1. Krishnapriya, P. B., et al. "Assess the quality of life among postmenopausal women." International Journal of Advances in Nursing Management (2023).

2. Studies in Saud Arabia ( ref no)

Aljarudi, S., Al-Jumah, H. and Al-Jumah, A. (2023) Evaluating the around and after Menopausal Symptoms and Personal Perception of Quality of Life among Women in Qatif, Saudi Arabia, Attending the Hospital and PHCs. Open Journal of Obstetrics and Gynecology, 13, 280-290. doi: 10.4236/ojog.2023.132029.

1. We added the following sentence highlighted in red as “On the other hand menopausal symptoms shows to have adverse effect on work as what was found in UK study” line

Ref

Faubion, S. S., Enders, F., Hedges, M. S., Chaudhry, R., Kling, J. M., Shufelt, C. L., ... & Kapoor, E. (2023, June). Impact of menopause symptoms on women in the workplace. In Mayo Clinic Proceedings (Vol. 98, No. 6, pp. 833-845). Elsevier.

The study design look appropriate but I imagine that with the world count the author has had to make a decision to cut certain sections out and this I feel has affected the presentation of tool, and what stats have been chosen to present. Perhaps the author(s) need to be more specific in what they what tp present with corresponding literature to support
Really appreciated, the cutting will impact the accuracy of the paper

I am not a statistician and unable to comments on the other points.

Well respect

I do feel this is a contemporary issue to be reporting and this paper is looking at working women and those moving to retirement. I feel again this is not reflective globally as the age of working women is growing and working past the age of 60. In Jordan this may be different but this needs to be contextualised - what is the average retirement age and so on.

Thank you for the note, this comment was well considered by adding the following in the introduction under the Jordan section

In Jordan life expectancy at birth had increased for females to 78.6 in 2020 insert here (worldometer, 2021). However the retirement age for women in Jordan is 55 for women where women can ask for early retirement at early age between 50 and 52 years old and can still benefit from the governmental pension insert ref here (BAKER, 2018). Ref: to be added in the article

BAKER, N. (2018). What are the retirement ages around the world? https://www.sbs.com.au/news/what-are-the-retirement-ages-around-the-world#:~:text=Retirement%20ages%2C%20or%20the%20age%20when%20some%20sort,years%20for%20men%20and%2063.7%20years%20for%20women

worldometer. (2021). world life expectancy at birth
https://www.worldometers.info/demographics/life-expectancy/#countries-ranked-by-life-expectancy

I think the discussion session is short and does not correspond with the amount tot data - perhaps the author has been limited by the word count.

Thank you for the note, we actually considered discussing the main points and results looking to the considered limitation

Limitations have been reported which is also good.

Thank you

I do feel the paper is limited in the literature which I mentioned above. Thank you considered and updated introduction section

Are all the source data underlying the results available to ensure full reproducibility?

Data sources are available in the reference section highlighted
Competing Interests: None declared

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