

# ORIGINAL ARTICLE

## The Effect of Virtual Education in Parenting Skills on the Parenting Sense of Competence in First-time Mothers with a 0-2-year-old Baby: A Quasi-experimental Study

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### ABSTRACT

**Background:** Parental competence is a key aspect of parenting. Since they have no previous experience of having a baby, first-time mothers should acquire certain skills to be competent enough in caring for their baby. The present study aimed to investigate the effect of virtual education in parenting skills on the parenting competence of first-time mothers with a 0-2-year-old baby.

**Methods:** This quasi-experimental study was conducted through convenience sampling; 72 first-time mothers were selected from 12 healthcare centers, 62 of whom met the criteria for entering the study, and divided into an experimental (n=31) and a control (n=31) group. The mothers in the experimental group received virtual education in parenting skills in six sessions, each lasting 10 minutes for two weeks. The data were collected using a demographics questionnaire and Gibaud-Wallston's parenting sense of competence scale. Sense of competence was assessed in three stages: before, immediately after, and one month after the completion of the intervention. The collected data were analyzed using SPSS v. 22 at a significance level of less than 0.05.

**Results:** Results showed a statistically significant increase in the experimental group's parenting competence mean score immediately and one month after the intervention ( $P < 0.001$ ). There was a statistically significant difference between the mean scores of the study groups as measured immediately after ( $P = 0.043$ ) and one month after the intervention ( $P < 0.001$ ).

**Conclusion:** Virtual education of parenting skills could have a positive impact on the mothers' parenting competence. It is suggested that first-time mothers should be educated in parenting skills on a face-to-face basis in maternity wards and online after discharge.

**Keywords:** Virtual education, Parenting skills, Parenting sense of competence, First-time mother

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## INTRODUCTION

The quality of infant care and mother-infant interactions is influenced by a variety of factors, one of the most important of which is parental competence. Women with a strong sense of competence and high satisfaction with their role as a mother have a secure attachment style and display responsible and sensitive parenting behaviors which facilitate the growth and development of their infants.<sup>1</sup> Moreover, women with a stronger sense of competence are more determined to perform their duties as a mother, avoid self-reproach, and achieve higher levels of achievement and satisfaction in their mothering.<sup>2</sup> In Iran, approximately 70000 babies are born to primiparous mothers every year.<sup>3</sup> A variety of factors impact the development of a sense of mothering competence, and different studies have reported different results regarding the influence of those factors.<sup>4,5</sup> Such characteristics in mothers as age, marital status, education, depression, number of pregnancies, perceived social support, pleasure from child labor, and perception of the nature of their infants are among the influential factors in their development of a sense of competence.<sup>6</sup> Parenting competence includes parents' knowledge, skill, and experience in raising children and enables them to successfully fulfill their duties as parents, thereby preventing crises or coping with them if they come up.<sup>7</sup> One of the factors which determine the parents' influence on their children is parenting style, which is classified into four types: authoritarian, authoritative, permissive, and uninvolved. Parenting styles reflect the nature of parents' communication with their children.<sup>8,9</sup>

As a very important obligation which is not comparable to humans' other responsibilities, parenting is a skill which can be improved through education. Parenting sense of competence is defined as parents' self-efficacy and perceived satisfaction with their parenting role, which reflects their conviction that they are capable of effectively performing their parenting role.<sup>10</sup> It is essential that parents, especially mothers, be aware of the impact of

different parenting styles on their children's mental and behavioral states and personality development. In a wide spectrum of clinical interventions, parents are regarded as the key factor in changing their children's anti-social behaviors.<sup>11</sup> Studies show that most first-time mothers have a poor sense of competence in performing their duties as a mother, which is largely because of their lack of experience. Educating mothers in parenting skills results in better mother-child outcomes, including elevated self-efficacy and reduced anxiety and stress.<sup>12, 13</sup>

Research shows that parenting competence is a crucial matter which deserves more attention. The spread of COVID-19 resulted in the development of online learning and employment of e-learning systems.<sup>14</sup> During the pandemic, face-to-face education was limited, and learners had to be educated by virtual means. Thus, virtual education, which allows for distance learning at any time and place and management of prevention of the infection, became very popular.<sup>15</sup> The spread of COVID-19 across the world, including Iran, necessitates full observance of health protocols and social distancing.<sup>16-18</sup> Accordingly, face-to-face education has been restricted and replaced by virtual education.<sup>19</sup> Since the role of parenting skills and its impact on parenting competence of new mothers in Iranian society has received little attention, the current study aimed to investigate the effect of virtual education in parenting skills on the parenting competence of first-time mothers with a baby under 2 years of age.

## MATERIALS AND METHODS

This is a quasi-experimental study conducted from June to September 2021 at 12 healthcare centers in Shiraz University of Medical Sciences. These centers were selected via cluster random sampling. Given a 95% confidence level and 80% power, and based on the results of Azmoude et al.'s study<sup>12</sup> and considering a loss-to-follow-up rate of 20%, the sample size was estimated 72 individuals, using the following formula:

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 (sd_1^2 + sd_2^2)}{(\mu_1 - \mu_2)^2}$$

Seventy-two mothers were selected using convenience sampling (six mothers from each center), and 62 of them were included in the study based on the inclusion criteria. The inclusion criteria were being literate, living with one's spouse, being a first-time mother with an only child aged 0- 2 years, not having a medical or psychological disorders, not having a history of hospitalization before or after childbirth (except for delivery), not having a baby with congenital abnormalities, not attending parenting workshops before the study, being available by phone, having access to the Internet and social media apps, and being willing to participate in the study. The mothers who had one absence during the education period or were not willing to continue the education during the study were excluded. After explaining the study goals, we asked the subjects to complete a written informed consent form at the site of their healthcare center. Subsequently, they completed electronic versions of a demographics questionnaire, and Gibaud-Wallston's parenting sense of competence scale on online software in the Persian language (Porsline) was used to design an electronic web-based questionnaire for collecting the data. Mothers were enrolled in the study using convenience sampling, and then divided into an experimental (n=31) and a control group (n=31).

The mothers in the experimental group received routine care for their children and also were added to a WhatsApp group administered by one of the researchers; they attended educational training on parenting in six 10-minute sessions for two weeks (3 sessions at every week) using content creation (audios and podcasts) on various main topics: parenting styles, characteristics of different parents, principles of child raising, parents' treatment of children, and children's mental health. The educational content was derived from valid sources on parenting skills and

verified by a panel of experts.<sup>20</sup> At the end of each week, the researchers conducted group discussions to evaluate the participants' comprehension of the educational content, answer their questions, and ask for feedback. The mothers in the control group did not receive any education in parenting and were only introduced to some routine exercises for the development and learning of infants aged 0-2 years, including communication, gross motor skills, fine motor skills, problem solving, and personal-social issues.

Immediately and one month after the end of the intervention, the participants in both groups completed Gibaud-Wallston's parenting sense of competence scale online again. Since the participants were selected from different healthcare centers and education was provided virtually, there was no contact between the members of the experimental and control groups and, therefore, there was little chance of information transfer between the groups.

The personal characteristics such as age, level of education, marital status, number of children, employment status, place of residence, and the family's average monthly income were collected using a demographic questionnaire.

Mothers' sense of competence was evaluated using Gibaud-Wallston's Parenting Sense of Competence Scale (PSOC). It is a 17-item scale which developed by Gibaud-Wallston in 1978. In 1989, Mash and Johnston revised the questionnaire and reduced the number of items to 16. In the present study, the 16-item version was used. Each item is scored on a 6-point Likert scale from strongly disagree (6) to strongly agree (1). Scoring for seven items of this questionnaire including questions 1, 6, 7, 10, 11, 13, 15 is reversed, so that, for all questions, higher scores show greater positive parenting experience. Mash and Johnston (1989) reported the Cronbach's alpha of internal consistency of the entire scale 0.79.<sup>21</sup> In Iran, Sarabi et al. (2011) translated the scale into Persian and had its content validity verified by a panel of experts.<sup>22</sup> In a study by

Azmoudeh et al. (2014), the content validity of the scale was measured qualitatively and quantitatively. In the qualitative stage, the scale was translated and given to a panel of experts, along with the original English version, and their suggestions were used to revise the instrument. In addition, the content validity index and content validity ratio of the instrument were calculated and verified. The reliability of the scale was calculated in terms of its internal consistency, and Cronbach's alpha was reported 0.71.<sup>12</sup>

The collected data were analyzed using SPSS version 22.0 for windows (IBM SPSS Inc., Chicago, IL, USA). The significance level was set at  $P < 0.05$ . Descriptive statistics including mean, standard deviation, and frequency were used. Friedman and Mann-Whitney tests were used for comparison of parenting sense of competence mean scores within and between the groups.

The present article was extracted from a master's thesis in nursing. Ethical approval

was obtained from the Ethics Committee of Shiraz University of Medical Sciences (IR.SUMS.REC.1400.136). Before the study, all the participants in both groups gave their written informed consent. The participants were assured that their information would remain confidential and would only be used for research purposes. Also, the participants were free to withdraw from the study at any point without any effect on their children care.

**RESULTS**

In this study, 62 mothers were enrolled, most of them were housewife and had a fair monthly income level. Before the intervention, there were no statistically significant differences between the experimental and control groups in terms of their demographic features ( $P > 0.05$ ) (Table 1). The mean age of the participants in the experimental and control groups was  $29.20 \pm 5.91$  and  $28.10 \pm 4.63$  years, respectively.

Table 2 shows the impact of education

**Table 1:** Frequency distribution of the demographic variables

Variable	Intervention group (n=31) N (%)	Control group (n=31) N (%)	P value
Level of Education			
High-school diploma or less	13(41.94)	12 (38.70)	0.887*
More than high-school	18(58.06)	19 (61.30)	
Occupation			
Unemployed	0(0)	1(3.2)	0.789**
Farmer	1(3.2)	0(0)	
Housewife	19(61.3)	18(58.1)	
Freelancer	4(12.9)	3(9.7)	
Public servant	7(22.6)	9(29.0)	
Income level (Iranian Rial: IRR)			
Less than 10 million	1(3.3)	0 (0)	0.824**
10–20 million	5(16.7)	6 (20.7)	
More than 20 million	25(80.0)	25 (79.3)	

\*Mann-Whitney test; \*\*Kruskal-Wallis test

**Table 2:** Parenting sense of competence mean scores in the experimental and control groups before and after the intervention

Group	Parenting sense of competence scores (Mean±SD)			P value
	Before intervention	Immediately after intervention	One month after intervention	
Intervention	51.26±1.17	55.13±0.95	55.73±0.99	<0.001**
Control	51.64±1.15	52.54±0.93	48.71±0.97	0.191**
P value	0.977*	0.043*	<0.001*	

\*Mann-Whitney test; \*\*Friedman test

in parenting skills on the experimental and control groups. The results showed a significant increase in the experimental group's parenting competence mean scores as measured immediately after and one month after the intervention ( $P < 0.001$ ). On the other hand, the pretest and posttest mean scores of the control group were not significantly different ( $P = 0.191$ ) (Table 2). The findings showed that there was not a significant difference between the two groups' mean scores in the pretest stage ( $P = 0.977$ ). However, the posttest mean scores of the two groups were significantly different immediately after ( $P = 0.043$ ) and one month after the intervention ( $P < 0.001$ ). In the experimental group, the mean score of parenting sense of competence was significantly higher than the control group after the intervention (Table 2).

## DISCUSSION

The findings of the present study showed that the first-time mothers who were trained for parenting skills had significantly higher parenting sense of competence mean scores than pretest, immediately and one month after the intervention. It can show the positive impact of the intervention.

Competence in parenting and communication with the child is one of the most important qualities in a mother. A mother's competence depends on her knowledge of the aspects of a mother's role and her ability to play that role.<sup>6</sup> According to Gordo's study, parents who have been trained in and have better knowledge of how to communicate with their children and the vulnerability of their children are more competent in parenting.<sup>13</sup> Accordingly, it is essential that new parents be introduced to and educated in parenting skills. A study on the impact of a positive parenting educational program on parental stress in mothers who had a child with autism found that education in parenting skills reduced parental stress in the mothers and improved the quality of care they provided to their children.<sup>22</sup> Another study

investigated the impact of self-efficacy-based training on the maternal sense of competence of first-time mothers in caring for their infants and concluded that the experimental group who had been trained in self-efficacy skills obtained a higher maternal competence mean score than the control group after the intervention.<sup>12</sup> Since self-efficacy is regarded as an important component of parenting skills, the results of this study are consistent with the findings of the present study. Educating mothers in these skills makes a significant contribution to mothers' competence in caring for their children.<sup>12</sup> The results of a study showed that virtual education had a positive impact on the nurses' parental competence,<sup>23</sup> which is consistent with the findings of the present study.

In the present study, after the intervention, the experimental group's parenting competence mean score was higher than that of the control group. However, the difference between the two groups' pretest parenting competence mean scores was not significant, which indicates that education in parenting skills had a positive impact on the first-time mothers' parenting competence. Another study which aimed to investigate the impact of training in parenting skills on violence against children in Spain showed that development of these skills enhanced the parents' knowledge of parent-child communication, reduced violence against children and, consequently, improved the parents' relationship with their children.<sup>24</sup> Similarly, another study reported that educating parents in parenting skills improves the parent-child relationships.<sup>25</sup> Furthermore, training mothers in parenting skills improves self-confidence in mothers and their children and decreases the symptoms of depression in children.<sup>26</sup> Various studies have highlighted the significance of education in parenting skills and considered it to be integral to improving parent-child communication.<sup>25,26</sup> Another study found that this kind of education is effective in reducing the parents' stress and can, therefore, improve communication between mothers and their

children.<sup>27</sup> Zandipour's study showed that educating first-time mothers in parenting skills improved their perception of parenting.<sup>28</sup> The findings of all the mentioned studies are in the same line with the results of the present research. Educating parents in parenting skills and methods can empower parents in many areas. Improved parenting skills improve the parent-child relationship and promote the parents' competence in caring for their child and fulfilling their parenting role. Educating mothers in parenting skills raises their knowledge of their child and the way they should communicate with him/her. Also, educating mothers results in a positive change in their attitude to parenting and better performance in interacting with their child, which in turn contributes to their parenting sense of competence.

One of the strengths of the present study is that the mothers were provided with extensive education. Also, the mothers were educated during two weeks, a relatively short period which can result in better educational outcomes.

One of the limitations of the study is that due to the COVID-19 pandemic, the participants received virtual education. The researchers tried to keep the quality of education high and present the educational content effectively by asking and answering questions. Another limitation of this study is that we do not educate the fathers, and we only assess the mother's parenting competency.

## CONCLUSION

The findings of the study showed that virtual education of parenting skills for first-time mothers could have a positive impact on mothers' parenting competence. In view of the important role of parent-child communication and the need for improving the parents' parenting competence, it is essential that parents, especially mothers, be educated in parenting skills. Therefore, it is suggested that first-time mothers should be educated in parenting skills on a face-to-face basis in maternity wards and

online after discharge.

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**Conflict of Interest:** None declared.

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