



THE IMPACT OF EDUCATIONAL PROGRAM ON THE ANXIETY AND SELF-EFFICACY IN MOTHERS OF THE CHILDREN UNDER GLAUCOMA SURGERY: A RANDOMIZED CONTROLLED TRIAL

Azadeh Amiri¹, Mitra Edraki^{2*}, Maryam Paran³, SeyyedeFatemeh Sajjadi⁴

1. Instructor of Surgical Technology, Department of Surgical Technologists, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
2. Community-based Psychiatric Care Research Center, Instructor of Pediatric Nursing, Department of Pediatric Nursing, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
3. Instructor of Pediatric Nursing, Department of Pediatric Nursing, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
4. BSc in Surgical Technology, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

ARTICLE INFO

Received:

03th Jun 2017

Accepted:

29th Nov 2017

Available online:

14th Dec 2017

Keywords: Anxiety, Education, Glaucoma, Self efficacy

ABSTRACT

Background: Surgery is considered as a stressful experience for children and their parents. When parents, especially mothers, are in such a difficult situation, they experience anxiety and feelings of inadequacy, and cannot provide adequate protection and care for their child.

Aim: This study was conducted with the aim of determining the effect of educational program on the anxiety and self-efficacy of the mothers of children undergoing glaucoma surgery.

Method: This randomized clinical trial was conducted on 60 mothers of children undergoing glaucoma surgery in eye surgery unit of Khalili hospital, Shiraz. The mothers who met the inclusion criteria, were randomly assigned into experimental (n=30) and control groups (n=30). Two training sessions were held for the experimental group after glaucoma surgery. The control group received routine care. Anxiety and self-efficacy of mothers were measured using Spielberger State-Trait Inventory and Sherer's self-efficacy questionnaire in three periods: before the intervention on the child's admission, immediately after the intervention and two months after the intervention in both experimental and control groups. The data were analyzed by SPSS 18, using Chi-square, Fisher's exact, independent t-test and repeated measurements.

Results: The results indicated a significant decrease in the mean trait anxiety ($P < 0.001$) and state anxiety ($P < 0.001$) and a significant increase in the mean self-efficacy of mothers ($P < 0.001$) during the three studied periods in the intervention group. Furthermore the mean difference of state anxiety, trait anxiety and self-efficacy between the two groups was significant before, immediately after and 2 months after the intervention.

Implications for Practice: Presenting an educational program to the mothers of children undergoing glaucoma surgery is effective in reducing their anxiety and increasing their self-efficacy.

Copyright © 2013 - All Rights Reserved - Pharmacophore

To Cite This Article: Azadeh Amiri, Mitra Edraki, Maryam Paran, SeyyedeFatemeh Sajjadi, (2017), "the impact of educational program on the anxiety and self-efficacy in mothers of the children under glaucoma surgery: a randomized controlled trial" *Pharmacophore*, 8(6S), e-1173462.

Introduction

Primary congenital glaucoma is a rare inherited anomaly which is created due to a flaw in the evolution of Trabecular Meshwork and Anterior Chamber Angle, leading to disorder in the outflow of aqueous humor, increase in the Intraocular Pressure (IOP), Optic nerve damage, and loss of vision (1). The incidence of this disease varies from 1 in 1250 to 1 in 22000 births throughout the world (2). In most cases (about 70%), it was bilateral, and its prevalence was higher in boys (about 65%) (3). This disease is the cause of 0.01-0.04% of the total blindness and 5% of the blindness in children (1, 4). Timely diagnosis and treatment have a determinant role in the prognosis of the disease. The definitive treatment is surgery (1, 5).

In general, surgery, as a therapeutic approach, of any kind, is a stressful experience for the patient and his family because it is a threat against the body integrity and sometimes life (6). Anxiety is a kind of unclear feeling, concern, discomfort or

Corresponding Author: Mitra Edraki, Community-based Psychiatric Care Research Center, Instructor of Pediatric Nursing, Department of Pediatric Nursing, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.

apprehension that is often created due to exposure to unfamiliar situations, feeling of death, discomfort, fear, changes on the shape or function of the body, dependence increase, concern about family members, and potential changes in lifestyle(7). This feeling is from the most common emotions related to the stress experienced by children who need surgery and their parents. Therefore, not only the child, but also the parents, especially the mothers, as the most important supporters of the child during illness, have to be given special attention and support (8). Parents face conflicts between daily tasks and stay in the hospital when the child is admitted and requires surgery, so they have to adapt to this disorder in their routine life (8, 9). Most of the time, parents' anxiety is related to the severity of the illness and the methods of treatment to the child, and this anxiety is most visible during the therapeutic procedures (10). In the study of Fukuchi et al. which was performed on children undergoing tonsillectomy surgery and with the aim of examining their parents and their mental and psychological state, it was observed that most children and their parents had disturbances of mood and emotion(11). According to the performed studies, some sources of parents' anxiety include anesthesia and its associated risks such as brain damage after anesthesia, surgery failure and child death as a result, child's reaction to surgical experience, loss of control and separation, changes in the role of parents, lack of information, unit's environment, inadequate provision of child care at the time of discharge from the hospital, post-surgical changes in the appearance or behavior of the child and emotional reactions (8, 12, 13). Having anxiety and depression in parents can be accompanied by reduction in the sense of responsibility for caring, teaching and feeding their children. Furthermore, despite the parents' efforts, their anxiety is transferable to their children (9) and since the parents are considered as the most important people within the child support system, children with parents who have psychological problems will have more behavioral disorders (14), and they are more prone to anxiety and depression (15).

Another problem in relation to parents of children with chronic diseases and requiring surgery is their low self-efficacy. From the perspective of Albert Bandura, self-efficacy is the person's ability in doing a particular operation coping with a special situation. In other words, self-efficacy refers to the judgement of people about their abilities to fructify the performance designed levels (16). Parental self-efficacy is an important cognitive structure in relation to parental performance. Parental assessment towards their ability in performing the parental role is called parental self-efficacy (17). Low levels of self-efficacy in parents cause them to be more motivated to use negative parenting techniques, use the treatment programs and services provided to their child in lesser extent, and fail in deciding about choosing the most appropriate therapeutic strategies. This case can leave unwilling effects on the baby's growth (18).

Parents, in order to feel self-efficacious, need knowledge and information about the field of the disease and more effective ways of caring for their child (19). Teaching the parents by providing appropriate information about the child enables them to use more effective mechanisms of compatibility and have a more positive view. As a result, it causes the parents to accept their child's condition better and to feel ready to accept their role of caring about the child and promotion of his health, and this can increase self-efficacy and reduce anxiety in them (18-20). One of the main roles of the nurses is their educational role. Nurses, due to their professional responsibilities and close relationship with parents and children during hospitalization, are one of the most appropriate members of the health care team to educate parents, and they are able to support families having a sick child; they could increase their awareness and improve their attitude and performance in various fields of care and treatment(17, 21).

Based on the stated requirements and the special importance of the subject and given that few studies have been done on the impact of educational interventions on anxiety and self-efficacy of mothers of children admitted to the surgical units, the present study was done with aiming at determining the impact of the educational program on the anxiety and self-efficacy of the mothers of the children undergoing glaucoma surgery.

Methods

This randomized clinical trial study was done on mothers of children aged 1 to 3 years-old suffering from congenital glaucoma, hospitalized in eye surgery unit of Khalili hospital in Shiraz, Iran from April 2017 to August 2017.

According to a study by Edraki et al. which was done in 2014, aiming to determine the impact of educational interventions on the quality of life and self-efficacy of the mothers of children with congenital heart disease (19) and considering the values of $\alpha=0.01$, $\beta=0.01$ and with a drop-out rate of 10%, the sample size was determined 60 people (30 in each group), using the following formula:

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2 \times (s_1^2 + s_2^2)}{m_2 - m_1}$$

60 mothers who met the inclusion criteria were chosen based on purposeful sampling. Then, they were placed in one of the control or experimental groups by random assignment using the RA software and investigated and tracked within two months since admission to the time of the visit to the Eye Clinic. It is necessary to mention that until the end of the study, none of the samples was excluded from the study. [Figure 1] shows the diagram of mothers participating in this study. The inclusion criteria included the child having no history of hospitalization; the patient being the first child; the child being 1-3 years old; the mother having no psychological problems, and the mother not participating in the related training classes, and the exclusion criteria was the mother's unwillingness to cooperate in the study.

Information-gathering tools included three questionnaires of demographic information, Spielberger State-Trait Inventory and the Generalized Self Efficacy (GSE). The demographic information questionnaire included maternal features such as age, level of education, occupational status, family income level and the history of sedative medication as well as child's information including age, sex and number of admissions. This questionnaire was given to five faculty members to determine the content validity and necessary corrections were applied based on their comments.

Spielberger State-Trait Inventory measures the situational anxiety (state) and attribute (trait). This questionnaire contains 40 questions, and it is composed of two measures of state and trait anxiety, each of which including 20 questions. The scale of state anxiety evaluated the individual's emotions at the moment and at the time of answering (22). State anxiety is specified by a Likert scale of four degrees (very low, low, high, very high) and a score of 1 to 4 is given to each of the options, respectively. The total scores of this scale are in the range of 20 to 80. In this scale, a score from 20 to 31 is considered mild

anxiety, 32 to 42 medium to lower anxiety, 43 to 53 medium to high anxiety, 54 to 64 relatively severe anxiety, 65 to 75 severe anxiety and 76 to 80 very intense anxiety. The trait anxiety scale measures the usual emotions of individuals in most of the times (22). Trait anxiety is specified by a Likert scale of four degrees (almost never, sometimes, most often, almost always) and a score of 1 to 4 is given to each of the options respectively. In this test, the attainable anxiety score is between 20 to 80. In the trait anxiety scale, a score from 20 to 31 shows mild anxiety, 32 to 42 medium to lower anxiety, 43 to 52 medium to high anxiety, 53 to 62 relatively severe anxiety, 63 to 72 severe anxiety and 73 upwards very severe anxiety. Validity and reliability of Spielberger State-Trait Inventory have been approved in numerous studies, and those of this questionnaire were studied in Iranian society as well in the study of Marian in 1372. In this study, the coefficient of test reliability was investigated and separated into two groups of norm and criterion. The reliability ratings for the norm group (600 people) in state and trait anxiety scale based on Cronbach's alpha were 0.91 and 0.90, respectively, and in the criterion group (130 people) it was equal to 0.94. Also, for the validity of this study, the concurrent criterion method was used. The differences in the average anxiety of the norm and criterion society were significant in all age groups and at two levels of 0.05 and 0.01, indicating the validity of the test in measuring anxiety (23).

The Generalized Self Efficacy (GSE) Scale, which was designed in 1982 by Sherer et al, is used to measure self-efficacy and includes 23 items. 17 of these 23 items are about public self-sufficiency and 6 other items about self-efficacy experiences in social situations. Of the 17 items, self-efficacy scale is used in this research, including 17 five-option questions that are from "I fully agree" to "I totally disagree." The questionnaire scoring method is in a way that 1 to 5 points are given to each section. The score of items number 13, 9, 8, 3, 1 and 15 increases from the right to left. Other items are inversely increasing, i.e. from the left to right. The lowest score is 17, and the highest is 85 (24). Sherer et al. reported Alfa Cronbach, 79% for this questionnaire in 1982 (25). In a study conducted by Beirami in 2008 aiming to find the influence of the teaching emotional intelligence on self-efficacy and mental health of students, internal consistency of the test through Cronbach's alpha test was obtained 79% (26). In the study of Asgharnezhad et al. in 2006, psychometric properties of Sherer's Public Impact Scale were investigated and the coefficient of internal consistency of this scale was reported 83% (27). In Najafi et al.'s research in 2007 on self-efficacy and mental health of high-school students, test reliability with Cronbach's alpha was reported 80%. Concurrent validity of the questionnaire through the implementation of Symptom checklist-90 revised (SCL-90-R) was reported 0.45 (24). After approval of the Ethics Committee of the University of Medical Sciences and obtaining the permission to conduct the research from Khalili Hospital, the researcher provided the mothers with necessary explanations about the research and emphasis on the confidentiality of the information for eligible mothers and obtained the written consent from them.

The intervention in mothers of the experimental group included holding two training sessions with one-week interval. The first session included educating the mothers about the illness and the process of child recovery, by giving them lectures, holding question and answer sessions and by providing them with a booklet; it was held when the child was admitted to the surgery unit. The second session was held a week later when the mothers referred to the clinic; the training was in person and individually, about the care required after the transfer of the child based on the booklet by the researcher. In each training session, enough time was spent for them depending on the amount of comprehension and the needs of mothers and for their full justification. No educational intervention was performed for mothers in the control group. Data collection was done by completing the mentioned questionnaires by mothers in three stages of time: before intervention when admitting the child, immediately after the intervention and two months after the intervention for both groups; and sufficient explanation about completing questionnaires was given to the mothers before completing the questionnaires by them. In order to prevent the exchange of information between the two sampling groups, we performed the intervention for each group at different time periods.

Questionnaire coding method was used for ease of processing information contained in the questionnaire and its analysis by computer. The data were analyzed through SPSS, Version 18, using descriptive statistics methods (mean, standard deviation, percentage of frequency) and inferential methods (Chi-square test, Fisher's exact, independent T and repeated measurements). Assuming the normalization of data before the tests were confirmed by Kolmogorov-Smirnov test. A P value less than 0.05 was considered significant.

Results

In this study, 60 mothers of children with congenital glaucoma were examined. [Table 1] shows the demographic characteristics of the mothers and children for the two experimental and control groups. Based on the results of the study, there was no statistically significant difference between the two experimental and control groups in terms of demographic characteristics of the mother and the child.

According to [Table 2], no significant difference was found between the study groups regarding the trait anxiety ($P=0.97$), state anxiety ($P=0.87$) and self-efficacy ($P=0.80$) before the study. However, the repeated measures test shows a significant decrease in the mean trait anxiety ($P < 0.001$) and state anxiety ($P < 0.001$) and a significant increase in the mean self-efficacy of mothers ($P < 0.001$) during the three studied periods in the intervention group. In the control group, the mean trait anxiety significantly increased ($P < 0.027$) and the mean self-efficacy significantly decreased ($P < 0.004$) over time.

According to [Table 3], the mean difference of state anxiety, trait anxiety and self-efficacy between the two groups was significant before, immediately after and 2 months after the intervention ($P < 0.001$).

Discussion

This study was performed with the aim of determining the effectiveness of the educational program on the anxiety and self-efficacy of the mothers of children undergoing glaucoma surgery. Findings of the study suggest a significant reduction in the mean state and trait anxiety in the mothers of the experimental group immediately, and two months after intervention compared with mothers in the control group. In the other words, it can be concluded that educational intervention can significantly reduce the state and trait anxiety in mothers of children undergoing glaucoma surgery. Related studies have been done in the past whose findings are consistent with this study. A study with the aim of determining the effect of pre-surgical training program on parental anxiety of the children undergoing surgery was done by Reshma Aranha et al. in 2016 and the amount of anxiety of the parents after surgery was measured using the Spielberger state and trait anxiety inventory; the results showed that pre-surgical training program significantly reduced the parents' anxiety during the mentioned time (28). In a study by Tabrizi et

al. in 2015, the effect of pre-operative training about anesthesia and surgery was checked out on the anxiety of the children aged 8-10 years old and their mothers. The results indicated that educational intervention significantly reduced pre-surgery anxiety in children and mothers. Also, the most frequent causes of anxiety in mothers and children were reported to be fear of anesthesia and surgery and lack of awareness of upcoming events (29). In a study by Mehdizadeh et al., conducted in 2015, the effect of educational support program on the anxiety of mothers of children under lumbar puncture (LP) was investigated; the results suggest a significant reduction in mothers' anxiety in the experimental group compared with the control group (30). The study by Enadi et al. in 2013 showed that education can reduce the state anxiety of mothers of children with urinary tract infection in the hospital (31). Tseng in 2009 mentioned one of the most important factors associated with parents' situational anxiety was the amount of their awareness about their children's illness. Parents who had more information regarding their child illness experienced less anxiety (32). One of the major causes of anxiety is fear of the unknown. Knowing is essential in reducing the fear of the unknown that can reduce anxiety and improve parental outcomes (33). Furthermore, predictability and controllability of the situation play an important role in reducing anxiety (31). In this study, educating the mothers about the nature of the disease and the treatment process seems to make the stressful situation of child's hospitalization and surgery more predictable for them and increase their ability to adapt and deal with this situation, thereby reducing their anxiety.

Another finding of this study was the significant increase in the mean self-efficacy of the mothers in the experimental group immediately after and two months after the educational intervention compared with the mothers of the control group. In other words, educational intervention can lead to a significant increase in self-efficacy of the mothers of children undergoing glaucoma surgery. The result of this study is consistent with that of the study of Edraki et al., which was done in 2012 with the aim of determining the impact of educational program on the quality of life and self-efficacy of mothers of infants with congenital heart disease. The results of this study showed that providing an appropriate training program for mothers of infants with congenital heart disease significantly increases the self-efficacy score in them (19). In another study done by Gholami et al. in 2014, the effect of the educational support program on the self-efficacy of mothers of children with epilepsy was investigated; the results indicated a significant increase in the self-efficacy scores in the experimental group compared with the control group (34). The findings of this study are also consistent with the results of the present study. In this regard, the results of the study by Barlow et al., moreover, showed that after providing educational and support programs for the mothers of children with disabilities, their self-efficacy score increased significantly (35). On the other hand, in the study of SarabiJamab et al. which was done to evaluate the effectiveness of education on the self-efficacy of mothers of children with autism in 2010, no significant increase was observed in the self-efficacy of the mothers after training. Limited attention to emotional problems, matrimonial matters and lack of social protection in these parents may be effective factors in lack of increase in self-efficacy in this study (18). In line with the present study, the relationships between self-efficacy and characteristics of the mothers were investigated in Coleman and Karraker's studies; according to the results of this study, high self-efficacy was more observed in mothers with fewer emotional problems and they were better trained (36). Based on the results of the present study, it seems that reduction in mothers' anxiety as the result of receiving the training has been effective in increasing their self-efficacy. Parents need knowledge and information about the disease, treatment modality and the effective ways of caring for their child to enhance the feeling of self-efficacy (17). In this regard, implementing educational programs for parents is effective and can increase knowledge, improve performance and subsequently increase self-efficacy in parents by providing the information they need.

One of the limitations of the current study was its small sample size and lack of access to more subjects due to time limitations. It is therefore suggested to carry out this research with a larger sample size to have more generalized results.

Another inevitable limitation of the present study was the possibility of receiving information about the disease, treatment modality and child care from the treatment team in two groups.

Another limitation of the present study was that because of the restrictions on access to the fathers, this study was conducted only on mothers of children with congenital glaucoma undergoing surgery. Considering that fathers are also considered as the most important people in the child support system, it is recommended that in the future researches fathers should also participate. Furthermore, in order to better generalize the results, it is suggested that further studies should be done using other research tools.

Implications for Practice

According to the results of the present study, training the mothers of children undergoing glaucoma surgery can reduce their anxiety and increase their self-efficacy. Nurses, as people who have close communication and interaction with parents and children during hospitalization, can play an effective role in improving the self-efficacy and reducing the anxiety of parents by relying on their science and experience and providing a suitable training program.

Acknowledgment

This article is the result of a research project approved by Shiraz University of Medical Sciences numbered 95-01-86-13486, and recorded at the clinical trial registration center by IRCT201704032432N4 code. Hereby, we would like to thank the Research Deputy of Shiraz University of Medical Sciences, authorities and the staff of Khalili Hospital and all the mothers participating in the study. The authors would like to thank Shiraz University of Medical Sciences, Shiraz, Iran and also Center for Development of Clinical Research of Nemazee Hospital and Dr. Nasrin Shokrpour for editorial assistance.

Conflicts of Interest

The authors declare that there is no conflict of interest.

References

1. Qayyum A, Baloch RA. Trabeculectomy in Primary Congenital Glaucoma. *Pak J Ophthalmol.* 2014;30(3):125-8.
2. Li H, Liu T, Chen X, Xie L. A rare case of primary congenital glaucoma in combination with neurofibromatosis 1: a case report. *BMC ophthalmology.* 2015;15(1):149.
3. Mandal AK, Chakrabarti D. Update on congenital glaucoma. *Indian journal of ophthalmology.* 2011;59(7):148-57.

4. Chang TC, Cavuoto KM. Surgical management in primary congenital glaucoma: four debates. *Journal of ophthalmology*. 2013;1-7.
5. Forootan A, Mirsamadi M, Joshaghani M. Evaluation of results of treatment in patients with congenital glaucoma in Rasool Akram hospital 1991-1998. *Razi Journal of Medical Sciences*. 2002;9(30):365-72.
6. Ghanei R, Rezaei K, Mahmoodi R. The Relationship between Preoperative Anxiety and Postoperative Pain after Cesarean Section. *Iranian Journal of Obstetrics, Gynecology and Infertility*. 2013;15(39):16-22.
7. Zakerimoghadam M, Aliasgharpour M, Mehran A, Mohammadi S. Effect of Patient Education about Pain Control on Patients' Anxiety Prior to Abdominal Surgery. *Hayat*. 2010;15(4):13-22.
8. Rasti R, Jahanpour F, Motamed N, Kiani J. Effects of parental presence during induction of anesthesia in children undergoing surgery on anxiety of parents. *ScientificJournal of Hamadan Nursing & Midwifery Faculty*. 2014;22(1):52-9.
9. jafarmanesh h, ranjbaran m, vakilian k, rezaee k, zand s, tajik R. Survey of levels of anxiety and depression in parents of children with chronic illness. *Journal of Nursing Education*. 2014;1(4):45-53.
10. Hockenberry MJ, Wilson D. *Wong's Nursing Care of Infants and Children-E-Book*: Elsevier Health Sciences; 2014.
11. Fukuchi I, Morato MMM, Rodrigues REC, Moretti G, Júnior S, Falcao M, et al. Pre and postoperative psychological profile of children submitted to adenoidectomy and/or tonsillectomy. *Revista Brasileira de Otorrinolaringologia*. 2005;71(4):521-5.
12. Aranha P, Sams L, Saldanha P. Preoperative preparation of children. *International Journal of Health & Allied Sciences*. 2017 January 1, 2017;6(1):1-4.
13. Karling M. *Child behaviour and pain after hospitalization, surgery and anaesthesia*: Medicinsk fakultet; 2006.
14. Wamboldt MZ, Reiss D. Explorations of parenting environments in the evolution of psychiatric problems in children. *AmPsychiatric Assoc*; 2006.
15. Weller EB, Rowan A, Elia J, Weller RA. Aggressive behavior in patients with attention-deficit/hyperactivity disorder, conduct disorder, and pervasive developmental disorders. *The Journal of clinical psychiatry*. 1999;60:5-11.
16. Esmkhani AH, Etemadi A, Nasirnejhad F. Self-efficacy and its relationship with mental health & academic achievement of girl students. 2010;2(8):13-25.
17. Jajormaneh F, Ghazavi Z, Mehrabi T, Najafi M. The effect of stress management training program on self-efficacy mothers of children with thalassaemia. *Journal of Clinical Nursing and Midwifery*. 2016;5(2):84-93.
18. Sarabi Jamab M, HassanAbadi H, Mashhadi A, Asgharinekeh M. The effectiveness of parent training on self-efficacy of mothers of children with autism. *Journal of Fundamentals of Mental Health*. 2011;13(49):84-93.
19. Edraki M, Kamali M, Beheshtipour N, Amoozgar H, Zare N, Montaseri S. The effect of educational program on the quality of life and self-efficacy of the mothers of the infants with congenital heart disease: A randomized controlled trial. *International journal of community based nursing and midwifery*. 2014;2(1):51-9.
20. Kheradmand M, Salmanyazdi N, Alkhani M, Haghani H. Investigating the learning needs of the mothers regarding post-operative surgery heart care of their infants in the health centers in Tehran. *Iran Journal of Nursing*. 2005;18(43):39-47.
21. Sanjari M. Child hospitalization and parents' anxiety. *Iran Journal of Nursing*. 2004;17(39):41-8.
22. Tahmasbi H, Mahmoodi G, Mokheri V, Hassani S, Akbarzadeh H, Rahnamai N. The Impact of Aromatherapy on the Anxiety of Patients Experiencing Coronary Angiography. *Zahedan Journal of Research in Medical Sciences*. 2012;14(3):51-5.
23. Mahram B. *Standardization of Spielberger inventory in Mashhad*: MA thesis. Tehran. Allameh Tabatabaee University; 1994.
24. Najafi M, Foadjang M. The relationship between self-efficacy and mental health among high school students. *Daneshvar Raftar*. 2007;14(22):69-80.
25. Sherer M, Maddux JE, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers RW. The self-efficacy scale: Construction and validation. *Psychological reports*. 1982;51(2):663-71.
26. Beyrami M. The effects of emotional intelligence training on assertion, self-efficacy and mental health. *Journal of Psychology (Tabriz University)*. 2008;3(11):19-36.
27. Asgharnejad T, Ahmadi DM, Farzad VE, Khodapanahi MK. Psychometric properties of Sherer's general self-efficacy scale. *Journal of Psychology (Tabriz University)*. 2006;10(39):262 - 74.
28. Aranha P, Sams L, Saldanha P. Impact of preoperative education program on parental anxiety: A pilot project. *Archives of Medicine and Health Sciences*. 2016 January 1, 2016;4(1):30-4.
29. Tabrizi JS, Seyedhejazi M, Fakhari A, Ghadimi F, Hamidi M, Taghizadieh N. Preoperative education and decreasing preoperative anxiety among children aged 8-10 years old and their mothers. *Anesthesiology and pain medicine*. 2015;5(4).
30. Mahdizadeh M, Mohammad N, Behnam Vashani H, Reyhani T. Effects of Supportive Educational Program on Anxiety of Mothers of Children Undergoing the Lumbar Puncture (LP). *Evidence Based Care*. 2016;6(2):29-38.
31. Enadi M, Ahmadi A, Mousavi A. Effects of training on anxiety in mothers of hospitalized children with urinary tract infection. *The Journal of Qazvin University of Medical Sciences*. 2015;19(3):64-7.

32. Tseng YS. "The Impact of a Child's Unexpected Hospitalization Upon Taiwanese Parents' Situational Anxiety". Texas Medical Center Dissertations (via ProQuest); 2009. Available from: <http://digitalcommons.library.tmc.edu/dissertations/AAI3362678>
33. Garcia HMS. The Effects of Preoperative Education on Parental Anxiety and Knowledge with Children Undergoing a Posterior Spinal Fusion: Point Loma Nazarene University; 2013.
34. Gholami S, Reyhani T, Beiraghi M, Behnam Vashani H. Effect of a supportive educational program on self-efficacy of mothers with epileptic children. Evidence Based Care. 2016;6(2):49-56.
35. Barlow J, Powell L, Gilchrist M. The influence of the training and support programme on the self-efficacy and psychological well-being of parents of children with disabilities: A controlled trial. Complementary therapies in clinical practice. 2006;12(1):55-63.
36. Coleman PK, Karraker KH. Parenting self-efficacy among mothers of school-age children: Conceptualization, measurement, and correlates. Family Relations. 2000;49(1):13-24.

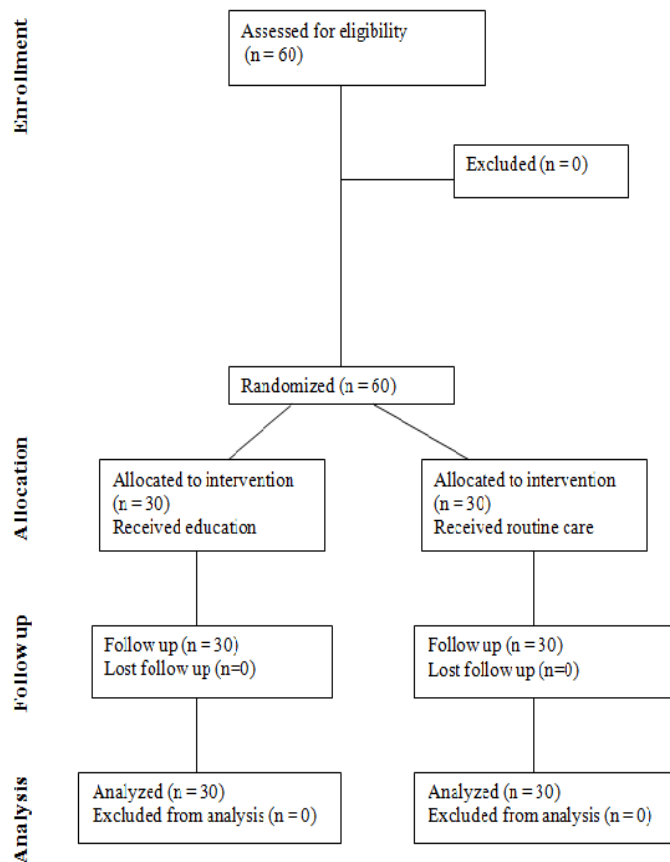


Figure 1: Diagram of the participants in the study

Table 1: Demographic characteristics of mothers and children in the experimental and control groups

Demographic variables	Subtype of variables	Experimental group Number (%)	Control group Number (%)	Total Number (%)	P value
Mother's age	15-24 years old	7).8(26)	9(30)	17(28.3)	0.939*
	25-30 years old	7).8(26)	3).7(23)	15(25)	
	>30 year old	7).14(46)	7).14(46)	7).28(46)	
Level of education	< diploma	7).8(26)	7).8(26)	7).16(26)	*456.0
	diploma	12(40)	3).16(53)	7).28(46)	
	Licentiate and more	3).10(33)	6(20)	7).16(26)	
Occupational status	Home wife	9).11(37)	14(48/3)).125(43)	0.659*
	workpeople	1).7(24)	7(24/1)).114(24)	
	Jobholder	9).11(37)	8(27/6)	8).19(32)	
Family income level	~ 270 \$	7).14(46)	7).15(51)	2).29(49)	**000.1
	~ 270- 810 \$	12(40)	9).11(37)	23(39)	
	>810 \$	3).4(13)	3).3(10)	9).7(11)	
History of sedative medication	yes	9(30)	3).10(33)).719(31)	*781.0
	No	21(70)).620(66))68.341(
Child's age	M±SD	Experimental group	2/0±11/60		0.392***
		Control group	0/48± 1/99		
Sex	Female	12(40)	9).11(37)	23(39)	0.871*
	male	18(60)).118(62)	36(61)	
Number of admission	1).313(43)).314(48)	27 (45/8)	*886.0
	2)23.37(1).7(24)).714(23)	
	3 and more	3).10(33)	6).8(27))30.518(

*Chi-square test, ** Fisher's exact test, *** Independent t-test

Table 2. Comparison of the two groups regarding the mean score of state anxiety, trait anxiety and self-efficacy before, immediately after and 2 months after the intervention

variables	Groups	Before the intervention	Immediately after the intervention	2 months after the intervention	F.statistics	P. value **
		M ± SD				
Trait Anxiety	Experimental	43.46± 7.44	40.30±7.75	23.70±2.66	147.56	<0.001
	Control	43.4±7.53	43.93±7.45	43.80±7.44	4.89	0.027
	P-value*	0.97	0.07	<0.001		
State Anxiety	Experimental	45.40±7.42	41.70±7.53	26.10±3.71	166.78	<0.001
	Control	45.10±7.55	46.03±7.58	45.70±7.49	3.14	0.063
	P-value*	0.87	0.03	<0.001		
Self efficacy	Experimental	57.40±10.06	61.33±10.00	81.36±2.35	193.62	<0.001
	Control	58.03±9.30	57.26±8.95	57.50±8.98	7.31	0.004
	P-value*	0.80	0.10	<0.001		

* Independent t-test, **Repeated measurement

Table 3. Comparing the mean difference of state anxiety, trait anxiety and self- efficacy before, immediately after and two months after the interventions in the experimental and control groups

variables	groups	Dif.1	Dif.2	Dif.3	
		Experimental	-3.16± 2.45	-15.7±6.22	-12.60±6.33
Trait anxiety	M ± SD	control	0.53±1.16	-0.13±0.43	
	P-value*	<0.001	<0.001	<0.001	
State anxiety	M ± SD	Experimental	-3.70±3.99	-19.30±7.25	-15.6±6.68
		control	0.93± 2.49	0.60± 1.58	-0.33±2.02

	P-value*		<0.001	<0.001	<0.001
Self efficacy	M ± SD	Experimental	3.93±3.51	23.96±8.52	20.03±8.26
		control	-0.76±1.33	-0.53±1.19	0.23±0.773
	P-value*		<0.001	<0.001	<0.001
<ul style="list-style-type: none"> •Dif.1= Immediately after intervention – pre intervention •Dif.2= 2 months after the intervention – pre intervention •Dif.3= 2months after the intervention - immediately after intervention 					

*Mann-Whitney U Test