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Comparing the effect of education based on PRECEDE – PROCEED model in person-centered and supportive group methods on women’s psychological well-being in the menopausal period

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Abstract:

BACKGROUND: Positive psychology introduce mental health as a positive psychological functioning and represent it as well-being psychology. From this point of view, psychological health is more supposed to be known as having positive characteristics such as self-esteem, positive social relationships, and satisfaction. This study was conducted to compare the effect of education in two methods of person-centered and supportive group based on the PRECEDE-PROCEED model on women’s psychological well-being during menopause.

MATERIALS AND METHODS: The present study was a clinical trial. One hundred and ten menopausal women have been placed in two groups (tests and control). The training program was designed according to the PRECEDE-PROCEED model. The educational intervention was implemented for two groups (person-centered and the supportive group) and the control group did not receive any training. Data analysis was used by descriptive statistics and in the case of normal distribution of alternative tests such as Kruskal–Wallis test, Man–Whitney test, Wilcoxon, spearman correlation, Spearman correlation was used.

RESULTS: Results of variance analysis showed that awareness, attitude, self-efficacy, enabling factors, reinforcement, support, behavioral environment, six psychological well-being factors were significantly different from the individual group and control group. Furthermore, the overall score of the psychological well-being was significantly higher than the control group.

CONCLUSIONS: As a result of the design and deployment of health care monitoring system, building and reform of community beliefs toward women’s status in decision making and their role in menopause, the design and development of support group meetings in women’s health care system and enhancing women’s access to specialist and heterogeneous health services tailored to the needs of the menopause.

Keywords:

Menopause, person-centered group, PRECEDE-PROCEED model, psychological well-being, support group

Introduction

Today, health systems outline their most important programs based on

family health. Women are the center of family health and are the main model of education and promotion of a healthy lifestyle to the next generation. Although

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men and women share common health issues, women face specific issues arising from their physiological conditions. One of these issues is the menopausal period, which causes additional problems for women due to the decrease in estrogen.^[1] During this period, the body undergoes hormonal changes, fertility decreases, and the risk of physical and psychological changes increases.^[2] One of the most critical stages of women's life is menopause.^[3,4] Menopause is an important milestone for women, including the end of the menstrual cycle and the pregnancy phase.^[1,5] Although menopause is a biological process and a universal event for women, it is not a form of definition for everyone, and the state of mind and mental health, emotional, cultural, and social health is involved in this experience. According to global statistics, in the seventeenth century, only 28% of women reached menopause.^[4,6] While today, with advances in medical science, women are expected to stay alive for more years, and many will live up to 80 or more.^[7] Therefore, the health of women in the years of menopause is as important as before.^[8]

Menopause is an early stage of women's life, which is associated with a series of problems, in addition to its valuable and valuable aspects. Since menopause is inevitable and will occur in every woman's life, it is essential to recognize the risk factors and control its effects, the necessity of women's life, which is important through health education to the group.^[9] The average incidence of menopause in natural women is between 58 and 42 and the median age of 51.4. However, in Iranian studies, the mean of menopause is 47.8 and lower.^[7,10] Women spend more than a third of their pregnancy in menopause. Unfortunately, in our country so far, women's health programs and programs have been devoted to specific topics such as pregnancy and family planning issues, and other women's health requirements, including menopause problems, were ignored.^[11] Considering that women visit a third of their lives after menopause, they are more prone to psychiatric problems of the menopause, so considering the importance of women's health and their role in health care, it is necessary to take care of postmenopausal women and devise plans to educate them.^[8,12]

Educational programs need to be considered essential to improve the quality of postmenopausal women.^[5] The PRECEDE-PROCESS model, proposed by Green and Crotter in 1970, considers the various factors that shape health and provides a clear design and interpretation of these factors.^[13] The PRECEDE-PROCEED model is very comprehensive and covers all areas of planning. At the beginning of this model, we use the data and community participation, which is a great advantage.^[14] The process of evaluation is also the main feature of this model.^[13] In addition, in our country, the effect of

educational interventions through lectures and questions and answers on the quality of life of postmenopausal women has been studied (43, 26) and due to insufficient research on appropriate learning methods, especially in the educational program of the support group based on the model and the role of women as the emotional and psychological axis of the family, as well as the effect of improving their quality of life in promoting family health and ultimately society, we decided to study "Comparison of education in two ways of individual-entered learning and supportive group based on PRECEDE – PROCEED model on the psychological well-being of women during menopause."

Materials and Methods

Study design and setting

The present study was a clinical trial in 2018. The researcher asked about the effect of education in both the person-centered and the supportive group based on PRECEDE-PROCEED model during menopause. In this study, the study population included middle-aged women during menopause in Ferdows city.

Study participants and sampling

In this study, the first of the four health centers in Ferdows city based on the inclusion criteria and the proportion of the population covered by each center as a class of available samples were included in the study. After all, each of the specimens was assigned to each test group and the control group was assigned in this study, 110 menopausal women have been estimated to enter the study after necessary criteria. The sample volume according to the same study^[15] was determined according to the following formula and with respect to the 95% confidence level, 21% were determined for each group. according to the number of 3 groups based on the formula of correction and the possibility of the collapse, 40 samples were raised in each group. The sample volume according to the same study^[15] was determined based on the following formula, according to the following formula and with respect to the 95% confidence level, 21 for each group, which increased to 40 samples per group according to the number of 3 groups based on the correction formula and the default probability.

$$n = \frac{(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2 \times (S_1^2 + S_2^2)}{(\mu_1 - \mu_2)^2} = \frac{10.5 \times (2.33^2 + 3.47^2)}{(5.6 - 2)^2} \approx 15$$

$$n = n \times \sqrt{g-1} = 15 \times \sqrt{2} = 21$$

Data collection tools and technique

Data were collected through a questionnaire including demographic characteristics

(individual and cognitive factors), Ryff psychological well-being questionnaire (self-acceptance, independence, mastery on environment, purposeful life, self-sufficiency), and pattern measurement questionnaire (predisposing factors, enabling, reinforcing, environmental factors). this questionnaire was completed in two groups of test and one control group two times before and after the intervention.^[16]

To determine the face and content validity, questionnaires were distributed among the members of the relevant scientific board. After announcing the point of view and resolving them, a group of women in the society has been studied to review and review sentences in terms of matching terms with the purpose and objectives of the preparation of the scale and the elimination of any objections and challenges regarding the harvesting of women. The reliability of the questionnaire was estimated by the internal consistency method. Cronbach's alpha coefficient for determination of internal consistency in behavioral environmental factors, enabling, enabling, and reinforcing factors were calculated Table 1.

The first part of the questionnaire was the question of individual information on age, education level, job, and so on. In the second part, 17 behavioral environmental questions were proposed. The third part of the questionnaire was devoted to measuring the potential factors in the form of six awareness questions, fourteen attitudes questions, in three areas aware of menopause symptoms, awareness of its effects, and some ways to control its effects. In this measure, the correct answer was given one point and otherwise, it did not belong. The question measurement questions were based on a five-point Likert scale (I agree, I disagree, I disagree, totally disagree) was designed. The fourth part of this questionnaire was dedicated to the enabling factors that were measured in six questions. In this study, access to information resources, training classes, skills necessary to control the effects of this period, including social activities were considered. The answer to questions yes, no, was somewhat designed. In reply to a grant of one, in response to a score of two, and in response to the yes, it was the point of three. The fifth section of the survey was designed to measure the factors of the reinforcing elements in the form of three questions and five questions related to family support that tested the comprehension of menopausal women from the perceived support of their entourage and family.^[17,18]

The data collection tool of the Reef Psychological Well-being Scale consisted of 84 questions and 6 factors. Subjects answer questions on a 6-point scale (quit disagree to quit agree). Forty-seven direct questions and thirty-seven questions are reversed. To examine the validity of the tool and examine its relationship

with elements that measure personality traits and also characterize the psychological well-being, such as emotional balance scale, self-satisfaction, and self-esteem.

Data analysis method

The Spearman correlation was used by descriptive and inferential statistics and normal distribution of alternative tests such as Kruskal–Wallis test, Mann–Whitney test, Wilcoxon, Spearman correlation.

Inclusion criteria include 1 - Women 47–55 years old, 2 - Minimum secondary education 3 - Resident of the city 4 - Married 5 - One year has passed since their menopause. 6 - was the desire to participate in research. Exclusion criteria include 1 - Absence of participants in weekly sessions in the two test groups 2 - Occurrence of adverse events before collecting information about the questionnaires before, during the intervention, and after the test 3 - Reluctance to continue participation.

Ethical consideration

This study was approved by the ethics committee of the Gonabad University of Medical Sciences with the ethics code GUMS.Rec1395,31514.

Results

According to Table 2 in terms of the age variable among the three groups studied, significant differences have not been observed ($P = 0.173$).

According to Table 3, there is no significant difference in terms of the level of education between the three groups ($P = 0.805$).

Moreover, most people in all three groups had a homogenous education level. According to the results

Table 1: Cronbach's alpha coefficient for determining internal consistency in questionnaires

Components	Number of questions	Cronbach's alpha
Predisposing factors (awareness)	6	0.75
Predisposing factors (attitude)	14	0.80
Enabling factors	6	0.77
Reinforcing factors	3	0.85
Supporting factors	5	0.82
Environmental-behavioral factors	17	0.83

Table 2: Comparison of mean age in 3 study groups (control, person-centered, support group)

Group	Age		One-way analysis of variance
	Mean	SD	
Control	52.6	3.72	$F(107.2)=1.17$ $P=0.173$
Person-centered	51.3	4.61	
Supportive	50.8	4.45	

SD=Standard deviation

Table 3: Total and relative frequency in 3 groups studied (control, person-centered, support group)

Elements	Groups						Test (χ^2 , df, P)
	Supportive		Person-centered		Control		
	Count	Percent	Count	Percent	Count	Percent	
Education							
Elementary and middle school	21	61.8	21	60	28	70	1.62, 4, 0.805
High school and diploma	7	20.6	6	17.1	7	17.5	
College	7	17.6	8	22.9	5	12.5	
Total	35	100	35	100	40	100	
Job							
Housewife	29	82.9	28	80	36	90	1.54, 2, 0.463
Employee	6	17.1	7	20	4	10	
Total	35	100	35	100	40	100	
Residence							
Rental	1	2.9	0	0	1	2.5	0.964, 2, 1.000
Estate	34	97.1	35	100	39	97.5	
Total	35	100	35	100	40	100	

of the table, participants' job variable was not observed among the three groups ($P = 0.463$).

We have the largest number of participants in all three groups of households. Furthermore, there is no significant difference in terms of the condition of residence in 3 groups ($P = 1.000$) and the largest participants in all three groups had property status.

According to Table 4, there was no significant difference in the number of children in the 3 groups studied ($P = 0.128$) and the 3 groups are homogeneous in terms of the number of children. The results of Kruskal–Wallis test showed that the mean ranks of the component of knowledge before the intervention in the three groups were not significantly different ($P = 0.076$). The results of the analysis of variance showed that the mean of attitude in the three groups before the intervention was not significantly different ($P = 0.173$).

The results of the variance analysis test showed that the average self-efficacy in the three groups studied before intervention did not differ significantly ($P = 0.122$). The results of the Kruskal-Wallis test showed no significant difference in the promoter factors in the three studied groups before intervention ($P = 0.166$).

The results of one-way variance analysis showed that the enabling factors in the three groups studied before intervention did not mean difference ($P = 0.189$). The results of the variance analysis test showed that there was no significant difference between the three groups studied before intervention ($P = 0.574$). The results of the test showed no significant difference in the score of support factors before intervention in 3 groups ($P = 0.654$).

According to Table 5, the results of the Kruskal–Wallis test showed that the awareness component in the three

Table 4: Comparison of the mean of the studied factors before the intervention in the 3 studied groups

Groups	Mean	SD	One-way analysis of variance
Awareness predisposing factors			
Control	57.26	1.76	$Z=5.14$ $P=0.076$
Person-centered	62.83	1.56	
Supportive	46.16	1.87	
Attitude predisposing factors			
Control	51.92	6.57	$F(107.2)=1.782$ $P=0.173$
Person-centered	54.82	6.95	
Supportive	52.42	7.50	
Self-efficacy			
Control	59.16	10.15	$Z=0.849$ $P=0.654$
Person-centered	62.25	9.31	
Supportive	64.68	13.5	
Booster factors			
Control	12.12	1.580	$F(107.2)=0.558$ $P=0.574$
Person-centered	12.08	1.704	
Supportive	7.96	1.53	
Enabling factors			
Control	12.87	2.85	$F(107.2)=1.690$ $P=0.189$
Person-centered	13.82	2.72	
Supportive	13.91	2.61	
Environmental-behavioral factors			
Control	35.75	5.75	$F(107.2)=0.558$ $P=0.574$
Person-centered	36.51	5.32	
Supportive	36.77	4.33	
Supportive factors			
Control	11	1.67	$Z=0.849$ $P=0.654$
Person-centered	15.69	1.46	
Supportive	11.22	2.33	

SD=Standard deviation

groups studied after the intervention has increased from before intervention. However, this increase was significant ($P = 0.028$). The results of the variance analysis test showed that the average attitude score in the three groups was significantly different after intervention ($P = 0.001$). The results showed that the

Table 5: Comparison of the mean of the studied factors after the intervention in the 3 studied groups

Groups	Mean	SD	One-way analysis of variance test
Awareness predisposing factors			
Control	45.60	1.64	Z=7.17
Person-centered	64.10	1.65	P=0.028
Supportive	58.21	1.32	
Attitude predisposing factors			
Control	52.07	7.59	F (107.2)=7.637
Person-centered	56.75	5.10	P=0.001
Supportive	58.02	7.65	
Self-efficacy			
Control	60.48	11.60	F (107.2)=8.68
Person-centered	66.71	6.85	P=0.005
Supportive	67.17	9.34	
Booster factors			
Control	9.09	1.64	Z=19.11
Person-centered	9.25	0.97	P<0.001
Supportive	8.25	0.73	
Enabling factors			
Control	13.20	2.49	F (107.2)=22.580
Person-centered	15.05	1.73	P<0.001
Supportive	16.08	1.06	
Environmental-behavioral factors			
Control	36.57	5.75	F (107.2)=3.87
Person-centered	38.45	4.22	P=0.024
Supportive	39.62	4.09	
Supportive factors			
Control	8.75	1.63	Z=17.09
Person-centered	11.55	1.05	P=0.001
Supportive	4.00	0.683	

SD=Standard deviation

average attitude after intervention in the control group was significantly < 1-based group ($P = 0.016$) and the support group ($P = 0.001$).

The results of the variance analysis test showed that the mean of self-efficacy score was significantly different in the three groups after intervention ($P = 0.005$). The results showed that the difference observed in the test of variance analysis is related to the mean difference of self-efficacy score in two control groups and support groups. The results of Kruskal–Wallis test, which were performed to compare the mean ratings of the reinforcing elements after intervention in 3 groups. Significant difference in terms of these factors after the intervention was shown in 3 groups. The supportive group and the person-centered group had a higher score than the control group.

The results of the Tukey test showed that the difference observed in the analysis of variance test was related to a significant difference between the mean scores of enabling factors in the control group compared to the person-centered and support groups ($P < 0.001$). The results of the analysis of variance showed that the

mean score of environmental-behavioral factors in the three groups after the intervention was significantly different ($P = 0.024$). The results of Kruskal–Wallis test showed that the mean ranks in the supporting factors after the intervention were significantly different in the three groups. Mann–Whitney test (considering Bonferroni adjustment) was also used to compare the two groups showed that this difference was between the support group with the control group ($P < 0.001$) and the person-centered group ($P = 0.005$).

There was no significant difference in the components of psychological well-being (autonomy-mastery of the environment-personal growth-positive relationships-purposeful life-self-acceptance) before the intervention in the three groups ($P > 0.05$). In all components of psychological well-being, the results of the Tukey test showed that the mean score of the support group had the most significant difference with the control group ($P < 0.05$).

The component of autonomy in the support group and person-centered has significantly increased after training ($P = 0.001$). However, in the control group, there was no significant increase ($P = 0.498$). The component of mastering the environment in the supportive intervention group increased significantly after training ($P = 0.001$).

The component of positive relationships in the control group decreased ($P = 0.423$). No significant increase was observed in the person-centered group ($P = 0.562$). However, in the supportive group, it increased significantly after training ($P = 0.001$). The component of purposeful life did not increase in the control group and no significant increase was observed in the person-centered group. However, in the supportive group, the increase was statistically significant ($P = 0.001$). The results of the analysis of variance showed that there was no significant difference between the three groups in terms of psychological well-being before the intervention ($P = 0.782$). Moreover, in terms of this component, three groups were the same. The results of the analysis of variance showed that psychological well-being increased after the intervention and this increase was also statistically significant ($P = 0.001$).

There is a significant difference in the mean score of psychological well-being between the control and supportive groups ($P = 0.001$). The results of paired *t*-test showed that after the intervention, psychological well-being in the supportive group increased significantly compared to before the intervention ($P = 0.001$). Furthermore, psychological well-being in the person-centered group increased after the intervention, but this increase was not statistically significant ($P = 0.058$).

Discussion

Menopause crisis affects mental health, physical, emotional, social functioning and family relationships, and usually psychological well-being due to its symptoms and set of complications. Golyan Tehrani *et al.*, in a study, showed that 43% of postmenopausal women suffer from severe anxiety and 40% consider themselves highly irritable. In the above study, about 50% of them believed that menopause had a moderate to severe effect on their family relationships.^[19] Menopausal women often suffer from a lack of information about menopause and it is very helpful for them to understand their menopausal problems and issues. Awareness will have a positive effect on health care and increase healthy behaviors. As a result, all women who experience menopause should receive the necessary training and support.^[20]

Findings showed that the mean age of women participating in the study was 51.62 + 4.62 years, which was consistent with the research of Ryff *et al.*, 50–52 years old.^[21], as well as the findings of Moshki *et al.* 51 + 9.94 years.^[22]

There was no significant difference in the number of children in the 3 groups studied (control, person-centered, support group) in relation to age, level of education, women's occupation, and residence status.

The mean age of the participating women showed that there was a significant difference in terms of age between the three control groups, the person-centered and the support group.

Regarding the relationship between education levels, no significant difference was observed between the three groups. The level of education of 70%–60% of the participants was in primary and secondary school. Regarding the occupation of women participating in this study, no significant difference was observed between the 3 groups studied and most of the participants in all 3 groups are housewives.

Benson and Top used the Precede model to causally analyze obesity-preventing behavior in women swimmers. The results of this study indicate the effect of predisposing, enabling, and reinforcing factors of the model on unhealthy behavior for weight control of women swimmers.^[23]

After the interventions and the implementation of the training program, it was found that the training session, especially through the support group through lectures, questions and answers, and educational booklets and CDs, increased women's awareness compared to before the intervention. Yazdkhasti *et al.* Showed

that the implementation of a structured educational program with the training method of the support group can be considered as one of the appropriate strategies to promote women's health and better coping with menopausal symptoms and improve their quality of life.^[24]

However, the rate of change in attitude in the supportive group after the intervention was significantly higher than before the intervention. Significant change in the attitude of the support group was mainly related to increasing awareness of the desired behavior and positive experiences of individuals after performing menopausal coping behaviors and naturally holding group discussions.

Some researches believe that increasing the awareness of postmenopausal women about menopause issues improves their attitude towards this phenomenon and improves their quality of life.^[25] Perceived self-efficacy in the context of a behavior is the prelude to that behavior and organizes human cognitive, social, emotional, and behavioral skills.^[26] Therefore, self-efficacy was considered as one of the predisposing factors in the PRECEDE-PROCESS model and the self-efficacy intervention program included repetition and practice of self-confidence, self-confidence, invincibility, verbal persuasion, and ability to adapt to menopausal methods.

Evangelical C. Karademas in 2005 showed high self-efficacy associated with high self-esteem, greater well-being, better physical condition, and faster recovery from acute and chronic illness. Low self-efficacy is also associated with higher symptoms of anxiety, depression, and lower levels of mental well-being.^[27]

Considering that behavior is a multi-factor phenomenon, it has to be directed to other factors (in addition to the potential factors) such as enabling factors such as enabling factors, and regardless of these variables, change behavior will face problems.^[28] In the present study, in accordance with the educational diagnosis stage, the PRECEDE-PROCESS model considered enabling and reinforcing factors.

In the studies of Chen *et al.*, entitled "Interventional effect of support group on postpartum stress," there was a significant decrease in Beck depression score, increase in stress acceptance score and evaluation of interpersonal support. While during this intervention, no significant change in the scores of the mentioned cases was observed in the control group.^[29]

In a study by Abdelrahman *et al.* examining psychological well-being and stress among Jordanian postmenopausal women, there was a correlation between purpose in life

and the factor of self-acceptance and perceived stress. Moreover, menopausal symptoms were identified as a negative factor in the acceptance of self-purpose in life.^[30] In the Veenhoven study, those with higher psychological well-being also had higher physical health. Also, these people are happy, optimistic and positive, and have high emotional stability, directly try to solve their problems, and are satisfied with their lives, and feel happy.^[31]

The results of the educational intervention of the present study showed a significant difference in the overall score of psychological well-being in the support group. Also, the psychological well-being score in the individual-centered group increased after the intervention, but this increase was not statistically significant.

The results of the studies of Halliday *et al.* In a study examining the problems affecting the quality of life and major changes in menopause in the physical dimension, showed a reduction in these problems after training, which is consistent with the results of research conducted by Joshanloo *et al.*^[32]

Limitation and recommendation

Lack of cooperation and irregular attendance of some participants in training sessions, lack of cooperation and nonstudy of educational resources by some participants in the person-centered group, time constraints, and illiteracy of some participants were some of the limitations of the present study.

Considering the importance of women's health, items such as designing and establishing a women's health care monitoring system, creating a culture and reforming society's beliefs, and designing and organizing meetings of the support group at the policy level are suggested.

Conclusions

In general, the aim of this study was to compare the effect of education in two methods of person-centered and supportive groups based on the PRECEDE-PROCESS model on the psychological well-being of women during menopause. Considering the importance of women's health and its effective role in shaping culture, education, maintaining and promoting family and community health, and especially the importance of menopause and menopause-related problems and issues, including designing and establishing a middle-aged women's health care monitoring system (menopause) In the health system, culture and reform of society's beliefs about the position of women in decision-making and their role during menopause, increasing women's access to specialized and homogeneous health services in accordance with the needs of menopause seems necessary.

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Conflicts of interest

There are no conflicts of interest.

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