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ORIGINAL ARTICLE

Effectiveness of Community-Based Educational Package on Stress Levels Among Postmenopausal Women

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Abstract

Background/Aim: Postmenopausal women often face increased stress due to various physiological and psychological changes. This study aimed to analyse how effectively a community-based educational package (CBEP) reduces stress among postmenopausal women.

Methods: A total of 200 postmenopausal women were assigned to either a control group (n = 100) or an experimental group (n = 100). The control group received routine care, while the experimental group engaged in a CBEP aimed at stress management. Stress levels were assessed before and after the intervention using a validated assessment tool and independent t-tests were used to compare the stress levels between the two groups and to evaluate changes in stress levels.

Results: The pre-test stress levels showed no significant difference between the control and experimental groups (t = 1.184, p = 0.238), indicating similar stress levels at the start. However, post-test results demonstrated a significant reduction in stress for the experimental group (mean: 13.810 ± 2.339) compared to the control group (mean = 20.160 ± 3.281) (t = 15.762, p = 0.0001). Additionally, the gain in stress levels was significantly lower in the experimental group (0.150 ± 1.149) compared to the control group (6.000 ± 3.247) (t = 16.982, p = 0.0001).

Conclusion: The results indicate that the CBEP effectively reduced stress levels among postmenopausal women, proving its efficacy as a non-pharmacological intervention. These findings advocate for the adoption of educational programs for managing stress in postmenopausal women and emphasise the need for further research to enhance these interventions for long-term efficacy.

Key words: Postmenopause; Stress; Psychosocial intervention; Statistics; Data analysis.

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Introduction

Menstruation terminates at the menopause, an important life period characterised by a range of physiological and psychological changes.[1] Hot flashes, insomnia, mood swings and nocturnal sweats are all signs of menopause.[2] The typical age range that is affected is 45 to 55.[3]

A woman experiences a period of transition in her life known as postmenopause, which is linked to a number of psychological and physical changes.[4] Stress is one important issue that can affect postmenopausal women's well-being.[5]

After menopause, women live for about one-third of their lifetimes.[6] The primary goal of the community-based educational package (CBEP) intervention is to support people in leading a healthy and active life after menopause.

Several factors, including lifestyle, psychological state, lack of knowledge, negative attitude, inadequate coping mechanisms and being in a dyadic relationship, can affect a woman's postmenopausal period, which is a prime phase of her life. These factors also determine the severity of symptoms and quality of life.[7-10]

A cross-sectional study was carried out by Sarveswaran et al to evaluate postmenopausal women's perceptions of stress and its determinants. More than 25 % of the individuals in the study reported having high or extremely high levels of stress. Stress levels have been linked to variables like drug addiction, parity, education and religion.[11]

Suganthy and Balasubramanian carried out a cross-sectional study to investigate postmenopausal women's stress levels. The majority of participants expressed high levels of stress, highlighting the necessity of addressing the stress that postmenopausal women experience. Healthcare providers should consider implementing interventions that target stress management and provide psychosocial support to mitigate the negative effects of stress during the postmenopausal phase. Further longitudinal studies are needed to explore the long-term implications of stress and develop tailored interventions for this population.[12]

Joseph studied postmenopausal women to determine whether stress and blood pressure were correlated. The results showed a substantial relationship between the type of menopause and stress, as well as a modest correlation between blood pressure and stress levels.[13]

Women from poorer socioeconomic backgrounds typically have lower levels of education and employment.[14] As a result, stressful life events caused an earlier menopausal age. Menopause age is also influenced by factors such as low haemoglobin and protein levels, pathological disorders such as bacterial, fungal and viral infections and poor health status. The study revealed that women were stressed with conditions like headache, back pain, hot flushes, cold spells, dizziness and depression and crying spells, but they did not relate these symptoms to menopause. Some women were absolutely unaware of menopausal transition, which is stressful.[15]

In India, going through menopause is not only challenging for women, but it is also virtually unheard of among the general population.[16] Menopause and other women's health issues are hardly ever mentioned and not all cultures have had extensive conversations about menopause. Despite the fact that rural women experience the menopausal transition with great difficulty, they are not provided with a forum to address menopausal concerns, difficulties throughout the transition, or how to manage them. When dealing with huge numbers of women in India who have very low levels of education, ignorance regarding the nature of menopausal difficulties can often lead women to believe that they are ill.[17]

Indian women, particularly those residing in rural regions, have cultural barriers that prevent them from inquiring about any aspect of their bodies, particularly their post-reproductive health, which they believe does not require attention. Menopausal women in India need to be made aware of menopausal issues and resources for those in need should be made available.[18] Research has indicated that a high stress level is detrimental to postmenopausal women's quality of life. Gaining an understanding of the menopause and its symptoms is essential for menopausal women to improve their stress levels and cultivate an optimistic outlook. Regretfully, research suggests that women lack awareness regarding menopause and associated symptoms in general.

Rural residents' apparent ignorance of menopausal health issues is a serious subject that has already been addressed in the literature.[19-24] Major gaps in the knowledge, attitudes and behaviours of North Indian rural women in the state of Punjab, India, were also brought to light by the study. The literature has also documented a documented prevalence of elevated stress levels in women during the postmenopausal era.[25-30]

Several instruments and techniques have been employed in earlier research to evaluate women's knowledge on menopause.[31-34] In the current investigation, the most widely used and favoured instruments were employed. The usual and most typical age range for women on the Indian subcontinent to go through menopause is between 40-50 years of age.[35-37]

After implementing a CBEP, especially its yoga component, postmenopausal women report experiencing fewer and milder hot flashes. Research indicates that a greater degree of physical exercise is associated with a decrease in hot flashes. Menopausal symptoms can be alleviated by CBEP's yoga practices, which include *Shanthiasana, Dhyana, Sheethali Pranayama* and *Nadishuddhi Pranayama*.[38] These techniques use body cooling and timed respiration to reduce tension. These techniques also support general relaxation and well-being by managing sexual dysfunction, bladder problems and heart discomfort. Additionally, by relaxing the mind and easing tense muscles and joints, yoga poses including *Shanthiasana, Makarasana* and *Balasana* enhance sleep. Regular yoga practice highlights the many benefits of yoga for postmenopausal women, including stress reduction, emotional stability and urinary control maintenance. In postmenopausal women, yoga practice also lowers cortisol levels and improves quality of life. Overall, the benefits of practicing yoga were noticeably greater than those of exercising.[22, 39]

There are few studies on the CBEP for treating women's postmenopausal symptoms and none have been conducted on a thorough treatment of postmenopausal symptoms in rural Punjab, India. This study aimed to evaluate the impact of the CBEP on postmenopausal women's stress levels living in rural Mohali, Punjab.

Methods

Participants in the study were postmenopausal women from four rural villages in Punjab: Khanpur, Badali, Sante Majra and Pir Sohana. The study's inclusion criteria encompassed women between the 40–60-year age who had gone through menopause. They had reached menopause, were open to participating in the research and could communicate in Punjabi. Women, who had undergone a hysterectomy, experienced an atypical menopause, were on medicine such as anxiolytics or antidepressants, or had major illnesses were not included in the study. The participants were divided in experimental group and control group, represented by the letters E(R) and C(R).

Instruments

The participant's age, religion, educational background and occupation were recorded, as well as the family's monthly income, kind of family, eating habits, sources of health information, menopausal age in years and time since menopause age in years.

Sheldon Cohen's Perceived Stress Scale (PSS), as the most widely used tool for assessing how much stress is felt was used. Ten measures on a scale from 0 to 4 that measure menopausal women's stress (0 - Never, 1 - Almost never, 2 - Sometimes, 3 - Fairly often and 4 - Very often) were used. Using the supplied scale, the participants were asked to indicate the degree of stress. Using the test-retest approach, the tool's dependability was determined and a reliability coefficient of 0.80 was determined to be statistically significant. The overall stress level score was between 0 to 40, with scores between 0 and 13 representing mild stress, 14 to 26 representing moderate stress and 27 to 40 representing high stress.

Protocol

Day 1: The PSS and socio-demographic profile tool were used to administer the pre-test to groups E(R) and C(R) and data was gathered through interviews.

After a comprehensive study of the literature and content validation by specialists in the fields of dietetics, yoga and meditation, social and preventive medicine, obstetrics and nursing, a CBEP was created. It describes the training of physical, sexual and psychological care that postmenopausal women received *via* booklets and flashcards. Physical care consisted of diet, exercise, hormone replacement therapy, calcium and vitamin D supplements and other pharmaceuticals. Intimacy and avoidance of vaginal dryness were two aspects of sexual care for postmenopausal women. To preserve mental health, psychological care entailed yoga, meditation and emotional support.

Given that the participants spoke Punjabi, the CBEP was first created in English and then translated into Punjabi. The content and linguistic validity of CBEP were verified through the use of back-translation and translation techniques.

Day 2: The participants in E(R) received the CBEP for duration of sixty minutes, during which the

authors addressed any uncertainties that arose. The subjects in C(R) did not receive any intervention.

Day 30 post-testing was done using the identical PSS for groups E(R) and C(R).

Data analysis

Statistical Package for the Social Sciences (SPSS) version 16 was used to examine the data. Frequency tables, mean and standard deviation (SD) were a few of the descriptive statistics that were used to examine the participant characteristics.[40] The paired and independent t-tests were used for quantitative data, while the t-test was used for group comparison in qualitative elements. The menopausal stress level scores for the intervention and control groups were compared using the t-test. P-value less than 0.05 was considered statistically significant.

Results

The sample size for this study consisted of 200 postmenopausal women. There were 100 women in the control group and 100 in the experimental group.

Table 1 shows that the stress score was 19.81 ± 3.093 and 20.31 ± 2.879 during the pre-testing phase in the experimental and the control group, respectively. Women in the experimental and control groups had roughly the same mean stress score. There was no discernible difference in the stress scores of the control and experimental groups throughout the pre-testing phase (t = 1.184, p = 0.238).

In the post-testing phase, the experimental group's stress score was 13.81 ± 2.339, while the control group's stress score was 20.16 ± 3.281. Women in the experimental group had a lower mean stress score than those in the control group (t = 15.762, p = 0.0001). It indicates that there was a highly significant difference in stress levels between the experimental and control groups at the post-testing period.

Table 1: Sheldon Cohen's Perceived Stress Scale (PSS) score among post-menopausal women

Group	N	Mean	SD	t-value	p-value
Pre-test					
Control	100	20.31	2.873	1.184	0.2380
Experiment	100	19.81	3.093		
Post-test					
Control	100	20.16	3.281	15.762	0.0001**
Experiment	100	13.81	2.339		

*Experimental group received Community-Based Educational Package (CBEP); SD: standard deviation; **: p < 0.001;*

Table 2: Gain in stress score over time among post-menopausal women

Stress	N	Mean	SD	t-value	p-value
Control group	100	6.00	3.247	16.982	0.0001**
Experimental group	100	0.15	1.149		

*Experimental group received Community-Based Educational Package (CBEP); SD: standard deviation; **: p < 0.001;*

The results presented in Table 2 indicate that the gain stress score was 0.150 ± 1.149 in the experimental group, while in the control group it was 6.0 ± 3.247. Women in the experimental group had a significantly lower mean gain stress score than those in the control group (t = 16.982, p = 0.0001).

Discussion

The results of this study illustrate the effectiveness of a CBEP in lowering stress levels among postmenopausal women. Statistical analysis revealed that pre-test stress levels were similar between the control and experimental groups, indicating that both groups began with comparable stress levels. However, post-test stress levels showed a significant reduction in the experimental group compared to the control group. Specifically, the mean post-test stress level in the experimental group was considerably lower than in the control group, demonstrating the educational package's effectiveness.

Additionally, the gain in stress levels further supported the intervention's efficacy. The control group exhibited a higher mean gain in stress levels, while the experimental group showed a minimal gain (0.150). This minimal gain in the experimental group indicates that the educational package not only initially reduced stress but also helped maintain lower stress levels over time.

Supporting this study, Rodrigo et al conducted a randomised controlled trial on a comprehensive

lifestyle intervention, including stress management education, for postmenopausal women.[41] They found a significant reduction in stress levels ($p < 0.001$) and improved overall well-being among participants who received the intervention compared to the control group. Similarly, Schmitz et al examined the impact of a mindfulness-based stress reduction (MBSR) program on postmenopausal women and reported a significant decrease in perceived stress scores ($p < 0.01$) among participants.[42] These findings are consistent with the current study, suggesting that structured educational programs, whether focused on mindfulness or general stress management, can effectively reduce stress among postmenopausal women.

Ghazanfarpour et al conducted a meta-analysis on the efficacy of various non-pharmacological interventions for menopausal symptoms, including stress.[43] Their analysis showed that educational interventions significantly reduced stress levels (effect size = 0.85), reinforcing the effectiveness of such programs as demonstrated in this study. Additionally, recent analysis by Money et al on community-based health interventions emphasised the importance of social support and education in managing menopausal symptoms, including stress. Their study found that women who participated in community-based educational sessions reported lower stress levels and improved coping mechanisms compared to those who did not participate ($p < 0.05$).[44]

The CBEP proved to be an effective intervention for reducing stress levels among postmenopausal women. These findings align with recent research, highlighting the importance of educational and community-based approaches in managing stress and improving the quality of life for postmenopausal women.

Conclusion

Post-test results revealed a significant decrease in stress among the experimental group that received the educational package compared to the control group. This indicates that the CBEP effectively reduced stress levels in postmenopausal women. Furthermore, the experimental group showed minimal gain in stress levels, suggesting that the educational package not only effectively reduced stress initially but also helped sustain lower stress levels over time. This ongoing reduction is vital for enhancing long-term mental health and overall well-being.

Ethics

The study has been approved by Institution Ethics Committee, Chitkara University, Punjab, decision No IHEC/DHR/CU/PB/22/132, dated 11 January 2023. The concerned committee's declared ethical guidelines were adhered to by the investigators. Throughout the investigation, the writers kept the data confidentially intact.

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Conflicts of interest

The authors declare that there is no conflict of interest.

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Data access

The data that support the findings of this study are available from the corresponding author upon reasonable individual request.

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