

## Effects of Implementing the Alexander Technique on Enjoying the Sense of Motherhood in the Postpartum Period

### Abstract

**Background:** The broad concept of maternal well-being includes psychological concepts, social aspects, and aspects of becoming a mother. The present study aimed to investigate the effects of implementing the Alexander technique on enjoying the sense of motherhood. **Materials and Methods:** This study was a clinical trial conducted in two phases. In the first phase, using the exploratory and confirmatory factor analysis, 226 mothers were asked to undergo a scale test of enjoying the sense of motherhood after childbirth. In the second phase, 88 pregnant women were divided into two experimental groups. The data collection tool was a researcher-made questionnaire about enjoying the sense of motherhood. Independent samples *t*-test, Mann-Whitney test, Chi-square test, Fisher's exact test, analysis of variance test, Box test, and Levine test were used to analyze the data. **Results:** Results of this study showed that the mean scores of the constructs of enjoying pregnancy ( $P > 0.001$ ), motherhood, and child care satisfaction ( $P > 0.001$ ) in the experimental group were significantly higher than the control group. Moreover, the construct of trusting their own abilities to cope with maternal duties ( $P > 0.01$ ) did not show significant differences between the two groups. **Conclusions:** The findings indicated that the Alexander technique can promote mothers' psychological well-being and their pleasure of becoming a mother and the related constructs. Results also revealed that using this technique, educating and recommending pregnant women to use this technique will be beneficial.

**Keywords:** Alexander technique, Iran, maternal well-being, postpartum period

### Introduction

Pregnancy is generally considered as a good emotional period for a woman and her family. At the same time, it can endanger pregnant women's psychological health.<sup>[1]</sup> Pregnancy brings with it different physiological, social, and emotional changes which all influence the maternal well-being.<sup>[2]</sup> Part of maternal well-being can be enjoying the sense of motherhood which includes constructs such as enjoying the experience of the pregnancy period, trusting one's ability to cope with motherhood duties, and being satisfied with becoming a mother and child care. Contentment and satisfaction with the pregnancy period and childbirth, minimizing problems and limitations, and keeping all aspects of mothers' health are all effective in the experience of mother from childbirth. Many items are at work in the childbirth experience, particularly the distance between home and hospital, how equipped the hospital is, medical expenses,

and even the number of previous children staying alone during the hospitalization of the mother.<sup>[3]</sup> Trusting one's abilities in coping with parental duties, called self-efficiency, is defined as the ability of parents to organize and perform a series of tasks to raise the child including power and the ability to organize and perform actions to produce better results and situations, which are very important in improving the role of the parents.<sup>[4]</sup>

Satisfaction with motherhood and parenting is another aspect of enjoying the mother's sense of maternal well-being. Merser (1986) maintains that satisfaction as a father and mother can be defined as a pleasurable sense and contentment, which includes maternal and paternal roles necessary for child care and relationship with the child.<sup>[5]</sup> During this period, mothers experience plenty of challenges, which can significantly influence enjoyment and satisfaction of child care.<sup>[6]</sup> The importance

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of such factors is quite obvious during pregnancy and after childbirth. Because a pregnant woman should promote her physical and mental abilities to become a mother, her well-being is of prime importance compared to other stages of life.<sup>[7]</sup> The Alexander technique is one of the methods and behaviors used in improving health and mental well-being.<sup>[8]</sup> It is a motor skill which helps people how to treat their body. This method corrects body stance, relieves muscle contraction, and makes body movement easier. This technique is very helpful, especially during pregnancy when one must carry the embryo.<sup>[9]</sup> In fact, this technique claims that an improper body posture not only has a devastating effect on the body but also affects the psyche and well-being of the person involved. Alexander, as a technique involving different experiences, showed that it improves neuromuscular coordination and leads to a better performance of the individual as a part of the whole. Pregnancy is a period full of tension, and practicing the Alexander technique helps the mother to keep her balance.<sup>[10]</sup> This technique can be used in pregnancy in different cases. It decreases or even prevents irritation or pain in the back, shoulder, hip, knee, or feet, difficulty in breathing, digestion problems, carpal tunnel syndrome, boredom, and depression,<sup>[11]</sup> however, most of these items have not been studied enough.

Using this technique is beneficial after childbirth when the body slowly regains its former shape. Moreover, this technique helps create a positive attitude towards changes taking place in family roles. The basic principles of this technique are very easy; they provide comfort and convenience.<sup>[12]</sup> When physical structure of the mother is free from pain and tension, she would have a positive outlook about life, and maternal well-being improves as a result.<sup>[8]</sup> There is definite evidence about the fact that physical exercise decreases depression and anxiety and improves women's well-being by creating a positive outlook.<sup>[13]</sup> Because this technique is a subcategory of massage therapy of complementary medicine, it can be implemented by midwives.<sup>[14]</sup> Bahadoran *et al.* (2012) showed that physical exercise improves maternal well-being and decreases depression.<sup>[15]</sup> Moreover, Deli *et al.* (2007) showed that teaching well-being promotion behaviors such as exercising is an effective way to cure depression and other postpartum problems.<sup>[16]</sup> In a study by Margarret Christel (2001), the Alexander technique was used as a powerful method to improve mental and physical well-being in connective tissue disorders. She believed that this technique is a tool to improve physical health and a sense of well-being because of meditation and attention to everyday life activities.<sup>[17]</sup>

Mother's mental disorder can have negative effects on family performance, as well as the cognitive, emotional, and social development of the child apart from short-term side effects. Therefore, interventions in the prenatal period seem to be integral in improving the mother's mental well-being.

The Alexander technique is the type of method that can be used very easily. Moreover, the application of this technique is inexpensive and affordable because it does not require any special expertise and equipment.<sup>[18]</sup> This study aimed at studying the effects of the Alexander technique on enjoying motherhood sense of maternal well-being in women who went to health care institutes in Golpayegan.

## Materials and Methods

In 2014, this study was a clinical trial conducted in two phases. In the first phase, research tools were prepared and tested for reliability and validity. In the second phase, the Alexander technique was implemented concerning the provided scale. Further, its effects on the dependent variable of the study were reviewed. This was a single-blind clinical trial with Code IRCT2016091529824N1 in research and clinical trial intervention.

First phase: The sample included 226 individuals who visited the postpartum unit in a clinic in the Shahid Beheshti Hospital in Isfahan. The sample was divided into two parts for cross-sectional validity – exploratory and confirmatory factor analysis was 123 individuals for the former and 103 for the latter. In exploratory factor analysis, factor loads are located on distinct factors. The squared factor loading is the percent of variance in that indicator variable and must be more than 0.35,<sup>[19]</sup> hence the items with factor loading less than 0.35 were deleted. Eigen values on the other hand must be more than the unit. They are used to condense the variance in a correlation matrices.<sup>[20]</sup> Confirmatory factor analysis consists of three categories: absolute, comparative, and Chi-square index. The first two categories should be higher than 9.0, and Chi-Square index should not be meaningful. Both samples were between 18 and 35 years old with a standard deviation of 7.47 and mean of 27.61; 23% were employed. Sampling was easily done. The sample size was determined using the Murphy and Meyers table (1999) that allows us to determine the sample size needed to achieve power of 80% as a function of effect size. Standard mean difference for Alexander technique in pilot study was 46% (equivalent to percentage of variance accounted for independent variable of 0.05). In Murphy and Meyers table  $V_1$  denote for the substantive hypothesis being tested and  $V_2$  for the error term and N for sample size equal to  $v_1+v_2+1=226$ .

Initially, the research tool consisted of 25 questions, however, the number was reduced to 18 after eliminating 7 questions in 3 stages. (1) Content Validity Ratio lower than 85.0 according to feedback received from 15 midwifery professors. (2) Cronbach Alpha which increases 15% compared to Cronbach alpha coefficient mean through eliminating some questions. (3) Factor load lower than 0.35 (Gorsuch criterion).

The second phase of the clinical trial was implemented in Isfahan University of Medical Sciences in Golpayegan in

Isfahan province during 2014–2015. It was a dual group research (test and control) – one phase with multi-variables and one blind direction from research units.

Sampling selection method was convenient. The number of samples in each group was 44 patients (88 patients in total). The confidence coefficient of Z1 was 0.95, i.e., 1.96; power factor of  $z^2$  was 0.80, i.e., 0.84; and  $s$  was the minimum estimation of standard deviation for each variable and  $d$  was the minimum mean difference for each of the variables between the two groups. Furthermore, due to the loss of the samples (20%) as well as the type of research. Finally, 110 samples were selected.

Subsequently, they were randomly placed into the intervention and control groups in such a way that reception of units being studied was dedicated one day to the intervention group and one day to the control group. The entry criteria of the study were age (between 18 and 35, 28 weeks of pregnancy and higher), safe pregnancy without risking items, decision to become pregnant, no history of chronic medical conditions, and lack of stressful events (according to the Holmes-Rahe 5 items scale) during the study, which was determined by questions from the unit under study.

The experimental group participated in childbirth preparation classes for 8 sessions of 1.5 hours (50 minutes of training in the Alexander technique and 40 minutes of training in the content about childbirth preparation classes) held once a week with 5–10 individuals per session. The content of the classes was decided on based on the book compiled from the Treatment Assistance for this class and the Alexander technique exercises were explained by the researcher instead of relevant exercises including:

proper position of the head and neck, proper stance and walking, proper way of sitting and getting up, proper way of sleeping, proper way of bending and picking up objects from the floor, working in a state of bending, the proper way of holding the baby while breast-feeding, and the correct method of standing or sitting while changing diapers and hugging baby. After this stage, every participant of the experimental group repeated this process and the researcher helped them do every movement correctly. Then, they were recommended to repeat all of the movements in their life style and everyday movements. There was a phone call once a week with individuals under the study in the experimental group to endure doing all the exercises both in the prenatal and postpartum period during the study until day 40. We used methods of making a speech, role modeling, play and movie given the educational content.

The control group received instructions of childbirth preparation classes and the relevant exercising movements. At the end of the postpartum period, that is day 40; the maternal well-being questionnaire was completed using interviews or self-reports from both groups. Moreover, part of the questionnaire was dedicated to individual characteristics-fertility of the sample studied.

The data were analyzed using factor analysis statistical methods and variance analysis by the Statistical Package for the Social Sciences software (version 16, SPSS Inc., Chicago, IL, USA) and Independent  $t$  test, Mann-Whitney, chi-square test or Fisher's exact test, analysis of variance test was used boxes and Levine test.

**Table 1: Exploratory factor analysis scales questions “enjoying the sense of motherhood”**

Row	Factor 1	Factor 2	Factor 3	Cronbach's alpha	Special amount	Variance explained	Cronbach's alpha	Validity coefficient	CVR
1	0.69	0.26	0.24	0.81	3.24		0.76	0.57	0.87
2	0.64	0.82	0.19	0.77					
3	-0.59	0.13	0.23	0.77					
4	0.58	0.27	0.17	0.77					
5	0.57	0.29	0.25	0.75					
6	0.56	0.25	0.18	0.71					
7	0.17	0.64	0.23	0.73	2.76	0.91	0.70	0.55	0.91
8	0.29	0.61	0.29	0.72					
9	0.32	-0.59	0.26	0.72					
10	0.27	0.55	0.21	0.75					
11	0.26	-0.52	0.26	0.71					
12	0.24	0.50	0.27	0.69					
13	0.31	0.25	0.61	0.83	2.38		0.76	0.59	0.85
14	0.51	0.28	0.57	0.77					
15	0.29	0.14	0.55	0.75					
16	0.23	0.31	0.53	0.76					
17	0.28	0.29	-0.51	0.74					
18	0.23	0.11	0.49	0.73					

CVR: Content Validity Ratio



## Ethical considerations

All research units were required to have a testimonial signed with personal signature to enter sampling, and they were accepted in Ethics Committee of the University of Medical Sciences with the Code 3935992.

## Results

Table 1 shows the results of explanatory factor analysis. There were 3 factors after 26 circulations or orthogonal analysis each of which determines 90% of the variance related to “enjoyment from motherhood sense.” Based on the content of the questions, the subscales were named (enjoyment of experiences of childbirth period, trust in one’s ability to cope with duties of the mother, satisfaction with motherhood and childcare). In the first phase of study, cross validation with 103 individuals from pregnant women who participated in the study tested via confirmatory factor analysis (CFA). CFA result were acceptable fit indexes were more than 0.9 and Chi-square divided by degree of freedom is less than 3 and residual indexes are lower than 0.05.

Demographic variables in two groups of mothers are equivalent ( $P=0.20$  for age,  $P=0.25$ ,  $Z=15.1$  for education and  $P=0.94$ ,  $\chi^2=11$ , all of them are nonsignificant).

There was no significant difference between the two groups in terms of the economic status, which they declared, ( $P = 22.2$  and  $\chi^2 = 14$ ) and pregnancy ranking ( $P = 47$  and  $Z = 72$ ). Moreover, there was no significant difference between groups of spouses in terms of age ( $P = 17$ ) and education ( $P = 56$  and  $Z = 58$ ). Therefore, the results showed that individual characteristics including the mother’s age, spouse’s age, education of the mother and spouse, economical status, and pregnancy period between control and experimental groups were the same, and there was no significant difference between them.

Comparison made between the mean scores of the constructs in the two groups shows that the mean scores of the constructs of enjoying the experiences of pregnancy ( $P = 0.001$ ) and motherhood and child care satisfaction ( $P = 0.001$ ) in the experimental group were significantly higher than those in the control group. Moreover, the construct of trusting the mother’s ability to cope with maternal duties ( $P = 0.01$ ) did not show a significant difference between the two groups.

## Discussion

The results of exploratory factor analysis were in line with similar constructs done by Bahadoran (2011). Similarly, confirmatory factor analysis approved its factor construct, which can be used to compare medical methods with the purpose of enjoying motherhood sense. We cannot use question-answer skills (IRT) due to the small size of the sample (below 1000 individuals), however, the results

approve exploratory and confirmatory factor analysis of construct reliability. Content validity coefficients were also acceptable. Validity coefficient showing credit criteria and solidarity of every scale with the question including general meaning of the scale was also acceptable. The findings of the study show that enjoyment of maternal well-being sense in the experiment group was significantly higher than the control group, indicating that mothers who underwent training and instruction of the Alexander exercise were in a much better shape in terms of enjoyment of motherhood sense compared to the control group. These results were in line with the study reported by Emily Norman *et al.* titled “physical exercises and one educational program to improve well-being of mothers newly gave birth” in Melbourne University.<sup>[22]</sup> Findings of this study showed that physiotherapy exercises and one educational program were effective in improving mothers’ well-being. In this study, we considered physical exercises and the educational program equal to the Alexander technique because Alexander techniques also focus on proper physical exercises.

Bahadoran *et al.* (2012) reviewed the relationship between physical activities in the postpartum period with motherhood well-being and depression level.<sup>[15]</sup> Their findings showed that there was a relationship between physical activities in the postpartum period and maternal well-being in that mothers who had an average or heavy physical exercises experienced a higher well-being score.

Table 2 shows that the enjoyment components of prenatal experiences in the experimental group were significantly higher than the control group. Therefore, prenatal experiences in the experimental group were higher than the control group in terms of enjoyment. Results of the studies done by Bayrami *et al.* titled “prenatal experiences of first time mothers in 2011” showed that five major themes, which had minor ones, included physical and psychological transformations were considered as delivery experiences.<sup>[23]</sup> The minor theme in the physical change was pain and it was fear of psychological change. As Illana Makavar (1998) in a study titled “Alexander in childbirth” showed, this technique was very helpful in even better process of childbirth, and we can educate pregnant mothers to cope with pain rather than escaping or eliminating it. We can control muscular tension voluntarily and knowingly instead of bending, stretching, and pulling the head backward and downward. It is important for mothers to move freely to alleviate the pain. Salivating is one way for the body to reach a relaxed state. The person will permeate tension in face or cheek through smiling or thinking of smiling in the Alexander method. Such pressure on salivary glands results in secretion.<sup>[24]</sup> Therefore, the Alexander technique can make childbirth experiences more pleasurable and improve such constructs in the experimental group by controlling psychological and physical themes, which are fear and pain.

**Table 2: Comparison of two groups in three components of enjoying the sense of motherhood**

Row	Component of enjoying the sense of motherhood	Experimental Group			Control Group			Mean square	F	The significance level	Eta Square	Statistical power		
		Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation						Minimum	Maximum
1	Enjoying the experience of child birth	26.70	2.50	18	30	23.80	3.10	17	29	177.55	22.64	0.001	0.20	0.99
2	Confident of their ability to cope with the tasks of motherhood	20.80	3.90	10	30	19.30	2.90	12	27	45.10	3.75	0.01	0.04	0.48
3	Maternal satisfaction and care of children	26.80	2.90	16	30	25.10	2.10	16	29	62.22	7.78	0.001	0.08	0.78

Given satisfaction construct with motherhood and childcare (the other construct is enjoyment of motherhood sense of maternal well-being), the findings of the study showed that the mean score in this construct was higher than the control group, and was significant as well. In other words, satisfaction with motherhood and child care in the experimental group was in a better state compared to the control group. The results are in line with those of Elahidust (2013) which are associated with effective factors in breastfeeding.<sup>[25]</sup> Elahidust states that individual factors are among effective factors in breastfeeding including biophysical, mental-motherhood, awareness, and preparedness of the mother. These factors are influenced by motherhood emotions, relaxation, self-confidence, and the person's beliefs. In the experimental group, the biophysical factors of the mother including physical weakness and fatigue are controlled by the following items, such as proper breastfeeding because of implementing the Alexander technique. Psychological factors of the mother including calmness, self-confidence, patience, conscience, and motherhood kindness will be improved. Because awareness and preparedness of mothers increased as a result of education in breastfeeding, proper act of breastfeeding, keeping the expressed milk and other factors related to breastfeeding all help mothers to improve their satisfaction with motherhood and childcare.

Bahadoran *et al.* (2012) dealt with the relationship of physical activity after delivery with maternal well-being and the depression level, in which the variable which had a more significant relationship with physical activity was trusting in the ability to handle motherhood duties. This was the only factor which was not significant in this study. Providing education is the factor that made a difference in this study compared to the Bahadoran's study from the author's point of view. Because mother's self-confidence in accepting the new role and adaptation with the new life responsibilities are considered to be important factors, self-confidence in mothers can be improved through necessary education, because in case of higher knowledge level, families can make sound decisions according to their needs and values. Moreover, this will decrease anxiety and improve abilities and adaptation to new situations,<sup>[15]</sup> Another study by Bahadoran (2000), in which he studied the effects of participation in prenatal preparation classes on vitality and positive emotion, showed that education and holding preparation classes for childbirth will lead to recovery of calmness and self-confidence in the mother.<sup>[26]</sup> Therefore, we can conclude that because prenatal preparation classes provide education in different issues, such as childcare, breastfeeding, newborn danger signs, and so on, and both control and experimental groups participated in such classes, there was not a significant difference in terms of the construct under study. The limitations of the study, namely personal and social differences affecting positive

mood, such as genetic differences and differences in mood and personality type, nutrition, family support and regular physical activity of the individual (such as a daily walk) are likely to have little impact on the results; however, in this case this impact was insignificant because the samples were randomly assigned to two groups.

## Conclusion

The current study showed that the Alexander technique could improve newborn's well-being and mother's mental health and enjoyment of motherhood sense. Therefore, a close scrutiny of this technique is recommended to the medical staff and pregnant women and implementing it in the prenatal and postnatal period.

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## Conflicts of interest

There are no conflicts of interest.

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