

The effect of a self-care program based on the teach back method on the postpartum quality of lifeFatemeh Ghiasvand¹, Hedyeh Riazi², Sepideh Hajian², Elahe Kazemi³, Armin Firoozi⁴

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Type of article: Original**Abstract**

Background: The postpartum period is a critical stage of life with major changes in the quality of life. Therefore, special consideration is needed to this issue.

Objective: To determine the effect of a self-care program based on the Teach Back method on the postpartum quality of life.

Methods: This experimental study was conducted on eighty postpartum women who had given birth in health centers across Darreh Shahr County, Ilam Province, Iran in 2016. The control group received only routine postpartum care according to the national guidelines. The trial group received the routine care in addition to two sessions of physical and psychological postpartum self-care based on the Teach Back method. The two groups were assessed in terms of their quality of life before and after the intervention using the Postpartum Quality of Life Questionnaire. The data were analyzed using SPSS version 21. Descriptive statistic tests, Chi squared, independent-samples t-test, paired-samples t-test, Wilcoxon and Mann Whitney's test was used.

Results: Before the intervention, the postpartum quality of life score was 106.23 ± 11.866 in the trial group and 107.30 ± 13.197 in the control group; after the intervention, the score was 124.73 ± 10.706 and 115.03 ± 12.687 in the two groups respectively, suggesting a significant inter-group difference after the intervention ($p < 0.001$). Significant differences were also observed between the two groups in terms of the mother's feelings toward herself, toward her child and toward her spouse and others, and physical health before and after the intervention ($p < 0.001$).

Conclusions: Using the Teach Back model for a self-care program appears to dramatically improve the postpartum quality of life and is therefore recommended as a useful method for postpartum care.

Trial registration: The trial was registered at the Iranian Registry of Clinical Trials (<http://www.irct.ir>) with the Irct ID: IRCT2015012820854N1.

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Keywords: Self-care, Teach Back method, Postpartum quality of life

1. Introduction

Self-care is a new trend in health care that is highly important in the promotion of health and the prevention and control of diseases (1), and can be utilized as a cost-effective strategy for individualized patient education in postpartum (2) and includes activities performed by the individual for the maintenance and promotion of her health and well-being (3). The postpartum period is a physiologically, emotionally and socially critical period for women

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and families, as most maternal deaths and health problems occur in this period (4). These problems are not necessarily resolved in the first year after childbirth, (5) and can lead to functional limitations (6, 7). Despite the postpartum care programs in place, significant complications and even death still occur in mothers after childbirth (8-10). The main health challenge of the 21st century is to improve quality of life and thereby health, which can be accomplished through the empowerment of the society for having a greater control over their personal health and ultimately for improving it (11). Assessing the postpartum quality of life is essential to health promotion planning (12). Adverse postpartum complications can be eliminated by increasing self-care abilities in postpartum women (13). Various self-care education models are used for promoting self-care, including Orem's Self-Care Theory, the Teach Back method and the Health Belief Model (14-16). As for postpartum care, the Health Belief Model is often used for promoting continued breastfeeding and postpartum exercises, and positive effects have been reported for the use of this model (17, 18). The Teach Back model, however, has so far, not been used for these purposes, although it appears, using a technique such as Teach Back can be effective to have positive effects on the patients' education, their learning assessment and ensuring their full understanding of their conditions and their mastery over self-management skills for use at home (19). This model is introduced as a self-care training method for patients (20, 21), that is used for enhancing the patient's understanding of her conditions and her retention of information (22). In this model, the trainer presents information to the patient in a simple and comprehensible manner free of medical terminology, and by the end of the training, asks the patient to repeat what she has learnt, so that her understanding of the subject can be assessed (15, 23, 24). The Teach Back method has also been recommended as a useful strategy for enhancing the understanding and retrieval of health information in patients with poor literacy (25). The Iranian Ministry of Health and Medical Education has recently developed a comprehensive postpartum care program that is offered in healthcare centers across the country (26). Previous studies have shown that women's access to qualified healthcare during pregnancy, childbirth and postpartum can significantly reduce maternal and neonatal mortalities as well as the number of unnecessary and costly interventions (27, 28). As a result, focusing on the quality of services is the main strategy for promoting maternal health. The use of educational models in providing care appears to improve the quality of care (29-31), so, the present study was conducted to determine the effect of using a self-care program based on the Teach Back method on the postpartum quality of life.

2. Material and Methods

2.1. Trial design and participants

This was an experimental study that was conducted from October 12, 2015 to June 10, 2016. The present study was conducted on eighty postpartum women in healthcare centers across Darreh Shahr County, Ilam Province, Iran. The subjects were selected through the quota sampling of five health centers in the region with a different geographical distribution and in proportion to the population covered by each. The subjects were selected in accordance with the inclusion criteria, and were randomly allocated into two groups.

2.2. Selection criteria

The study inclusion criteria consisted of living in Darreh Shahr County, first pregnancy and first childbirth, wanted pregnancy, having received regular prenatal care, having had a low-risk pregnancy leading to a singleton, term and healthy child with appropriate weight for gestational age and born through vaginal delivery. These criteria were chosen to ensure that the participants had no previous background of receiving pregnancy care and education and to ensure that they had received equally sufficient prenatal care and had given birth to a baby with no particular problem. Since the lack of adequate social support could have acted as a confounding factor, only the women with appropriate social support were included in the study (based on a score of 4 or higher in the valid Winefield and Tiggemann postpartum social support questionnaire on postpartum days 2-3). The study exclusion criteria consisted of an unwillingness to continue cooperation with the researcher and developing postpartum depression (based on a score of 12 or higher in the Edinburgh Depression Scale at postpartum weeks 6-8). One woman from the trial group and two from the control group were excluded from the study due to developing postpartum depression and were referred to clinical psychologists and psychiatrists and were then replaced with other candidates.

2.3. Interventions

The control group received only the routine postpartum care provided by midwives according to the national guidelines and the trial group received the routine care in addition to two sessions of postpartum self-care education by the researcher in the two general domains of physical and psychological health, based on the Teach Back method on postpartum days 2-3 and 10-15. The training was provided individually and face-to-face until the patient's full understanding of the information provided was ensured. Each session lasted about an hour. The training sessions covered both the physical (personal health, sexual health, oral health, signs of postpartum complications, common

complaints and advice to help improve them, the importance of exclusive breastfeeding and its correct method, breast problems, the use of supplements, family planning and the pap smear test) and psychological (note on mood swings and postpartum psychological changes, coping with these changes and communication with the spouse, infant and relatives) dimensions of self-care. The quality of life was compared between the two groups on postpartum days 2-3 (pre-intervention) and at postpartum weeks 6-8 (post-intervention) using the Postpartum Quality of Life Questionnaire. The Persian version of this questionnaire has been used in many studies; Turkan et al. (2004) translated the questionnaire and confirmed its content validity and reliability ($r=0.85$) (1, 32, 33). The present study also confirmed the reliability of this questionnaire with a Cronbach's alpha of 0.83 and an Interclass Correlation Coefficient (ICC) of 0.93. This questionnaire consists of thirty items on motherhood, including the mother's feelings toward herself (6 items), the mother's feelings toward her child (3 items), the mother's feelings toward her spouse and others (8 items), the mother's feelings toward sexual relations (3 items), physical health (7 items) and the relationship between childbirth and financial status, satisfaction with delivery and choice of the delivery method for future pregnancies (1 item each). Each item on the questionnaire is assessed based on a Likert scale from 1 to 5. The minimum and maximum score is 30 and 150 respectively and higher scores indicate a better quality of life (1, 32).

2.4. Outcomes

The outcome of our analyses was the rate of postpartum quality of life in the two groups.

2.5. Sample size

Given the lack of similar studies on the subject, sample size was calculated in the preliminary stage of the study (the pilot) with the participation of thirty eligible women, and based on the mean difference in quality of life scores between the two groups. According to the mean comparison formula with a statistical power of 85% and a type I error of 0.05, sample size was calculated as 39 per group and was ultimately raised to 40.

2.6. Randomization and blinding

The subjects were selected in accordance with the inclusion criteria and were randomly allocated into two groups. Randomization was done by one of the researchers, who did not have a role in the education of the participants. The randomization sequence was computer-generated, with the randomization itself conducted through IBM© SPSS© Statistics version 21 (IBM© Corp., Armonk, NY, USA).

2.7. Statistical methods

Data analysis was conducted using SPSS version 21. Due to the small sample size, the normal distribution of the variables was verified using the Shapiro-Wilk test. The normally-distributed variables were analyzed using parametric tests, including the independent-samples t-test, paired-samples t-test and the non-normally distributed variables using non-parametric tests, including Mann-Whitney's U-test, the Wilcoxon test and the Chi-square test. Descriptive statistics, including mean and standard deviation and frequency distribution, were used to describe the characteristics of the two groups of participants. The Chi-square test was used to verify whether the two groups were matching. The relationship between the quality of life subscales before and after the intervention was assessed separately in each group using the paired-samples t-test and the Wilcoxon test, while the relationships between the two independent groups were compared using Mann-Whitney's U test and the independent-samples t-test. The level of statistical significance was set at $p<0.05$.

2.8. Research ethics

The proposal for this thesis research was presented to the Ethics Committee of Shahid Beheshti University of Medical Sciences, after its scientific approval by the Midwifery and Reproductive Health Department. The Ethics Committee approved the study with the number: IR. SBMU. PHNM.1394.67. This study was also registered in the Iranian Registry of Clinical Trials (irct.ir). The research objectives were explained to all participants. All participants were asked to sign informed consent forms and they were assured of confidentiality of their information. Participation in the study was voluntary and each of the participants was able to leave the study at any moment. As education is a noninvasive method, thus the study had not any physical and psychological harm to the intervention group.

3. Results

The mean age of the participating women was 24.5 ± 4.5 years old. The majority of these mothers were housewives, with junior high or high school education and a monthly household income less than 5,000,000 rials. There were no

significant differences between the two groups in terms of age, education, occupation, household size, monthly family income, child's gender and type of vaginal delivery (with episiotomy, with tearing or without episiotomy) ($p>0.05$; Table 1). No significant differences were observed between the trial and control groups in their mean score of postpartum quality of life before the intervention, i.e. on postpartum 2-3 days ($p=0.289$). After the intervention, i.e. at postpartum weeks 6-8, however, the difference between the groups became significant ($p<0.001$). The assessment of the different dimensions of the postpartum quality of life before the intervention showed significant differences between the trial and control groups only in terms of satisfaction with delivery and choice of the delivery method for future pregnancies ($p<0.001$); after the intervention, significant differences were observed between the two groups in terms of the mother's feelings toward herself, toward her child, toward her spouse and others and her physical health ($p<0.001$; Table 2). The separate assessment of each group revealed the mean and standard deviation of the overall postpartum quality of life score to be 106.23 ± 11.866 before the intervention and 124.73 ± 10.706 after the intervention in the trial group, and 107.30 ± 13.197 before the intervention and 115.03 ± 12.687 afterwards in the control group, suggesting a significant difference in each group between the pre- and the post-intervention scores ($p<0.001$). In the trial group, the mean score of all the dimensions of quality of life (except for financial status) differed significantly after the intervention compared to before ($p<0.001$). In the control group, too, the mean score of all the dimensions of quality of life (except for financial status and choice of the delivery method for future pregnancies) differed significantly after the intervention compared to before ($p<0.001$).

Table 1. The demographic details of the trial and control groups

Variable / Group	Trial Group; n (%)	Control Group; n (%)	p-value*
Woman's Education	Illiterate	1 (2.5)	1
	Primary School	4 (10)	
	Junior High and High School	22 (55)	
	University	13 (32.5)	
Spouse's Education	Illiterate	2 (5)	0.983
	Primary School	4 (10)	
	Junior High and High School	22 (55)	
	University	12 (30)	
Kinship with the Spouse	None	19 (47.5)	0.884
	Close Relative	11 (27.5)	
	Distant Relative	10 (25)	
Woman's Occupation	Employed	1 (2.5)	1
	Housewife	39 (97.5)	
Spouse's Occupation	Employed	5 (12.5)	0.990
	Manual Laborer	3 (7.5)	
	Farmer	7 (17.5)	
	Self-Employed	24 (60)	
	Other	1 (2.5)	
Monthly Household Income (Rials**)	Less than 5 million	19 (47.5)	0.990
	5 to 10 million	16 (40)	
	10 to 15 million	4 (10)	
	15 to 20 million	1 (2.5)	
Household Size	3	35 (87.5)	1
	4	2 (5)	
	5	3 (7.5)	
Type of Vaginal Delivery	With Episiotomy	38 (95)	0.513
	With Tearing	1 (2.5)	
	Without Episiotomy	1 (2.5)	
Neonate's Gender	Female	23 (57.5)	1
	Male	17 (42.5)	
Satisfaction with Life	Yes	40 (100)	0.152
	No	0 (0)	
	In Between	0 (0)	

*Chi-square test **Iranian currency

Table 2. Comparison of the mean scores of the different dimensions of the postpartum quality of life and its mean overall score in the trial and control groups before and after the intervention

Dimension of Quality of Life	Assessment Occasion	Trial Group; Mean ± SD	Control Group; Mean ± SD	p-value
Mother's feelings toward herself	Before the Intervention	21.65±3.093	21.15±3.101	p ^l *=0.472; T=0.722
	After the Intervention	25.08±2.422	22.85±3.191	p ^l <0.001; T=-3.513
		p ^w #<0.001; Z=-4.134	p ^p **<0.001; T=4.456	
Mother's feelings toward her child	Before the Intervention	13.43±2.241	13±2.088	p ^M ##=0.230; Z=-1.200
	After the Intervention	14.65±0.700	13.90±1.336	p ^M =0.006; Z=-2.746
		p ^w <0.001; Z=-3.720	p ^w <0.001; Z=-3.564	
Mother's feelings toward her spouse and others	Before the Intervention	31.75±3.052	31.775±3.832	p ^M =0.911; Z=-0.111
	After the Intervention	34.28±3.942	31±4.403	p ^M <0.001; Z=-3.194
		p ^w <0.001; T=-4.316	p ^w <0.001; Z=-1.185	
Mother's feelings toward sexual relations	Before the Intervention	7.55±2.364	8.18±2.591	p ^M =0.163; Z=-3.194
	After the Intervention	9.90±2.600	9.53±2.088	p ^M =0.392; Z=-0.856
		p ^w <0.001; Z=-4.359	p ^w <0.001; Z=-3.183	
Physical health	Before the Intervention	20.03±6.257	22.03±6.011	p ^l =0.149; T=1.458
	After the Intervention	29.43±3.426	25.98±5.031	p ^l <0.001; T=-3.585
		p ^w <0.001; Z=-5.481	p ^p <0.001; T=-3.602	
Financial status	Before the Intervention	4.58±0.483	4.73±0.599	p ^M =0.226; Z=-1.210
	After the Intervention	4.58±0.483	4.60±0.778	p ^M =0.078; Z=-1.760
		p ^w =1; Z=0.000	p ^w =0.260; Z=-1.127	
Satisfaction with delivery	Before the Intervention	2.75±1.41	3.45±1.197	p ^M =0.026; Z=-2.225
	After the Intervention	3.40±1.374	3.80±1.114	p ^M =0.316; Z=-1.003
		p ^w <0.001; Z=-3.617	p ^w =0.023; Z=-2.276	
Choice of the delivery method for future pregnancies	Before the Intervention	2.38±1.353	3±1.340	p ^M =0.036; Z=-2.094
	After the Intervention	3.15±1.406	3.38±1.353	p ^M =0.496; Z=-0.681
		p ^w <0.001; Z=-3.559	p ^w =0.088; Z=1.708	
Overall score of postpartum quality of life	Before the Intervention	106.23±11.866	107.30±13.197	p ^l =0.289; T=1.067
	After the Intervention	124.73±10.706	115.03±12.687	p ^l <0.001; T=-3.696
		p ^p <0.001; T=-10.205	p ^p <0.001; T=-5.774	

* Independent-samples t-test; ** Paired-samples t-test; # Wilcoxon test; ## Mann Whitney's U-test; * Chi-square

4. Discussion

The present study showed that the implementation of a self-care program based on the Teach Back method improves the postpartum quality of life and increases the mean overall quality of life score 2.25 times more than when conventional care methods are used. This improvement could be attributed to how this method teaches participants

the skills required to adjust to new conditions and abandon their unhealthy habits, and also reduces their postpartum problems (34) due to its particular feature of ensuring that the mothers have fully understood the training (35). Various educational methods are currently used for promoting maternal health, such as the use of pamphlets and online tools, but the point is that this education should be beneficial and practical for mothers in accordance with their particular conditions (36). Although previous studies have shown the effectiveness of some self-care training programs in enhancing the postpartum quality of life (34, 37, 38), the present study showed the effectiveness of the Teach Back method on the postpartum quality of life for the first time. Since the postpartum quality of life also improved in the control group, it can be argued that, not only the intervention used in this study, but also the routine care services currently offered in healthcare centers across the country can positively affect the quality of life in this group of women. Although this improvement can be partly attributed to the mother's passage from the first few postpartum days and her gradual return to normal conditions (39), which is often accompanied by healing episiotomy or tearing scars, improved postpartum pain and the mother's regained ability to manage her daily life, since a significantly greater improvement in the quality of life was observed in the trial group, it can be concluded that the implementation of a self-care program based on the Teach Back method is more effective than conventional care measures and the use of this educational model can therefore have a major role in the communication of information to patients and their education, especially in the case of self-care programs. Before the intervention, the two groups did not differ significantly in their quality of life, perhaps because women presenting to public healthcare centers are often similar in terms of the major factors affecting their quality of life, such as demographic and sociological characteristics. The intervention used in this study had a significant positive effect on the mother's feelings toward herself, toward her child and toward her spouse and others, as a significant improvement was observed in the trial group in these three dimensions after the intervention. Since the education program used in this study addressed the method of adjusting to new conditions, it can be argued that receiving proper in-depth education and information about the new conditions after childbirth, especially for mothers who have no similar previous experiences, enables a greater control over life and a greater peace, and leads to positive changes in the mother's feelings toward herself, her child and her spouse and others (40). Other studies have also revealed the effectiveness of teaching health-promoting behavior on some dimensions of quality of life, including the mother's feelings toward herself, her child and her spouse, sexual relations and physical health (1). Teaching flexibility to postpartum women can enhance their satisfaction with life and promote their mental health (41) and can ultimately generate good feelings in them about themselves and others. It therefore seems that focusing on mental health and implementing mental health promotion interventions can lead to a better adjustment to new conditions and help improve the postpartum quality of life (42). Another significant effect of the intervention used in this study was the dramatic improvement in physical health in the trial group. Although the mother's improved physical health can be partly attributed to the passage of time (43), the lack of knowledge about the signs of postpartum complications and common postpartum complaints and breastfeeding problems are some of the issues that cause physical problems and fatigue in mothers, especially in primiparous mothers. Since the training provided in this study covered these problems and presented ways to deal with them, the offered method can be said to have led to the mothers' better understanding of how to deal with these problems, and to have thus improved their physical health. Other studies on different diseases also confirm the positive effects of this educational method on improved physical health in patients (30, 44). In line with the present findings, the results of a study conducted by Bahrami et al. (2013) showed that women who had received prenatal education received higher scores in the quality of life and the physical dimension of health compared to the control group (43). In contrast, some studies found postpartum interventions to be ineffective in physical and mental health (26, 45-48). The disparity of findings may be due to differences in the type of intervention, especially since the present study used the Teach Back method. The intervention used in the present study led to an increase in the mean score of all the dimensions of quality of life in the trial group, except for financial status, which was well predictable, because, although financial status has a major role in the quality of life (49), the present intervention could not possibly have a role in its improvement; this finding is consistent with the results of other studies on the subject (1). The results obtained showed a significant pre-intervention difference between the trial and control groups in the mean scores of satisfaction with delivery and choice of the delivery method for future pregnancies, such that the trial group was less happy with their delivery and was therefore less inclined to choose vaginal delivery for future pregnancies, which may have been due to the lack of sufficient attention to the mother's attitude toward the type of delivery during prenatal care. Better counseling services that discuss the method of delivery are therefore required for mothers during their pregnancy, because after the proposed intervention and training, the trial group showed a greater satisfaction with their vaginal delivery and a better inclination to choose the same method for future pregnancies compared to the control group, which is indicative of the positive effects of the educational intervention on these two dimensions. The fact that this increase was not significant suggests the need for fundamental changes in the social infrastructure and the creation of a positive

attitude toward vaginal delivery in society, which can be accomplished by the development and implementation of special programs (50-52). The mother's feelings toward sexual relations was a dimension in which no significant differences were observed between the two groups after the intervention, even though both groups received higher scores in this dimension after the intervention (with the trial group's scores being yet higher than the control's). This finding may be due to the undesirable postpartum sexual relations experienced by mothers (53), as sexual health problems are very common after childbirth and increase dramatically after delivery (54). Since sexual problems are likely to increase after childbirth, and since sexual relations and women's feelings and attitudes toward them are a multifaceted phenomenon that is rooted in the dominant culture of the society in question, and since this attitude is affected by biological and psychological as well as physical factors (55), educational, cultural, social and economic matters, and the spouse's attitude and performance as well (56-58), this finding was well anticipated, because the implemented intervention could not possibly change the women's mentality, and their established attitudes toward sexual issues, although it was not totally ineffective, and did in fact make the mothers feel better toward sexual relations. More in-depth structural measures need to be taken in this area to improve the mothers' attitude toward sexual relations.

5. Study limitations

The routine postpartum care offered to the control group was provided by the healthcare centers' midwives; ideally, however, they had to be provided to all participants by the same person, which was impossible in the present study. Nevertheless, since all the care measures and training were performed according to the national guidelines, they shared the same principles.

6. Conclusions

According to the results, providing a postpartum self-care program based on the Teach Back method can have a significant role in improving quality of life in mothers after childbirth. Since a better postpartum quality of life can contribute significantly to the family's health, this method is recommended to be used by healthcare personnel in conjunction with other maternal and neonatal care services.

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Trial registration:

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Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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