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A PRECEDE-PROCEED based educational intervention in quality of life of women-headed households in Iran

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Abstract

Background: Women-headed households are more exposed to social damages than other women. Such condition remarkably influences the women's health-related life quality. The present study is aimed to investigate the effect of an educational intervention in quality of life of women-headed households under protection of Tehran Welfare Organization, in 2015.

Methods: In this quasi-experimental study with control group, 180 women-headed households participated. Sampling method was random allocation. Data collection tools were Life Quality standard questionnaire (WHOQOL-BREF) and a researcher-made questionnaire about structures of ecological and educational diagnosis phase of PRECEDE-PROCEED model. Validity and reliability of the questionnaire approved in a primary study. Based on the results obtained from the primary study, the intervention was performed in the case group only. Participants were followed one and three months after intervention. Data were analyzed through SPSS v. 15 software using descriptive and analytical tests.

Results: Before intervention no significant difference was observed among the mean scores of life quality, behavioral factors, and knowledge, enabling, and reinforcing factors in the two groups. But, one month and three months after intervention a significant difference was observed between the mean scores of these variables (in five instances $p<0.001$).

Conclusion: Intervention through the PRECEDE-PROCEED model improved the women-headed households' quality of life. The innovation of this study is using such intervention on quality of life in women-headed households for the first time.

Keywords: Quality of life, women-headed household, PRECEDE-PROCEED model, ecological and educational assessment**.**

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Introduction

The women-headed households play role of head of household without a regular presence or support and protection of an adult male and have the responsibility of the family's training, social and economic management, and decision making (1,2).

Studies show that today, 60% of the women of the world are the breadwinners of their families and 37% of the families and households are managed by females and have women as their protectors (3). In developing countries about 10.48% of the households are female-headed; however, there is no comprehensive and inclusive assessment of occurrence, prevalence, and type of the female-headed families. According to the Statistics and Informatics Unit of the Women Participation Affairs Office of Iran there were 1,037,112 women-head households (9.1%) in Iran in 2004, which increased to 2548072 (12.5%) in 2011 (4,5). Playing numerous roles requires adaptation and conformity of the working conditions with the family's conditions and the maternal and professional support. Be-

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sides, the vulnerable social, psychological, and physical conditions of the women-headed households influence their quality of life (1,6,7).

Quality of life is a state or condition in which the individual feels an internal sense of calmness and serenity toward the environment, nature, and the society where she/he lives (8). The quality of life comprises general well-being including social, psychological, and physical welfare which is perceived by a person or a group of people. (9,10). The quality of life is evaluated and described by the individual (10-12).

Review of the literature has shown the efficiency of the "precede pattern" in predicting the life quality of various groups of people (13-15). The "PRECEDE model" was presented by Laurence Green and Marshal Crowter in 1980 as a process used for changing the behavior. In this model we should develop a part-to-whole and end-to-start program. This model was completed in three decades through adding the PROCEED section to the model. The PRECEDE-PROCEED model includes: social diagnosis, epidemiologic diagnosis; ecological and educational diagnosis (the predisposing, knowledge, and enabling factors), managerial diagnosis; execution; process evaluation; effect evaluation; and results evaluation (16,17). In various studies the PRECEDE-PROCEED model has been recognized as an effective theoretical pattern for distinguishing the need for hygienic training and health improvement. This pattern considers the factors which form the health status and also interprets these factors. Bastani and Green, in their studies, have approved efficiency of this model and obtained acceptable educational results (18-20). Moreover, the PRECEDE-PROCEED model has been recognized as an effective method for creating and providing the phases which are necessary for improving the health and life quality (14,21,22).

The present research is aimed to study and determine the effect of intervention based on educational and ecological assessment phase of PRECEDE-PROCEED model on the quality of life in the women-headed households supported by Tehran Welfare Organization. The results of this study can be applied and used for designing appropriate interventions in order to improve these women's life quality.

Methods

In this quasi-experimental study (with control group), based on the previous studies and regarding the formula of comparing two independent groups' mean and also regarding the 95% confidence level and primary error α=0.05, the required sample size (sample volume) was determined as including 82 individuals, in each of the control and case groups. In order to prevent the reduction of the sample size after intervention, considering 10% additional samples (8 individuals in each group), the total sample number in each group (control and case) was assessed as 90 individuals. The sampling was done through the multi-phase random sampling method such that, first, five centers from among the Welfare Organization centers were randomly chosen and, then, the random allocation of the centers to the control and case groups was performed. After coordinating with these centers, the files existing in the Welfare Organization centers were used in order to obtain a list of the women-headed households who were under the protection and support of these centers. The inclusion criteria for this study included the employed women-headed households who were under the support and protection of Tehran Welfare Organization. A training session was held for the under-study women in order to explain to them the importance of this program, inclusion and exclusion criteria of the study, and how to fill the questionnaire. One of the data collection tools included the Life Quality standard questionnaire" (WHOQOL-BREF) which is comprised of four areas: physical health (7 questions like how much physical pain is a barrier for doing things you want to do?), psychological health (6 questions like how much do you enjoy of your life?), social health (3 ques-

tions like how much are you satisfied with the support you get from your friends?) and environmental health (8 questions like how are you satisfied with your location?). This questionnaire included two other questions which did not belong to any of these areas and evaluated the life quality and health status in a general manner, so on the whole this questionnaire included 26 questions (12). Answer is based on 5-point Likert scale. The raw scores of each subscale should make it a standard score. This means that raw score in each area minus the minimum raw score divided by the range of possible raw score multiplied by 100. Each area receives a score of 0 to 10. The higher score indicates better quality of life (12). In this study the total score of the life quality was considered as the criterion. Another instrument for gathering information in this study was a researcher-made questionnaire based on educational and ecological assessment phase of PRECEDE-PROCEED model. Content validity test was used for validation of the questionnaire by panel session with 10 experts and the questions were changed based on the results. Also, face validity was done based on the experts' comments. Content validity index (CVI) acquired from all the questions in this section was higher than 0.76 and Content validity ratio (CVR) achieved from all of the questions in this section was higher than 0.62, that was appropriate in accordance with Lawshe table (for ten). Reliability of the researcher made questionnaire was obtain by Cronbach's alpha test (through filling researcher made questionnaire in 15 individuals who were similar to the samples twice within two weeks). The obtained correlation coefficients for Cronbach's alpha test for all of the questions was higher than 0.95. This questionnaire was comprised of 60 questions including 9 questions about demographic variables, 24 questions about knowledge and attitude factors, 15 questions about enabling factors, 8 questions about reinforcing factors, and 13 questions about the behavioral causes. Answer format was based on the categorization criteria in all the principal variables included ±average, standard deviation, and using the "quarters" measure.

Based on the results obtained from the questionnaires and private interviews with women-headed households, the educational intervention based on educational and ecological assessment phase of PRECEDE-PROCEED model was designed and then confirmed by some of the experts. This intervention was comprised of 10 forty-minute sessions of education which were held through various methods such as speech, group discussion, inquiries, consultation, and providing some training and educational materials including weblogs, training CDs, and booklets. Number of participant in each training session was 30 women on average.

In this designed intervention healthy behaviors were: using low- cost healthy diet, walking to the work, strategies to improve sleep, strategies to control anger, anxiety and depression, relaxation, decreasing additional household experiences, using principle effective strategies to improve working environment and home condition and doing low- cost healthy recreation.

The enabling factors in the design of this intervention included providing a booklet of guidelines for improving different aspects of life quality, holding training sessions, displaying training videos and slides, teaching stress, anxiety and depression management skills, reducing the costs of a healthy diet, correcting form of sitting and standing during work time, doing exercises and walking, reducing the costs of the family through eliminating the unnecessary items, improving the family relationships, participating in the religious ceremonies, and providing financial and nonfinancial help.

The reinforcing factors in this design included emotional support and encouragement by helpers, exploiting the experiences of the successful women-head households, emotional support by children with encouraging words in elevator, and phone calls

between women-headed households and teachers.

In this intervention design, using a low-cost healthy diet, walking to work, using guidelines of sleep improvement, using guidelines for controlling anger, anxiety and depression, using relaxation technique, reducing the family costs, using systematic and effective methods for improving the conditions of working and living environments, and doing low-cost, healthy, and safe recreations were considered as the healthy behaviors.

Number of participants in each training session was 30 women and educational method was one month and three months follow-ups. The questionnaires were filled out and the obtained data analyzed and compared in SPSS v. 15 using descriptive tests (mean, standard deviation, number, and percentage) and analytical tests (t-test, Mann Whitney U test, Chi-square, repeated measurement analysis, and Friedman). These tests were used based on the results of Kolmogorov-Smirnov test for normality of the variables.

Results

The mean±SD of age in the case and control groups were 42.3±8.02 and 44.5±9.50, respectively. After performing the t-test no significant difference was observed between the two groups in terms of the participants' age (p=0.09). The household size mean±SD was obtained 2.4±0.7 for the case group and 2.3±0.6 for the control group. After performing the Mann Whitney test no significant difference was observed between the two groups in terms of the participants' household size (p=0.391). Other demographic characteristics of the understudy individuals are shown in Table 1.

While there was no significant difference between the mean of total score of the life quality and its aspects in the case and control groups, one month and three months after the intervention a significant difference was observed between the total score of the life quality and its aspects in the two groups (Table 2).

Before the intervention the mean of knowledge score was 7.44 for the case group and 7.51 for the control group. Mean of attitude score for the case and control groups were48.54 and 47.01, respectively. The average of the enabling scores in the case group was 23.31 while in the control group it was 22.35. The reinforcing score averages for the case and control groups were15.64 and 15.97, respectively, and the average score of the behavioral reasons was 10.16 in the case group and 9.66 in the control group. Before the intervention no significant difference was observed between the average scores of the life quality, predisposing factors, enabling factors, reinforcing factors, and the behavioral factors in the two groups. But, one month and three

Table 1. Demographic variables status in two groups of Iranian women-headed households, 2015

Variable	Categorization	Case		Control		X^2 test p value
		n	%	n	%	
Marital status	Divorced	56	62.2	65	72.2	0.178
	Married	19	21.1	10	11.1	
	Widow	15	16.7	15	16.7	
Education	Illiterate	2	2.2	8	8.9	0.178
	Elementary	18	20.0	16	17.8	
	Junior high school	28	31.1	24	26.7	
	Diploma	33	36.7	38	42.2	
	Academic	9	10.0	4	4.4	
Employment	Day laborer	86	95.6	79	87.8	0.059
	Contractual & official employment	4	4.4	11	12.2	
Reason of household-heading	Widow	15	16.7	15	16.7	0.057
	Divorced	53	58.9	65	72.2	
	Other reasons (husband's addiction/imprisonment, escape, disease)	15	16.7	15	16.7	
		53	58.9	65	72.2	
		22	24.4	10	11.1	

Table 2. Comparison of the quality of life aspects before and one month after the intervention in two groups of Iranian women-headed households, 2015

Status	Quality of Life aspects	Case (Mean±SD)	Control (Mean±SD)	p (t-test /Mann-Whitney)
Before intervention	Quality of Life	45.76±10.24	53.34±10.24	0.001
	Physical health	50.91±9.41	49.80. ±14.25	0.116
	Psychological health	46.99 ±12.66	46.75 ±16.80	0.749
	Social health	42.31± 14.74	38.24±15.84	0.053
	Environmental health	37.36±13.31	38.29±11.93	0.994
One month after intervention	Quality of life	45.54±10.89	43.45±12.07	0.224
	Physical health	50.91±9.26	56.46±13.36	0.026
	Psychological health	47.08±12.42	56.85±14.29	0.001
	Social health	42.50±13.74	47.03±14.36	0.05
	Environmental health	37.15±12.97	496.0±11.24	0.001
Three months after intervention	Quality of life	45.69±10.41	53.21±10.29	0.001
	Physical health	50.99±9.10	56.74±12.89	0.017
	Psychological health	47.22±12.12	56.85±14.51	0.001
	Social health	42.22±14.50	47.31±15.69	0.033
	Environmental health	37.29±13.01	48.99±11.50	0.001

Table 3. Comparison of the mean scores of educational and ecological assessment phase structures of PRECEDE-PROCEED model and the life quality score in two groups of Iranian women-headed households, 2015

Variable	Before education			One month after education		Three months after education		p
	Group	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation	
Knowledge	Control	7.51	3.080	7.68	3.162	7.72	3.169	0.001
	Test	7.44	3.529	19.14	2.701	19.18	2.64	
Attitude	Control	47.01	6.196	46.96	6.063	47.00	6.028	0.001
	Test	48.54	8.78	59.52	7.668	59.57	7.612	
Enabling	Control	22.35	5.353	22.16	5.361	22.16	5.359	0.001
	Test	23.13	5.710	30.28	4.945	30.36	4.942	
Reinforcing	Control	15.97	4.469	15.87	4.460	15.84	4.456	0.001
	Test	15.64	4.240	21.44	4.363	21.46	4.363	
Behavioral factors	Control	9.66	3.626	9.53	3.519	9.56	3.515	0.001
	Test	10.16	4.532	14.79	3.832	15.04	3.868	
Life quality	Control	45.54	10.893	45.69	10.416	45.76	10.247	0.001
	Test	43.45	12.073	53.21	10.291	53.34	10.171	

Friedman test /repeated measurement analysis test

months after the intervention a significant difference was observed between the mean score of these variables (Table 3).

The results of the repeated measurement analysis test and the Friedman test showed there is a significant difference between the average scores of the PRECEDE-PROCEED model's educational and ecological assessment phase structures in three phases (before, one month, and three months after intervention) in the case and control groups (Table 3) .

Discussion

Before the intervention the two understudy groups' status was medium in terms of the scores of life quality and its aspects. This finding is consistent with that of Rimaz et al (7), since it emphasizes on the necessity of proper planning and design for intervention in order to improve the life quality of these women-headed households.

Besides, in the present study, before intervention the status of the two groups in terms of the components of educational and ecological assessment phase of PRECEDE-

PROCEED model (knowledge, attitude, enabling factors, reinforcing factors, and behavioral factors) was in a medium level which is consistent with the finding of Matin et al study (23). This indicates it is necessary to design and plan a proper intervention in order to improve these components.

After intervention, a significant difference was observed between the means of the under-study women's attitude and knowledge predisposing factors. Also, in a study performed by Yeo Me, the increase of the knowledge level and creation of a positive attitude was expressed as the effect of intervention based on the PRECEDE-PROCEED model on the behavior changes (24). This is in agreement with the findings of Moshki et al study (25). This finding demonstrated the effect of educational intervention based on the educational and ecological assessment phase of PRECEDE-PROCEED model on improvement of the under-study women's attitude and knowledge.

In the present study after intervention a significant statistical difference was observed in the test group between the mean of the enabling factors, reinforcing factors, and behavioral factors of the women-headed households. Results of other studies performed by Taghdisi, Matin, Ebrahimi, and Deng and Hu also have proved the effect of the PRECEDE-PROCEED model on increase of the predisposing (knowledge, attitude), enabling, and reinforcing factors (23,26-28). Moreover, the studies of Philips and Li have emphasized on the effectiveness of the PRECEDE model on the healthy behavior changing and health services facilitation (29,30). These findings have demonstrated the effect of educational intervention based on the educational and ecological assessment phase of PRECEDE-PROCEED model on the improvement of the enabling, reinforcing, and behavioral factors in the under-study women.

In this study, one month and three months after intervention in the test group, mean of physical health, psychological health, and environmental health demonstrated a statistical significant difference. In Taghdisi's study, too, a remarkable improvement in the physical health was observed after the intervention (27). Besides, the results obtained from studies performed by Rasi and Timpka have shown that the educational intervention is effective in check strategies for improving the life quality, physical health, psychological health, and general health of the under-study women (31). In the Hazavei et al study on the effect of the educational plan based on the precede model on the level of depression in patients who had undergone coronary artery bypass surgery showed that after intervention of all the educational factors, this level in the intervention group is higher than that in the control group and thus the capability of this model to change the behavior was proved (32). Nazari et al demonstrated that designing and executing an educational plan based on the PRECEDE-PROCEED model and its ecological and educational diagnosis phase structures (knowledge, behavior, attitude, enabling and reinforcing factors) can improve the safe behaviors in the elementary school students (33).

Findings of Ekhtiari et al showed that the PRECEDE-PROCEED pattern is a good and proper pattern for planning and executing the preventive interventions which can prevent violence in teenagers (34). Saffari et al, in their study, found that the PRECEDE model can lead to a significant success and achievement in improving the teenagers' lifestyle and it can be used as an efficient and effective model in planning (35). Also, in Sharifi Rad's research, the old individuals who had been educated could, after educational intervention, gain higher scores in the reinforcing, enabling, and predisposing factors (knowledge and attitude) compared to the control group (36); this is consistent with the present study findings.

Results of the present research indicate the increase of the women-headed households' life quality as a consequence of educational intervention through the PRE-

CEDE model. Also, it showed that the PRECEDE model's educational structures including predisposing, enabling, and reinforcing factors, influence the behavioral factors to acquire healthy behaviors that by themselves can improve the level of health and life quality. Such process has been demonstrated in Matin et al study, which showed that PRECEDE model has led to a significant change in the life quality of test group (23). A similar conclusion has been presented in another study by Dehdari et al entitled "the effect of education based on the PRECEDE-PROCEED pattern on increase of the patients' life quality after the coronary artery bypass surgery" (20).

Besides, Zhu et al (37) pointed out the effect of educational intervention on improving the life quality and physical health of the migrant working women. Another study by Naderi et al, showed the effect of teaching the stress management skill on increase of the working women's life quality (15). Findings of a study by Pournaghash expressed the effect of the PRECEDE model on improving the life quality of the patients who had coronary artery transplantation (38). Also, Sabzmakan et al demonstrated the efficiency and effectiveness of the educational plan based on the precede pattern in preventing and reducing the level of depression in patients with coronary artery bypass surgery and changing their behavior through this model (21). Orouji et al showed that after educational intervention based on the precede pattern, the average scores of the enabling, reinforcing, and predisposing factors (knowledge and attitude) and behavioral factors in the test group, compared to the control group, changed significantly (39).

Self-reporting and generalizability of the results are the limitations of current study. Using interviews and qualitative study is also suggested. Also, a similar study in a larger sample and comparing the results is suggested.

Conclusion

The educational intervention based on the PRECEDE-PROCEED model's ecological and educational diagnosis phase improved the under-study women-headed households' life quality .The innovation of this study is the approached intervention on the quality of life in women-headed households for the first time.

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