

Investigating the Effect of Providing Required Training to Mothers of Children with Surgery and Its Effect on Mothers' Anxiety

Julia Ferreira¹, Nadia Safa¹, Fabio Botelho¹, Robin Petroze¹, Hussein Wissanji¹, Dan Poenaru¹, Pramod Puligandla¹, Kenneth Shaw¹, Maeve Trudeau¹, Elena Guadagno¹, Jean-Martin Laberge¹, Sherif Emil^{1*}

¹Harvey E. Beardmore Division of Pediatric Surgery, The Montreal Children's Hospital, McGill University Health Center, Montreal, Quebec, Canada.

Abstract

Pediatric surgery is a stressful operation for mothers and leads to increased anxiety and decreased self-efficacy in childcare. The current study was done to study the effect of providing required training to mothers of children with surgery and its effect on mothers' anxiety. This study is a clinical trial type, and 60 mothers with children who are candidates for surgery were randomly assigned to two control and intervention groups in the children's educational and therapeutic center. Then psychological training and a stress management program were done for the intervention group. In this study, the tool for collecting mothers' information included the Spielberger Anxiety Questionnaire. According to the results, there was no significant difference between the two groups before the intervention, however, after the intervention, the level of anxiety in the intervention group was significantly decreased compared to the control group ($P < 0.01$). The findings obtained from the covariance statistical test revealed a significant difference between the intervention group and the control group after and before the intervention ($p < 0.01$). According to the results, mothers who were in the intervention group had less anxiety before the child's surgery compared to the control group. The obtained findings showed that the methods of providing proper training for mothers with children undergoing surgery could be used as an effective way to reduce mothers' anxiety.

Keywords: Children, Surgery, Mothers' anxiety, Training

Introduction

Pediatric surgeries are a common procedure all over the world. Surgery is a mixture of pain and incision anesthesia with tools such as surgical blades and needles. Each of these actions in turn is stressful and leads to psychological problems such as anxiety, fear, insomnia, and pain, especially in children [1-3]. With the increasing number of children's surgeries and the transfer of caring roles to parents, proper preparation and reducing their stress levels is necessary to properly care for children before and after surgery [4, 5]. Because child surgery creates stressful situations for parents, such as not knowing about the disease, the treatment process of child care, the consequences of the disease, and imposing costs. These factors cause anxiety and reduce the self-efficacy of mothers in childcare [6-8].

In surgery, parents play a vital role in accepting responsibility for care after and before surgery. They need full training and preparation in this matter [9]. The number of children undergoing surgery is also increasing. In addition, there has been a significant change in the provision of care used for surgical treatment, such as a short-

Corresponding author: Sherif Emil

Address: Harvey E. Beardmore Division of Pediatric Surgery, The Montreal Children's Hospital, McGill University Health Center, Montreal, Quebec, Canada.

E-mail: ✉ Sherif.Emil@mcgill.ca

Received: 20 October 2024; **Revised:** 12 January 2025;

Accepted: 16 January 2025

How to Cite This Article: Ferreira J, Safa N, Botelho F, Petroze R, Wissanji H, Poenaru D, et al. Investigating the Effect of Providing Required Training to Mothers of Children with Surgery and Its Effect on Mothers' Anxiety. *J Integr Nurs Palliat Care*. 2025;6:7-11. <https://doi.org/10.51847/m0J08PS920>

term program of hospitalization days, and the use of improved surgical techniques [10]. Caring for a surgically ill child is a different experience for parents, each of whom has a unique perspective [11]. The experience of children's illness and surgery on parents causes significant symptoms of anxiety and stress [12].

Psychological problems of mothers, especially anxiety, cause emotional and behavioral problems in children [13, 14]. Increasing the cognitive agents of the child's illness and implementing the strategies of self-efficacy of mothers to take better care of the child will decrease the parent's anxiety [9]. The psychological preparation program for surgery is a package of psychological training that they receive about the process before, after, and during surgery and some special sensory reactions to such processes [2, 15]. Risk management teaching programs can improve mothers' care for children's diseases [3, 16]. The study of Prabhu [10] showed that the use of simple preparation methods, such as providing booklets, conducting hospital tours, play therapy, videos, and short-term training is effective on parental anxiety. Studies have shown that appropriate educational intervention can lead to their ability to face parenting tasks and reduce their anxiety by correcting parents' feedback and perceptions [17, 18]

Teaching mothers creates positive motivation in them, reduces anxiety, and increases their self-confidence and confidence [19]. Chang *et al.* study [20] showed that providing education before surgery significantly increases health knowledge and reduces anxiety in the patient and family, and providing education in an objective and face-to-face manner is more effective than in print.

Moazeni and Sharifzadeh [21] showed in their study that if a mother knows her child's condition more realistically, she would feel more relaxed and less anxious; as a result, she will have better personal performance. Therefore, nurses have an essential role in reducing anxiety and physical and mental preparation of parents and children for surgery [9]. The child nurse has the task of improving the quality of his health care [22]. Because one of the professional and occupational roles of nurses is their educational role and the nurse is the most appropriate member of the health team to educate the patient and his family [12]. The mother is the first influential person in the child's mental health and has the main role in his care [11]. Care training reduces the anxiety of mothers [11]. It will be useful to prepare a suitable educational program for empowering mothers [4]. By raising the level of information and awareness of mothers, they can be helped in reducing anxiety [23].

The main goal of this study is to decrease the psychological problems of mothers of children with surgery. This research has tried to act with a pragmatic orientation based on the empowerment of mothers. In this study, the impact of the training program on the anxiety of children mothers with surgery has been investigated.

Materials and Methods

This study is a clinical trial type and was done in the form of two intervention and control groups in the form of a post-test and a pre-test on the mothers of children undergoing surgery referred to the children's hospital. The criteria for entering this research include mothers who experienced surgery for their child for the first time, have no history of abortion, have the power of speech, can take care of themselves and the child, do not suffer from mental and physical illness, are literate and writing and the child was hospitalized under general surgery. Mothers whose children had mental and physical problems such as cerebral palsy, mental retardation, and chronic congenital problems were excluded from this research. The sample size of this research was calculated by statistical software. G*POWER was calculated for 60 people (30 people in the control group and 30 people in the intervention group). The sampling method was random allocation among those who met the conditions to enter the study; they were divided into two intervention and control groups. The tools of data collection included a questionnaire of demographic information (number of children, mother's age, occupation, and education) and Spielberger's anxiety questionnaire [22]. The questionnaire on Spielberger's anxiety contains 40 questions based on a 4-choice Likert scale: never, sometimes, and generally, are too many questions about trait anxiety, which is an enduring personality trait, related to relatively consistent individual differences in readiness to become anxious. After explaining the aim of the study and attracting the participation of the hospital and clinic officials, the pre-test questionnaire was provided to both groups from among the mothers who had the conditions to enter the research. Then, in the control group, routine training was given during admission and hospitalization and before the operating room. However, in the intervention group, along with the current tests, written and planned training was given for 10 to 15 minutes in each section.

After collecting information and entering it into SPSS 21 statistical software, the data obtained by descriptive statistics (standard deviation, mean, and tables) and inferential statistics (covariance, paired t, and independent t) at a significant level ($\alpha = 0.05$) was analyzed.

Results and Discussion

The average age of mothers in the control group was 33.4 years and in the intervention group was 31.3 years, overall the average age of mothers was 32.7 years and there was no significant difference between the two groups ($P > 0.05$).

The educational program for mothers included 8 sessions. In the first session (in the clinic) about the disease type and the surgery type that was performed on the child, familiarizing and giving information about the facilities, equipment, and personnel of this center to the patient and family and showing the after and before photos. Surgery and examples of similar surgeries were presented. In the second session (admission time), the process of accepting and preparing the child before the surgery, including fasting and how to feed the child, having routine tests, cleaning the surgical site, operation consent, operation time, medications list, and possible allergies of the child, and also the introduction of the supervisor and department staff was done. In the third session (after hospitalization), the regulations and routine of the department, the introduction of the nurses and personnel of the department, interventions and nursing measures that are implemented for the child during hospitalization, how to be admitted to the surgery department, and perform venipuncture and serum therapy and receive medicine and antibiotics Pamphlets were presented before the disease. In the fourth and fifth sessions (before entering the operating room), telephone coordination with the operator of the operating room in the mother's presence, answering the questions of the mother regarding the time and manner of the operation, being with the mother when the child is admitted to the operating room, getting to know the mother It was done with the surgical team and the anesthesiologist. The sixth session (during the operation) included explaining the operation duration, encouraging the mother to express her feelings, and teaching about postoperative care. The seventh session (post-operative) included post-operative pain control, warning signs of surgery, diet, mobility, and activity level of the child, discharge time, educational explanations, answers to mothers' questions, and presentation of training pamphlets. In the eighth session (before discharge), post-discharge training, how to follow-up and post-operative visits, and how to use medicines were presented.

The anxiety level in the intervention group after and before the intervention is presented in **Table 1**.

Table 1. Comparison of the anxiety level in the intervention group after and before the intervention.

Level	Intervention group	Control group	Independent T-test
Before	99.83	102.01	P = 0.68; t = 0.5
After	65.23	91.93	P <0.01; t = 5.7
Paired t-test	P <0.01; t = 9.9	P <0.01; t = 4.26	

Relative and absolute frequency distribution of mothers of children undergoing surgery according to demographic information did not reveal any significant difference in the two groups ($P > 0.05$). The level of anxiety in the two groups showed a significant difference after the intervention, so that 50% reduction in the anxiety of mothers of children was related to the intervention ($\text{Eta} = 0.47$; $P < 0.01$).

The results of the current study revealed that mothers of children with surgery have always shown a high level of anxiety. Mean scores comparison of the mothers' anxiety before the intervention did not reveal a significant difference between the two groups, but the level of anxiety in mothers who were trained was significantly lower compared to mothers who were not trained. Providing training with cognitive strategies has increased the self-efficacy and efficiency of mothers in taking care of their children thus reducing their anxiety [4, 16]. Studies have shown that teaching mothers will create a positive attitude and increase their self-confidence and mothers confidence, thus reducing their anxiety. According to the studies, education reduces the anxiety of mothers of children with urinary infections [24], which is consistent with this study. The findings of studies have shown that the stress management training program has a positive impact on the mother's self-efficacy of children with thalassemia [12]. In the studies conducted, the relationship between self-efficacy and inverse anxiety has been reported, so it can be said that education is effective in reducing anxiety and is in line with the results of the current study [25].

The results of studies show that participation and family-oriented care reduce the anxiety of mothers of children with gastrointestinal infections [26, 27]. In addition, according to studies, education has reduced the anxiety of mothers of children with autism spectrum disorders [17, 28, 29]. Since the mothers of the intervention group have experienced far less anxiety than the control group, it can be said that the psychological and psychological preparation program of preliminary information and realistic expectations has created a kind of cognitive control that reduces the destructive effect of stress. Providing information before surgery reduces anxiety [3]. A person who can control and restrain his emotions teaches him to reduce his anxiety and increase his self-efficacy by having a positive perception of his abilities [20].

Education plays a significant role in decreasing mental disorders and anxiety and improving the physical and mental health of mothers, and it causes positive motivation in them and increases their self-confidence and confidence [11, 20]. Therefore, the findings of all the mentioned studies are consistent with the current study. In general, the use of simple training methods and management techniques to reduce anxiety in mothers will help them to deal better with stressful situations and have a positive effect on better care of their child and the recovery process of his illness. In this research, by giving knowledge and training to mothers about the nature of the disease, diagnostic procedures, treatment process, and anxiety-provoking situations, child surgery hospitalization has

become more predictable and concrete for mothers. After the training, the ability of the mothers to deal with the situation and control the situation increased, which has reduced anxiety. As a result, the results of this research are consistent with the cognitive theory hypotheses and confirm it.

Conclusion

In general, this study showed the effect of raising mothers' awareness in reducing anxiety. Providing an appropriate educational program increases the cognitive performance of mothers, reduces their anxiety in the situation, and deals with this issue appropriately. This training empowers the mother to accept responsibility for more appropriate care before and after surgery. Based on the findings of this study, nursing managers are suggested to implement a training program to reduce anxiety and increase the ability and self-efficacy of mothers, which will lead to more appropriate care and improve the treatment process of the child.

Acknowledgments: None

Conflict of interest: None

Financial support: None

Ethics statement: None

References

1. Sarafino EP, Smith TW. Health psychology: biopsychosocial interactions. John Wiley & Sons; 2014.
2. Seyedhejazi M, Sharabiani BA, Davari A, Taghizadieh N. A comparison of preoperative psychological preparation with midazolam premedication to reduce anxiety in children undergoing adenotonsillectomy. *Afr J Paediatr Surg.* 2020;17(1-2):10-4. doi:10.4103/ajps.AJPS_62_17
3. Meletti DP, Meletti JFA, Camargo RPS, Silva LM, Módolo NSP. Psychological preparation reduces preoperative anxiety in children. Randomized and double-blind trial. *J Pediatr (Rio J).* 2019;95(5):545-51. doi:10.1016/j.jped.2018.05.009
4. Hou H, Li X, Song Y, Ji Y, Sun M, Wang D, et al. Effect of interactive, multimedia-based home-initiated education on preoperative anxiety in children and their parents: a single-center randomized controlled trial. *BMC Anesthesiol.* 2023;23(1):95. doi:10.1186/s12871-023-02055-7
5. Kerimaa H, Hakala M, Haapea M, Vähänikkilä H, Serlo W, He HG, et al. Effectiveness of a mobile app intervention for preparing preschool children and parents for day surgery: randomized Controlled Trial. *J Med Internet Res.* 2023;25:e46989. doi:10.2196/46989
6. Curelaru V, Muntele-Hendres D, Diac G, Duca DS. Children's and mothers' achievement goal orientations and self-efficacy: dyadic contributions to students' well-being. *Sustainability.* 2020;12(5):1785. doi:10.3390/su12051785
7. Benedetto L, Ingrassia M. Parental self-efficacy in promoting children care and parenting quality. *Parenting-empirical advances and intervention resources: InTech.* 2018:31-57. doi:10.5772/intechopen.68933
8. Vance AJ, Pan W, Malcolm WH, Brandon DH. Development of parenting self-efficacy in mothers of high-risk infants. *Early Hum Dev.* 2020;141:104946. doi:10.1016/j.earlhumdev.2019.104946
9. Miklosi M, Szabo M, Martos T, Galambosi E, Perczel Forintos D. Cognitive emotion regulation strategies moderate the effect of parenting self-efficacy beliefs on parents' anxiety following their child's surgery. *J Pediatr Psychol.* 2013;38(4):462-71. doi:10.1093/jpepsy/jss174
10. Prabhu PS. Effectiveness of Hospital Based intervention on parenting stress among mothers of pediatric surgery children in south India. *Int J World Res.* 2014;1(5):25-34.
11. Ghodrati A, Hasanzadeh M, Mishmast M. The effect of neonatal care training on anxiety in mothers of premature infants. *J Torbat Heydariyeh Univ Med Sci.* 2014;2(2):25-30.
12. Jajormaneh F, Ghazavi Z, Mehrabi T. The effect of stress management training program on self-efficacy mothers of children with thalassaemia. *J Clin Nurs Midwifery.* 2016;5(2):84-93.
13. Gonzales Jr AM. Breastfeeding self-efficacy in Asia and Pacific: scoping review. *Nursing Practice Today.* 2021;8(1):25-39
14. Karbandi S, Masoudi R, Mamori G. The effect of relaxation training on breastfeeding self-efficacy of mothers with preterm infants. *J Clin Nurs Midwifery.* 2014;2(2):37-45.
15. Ergün S, Kaynak S, Aydın B. Fear of COVID-19 and related factors affecting mothers' breastfeeding self-efficacy during the pandemic. *Rev Esc Enferm USP.* 2022;56:e20220130. doi:10.1590/1980-220X-REEUSP-2022-0130en

16. Kim J, Chiesa N, Raazi M, Wright KD. A systematic review of technology-based preoperative preparation interventions for child and parent anxiety. *Can J Anaesth.* 2019;66(8):966-86. doi:10.1007/s12630-019-01387-8
17. Moghtader L, Haghgoo Siahgurabi M. The effect of group supportive and training psychotherapy on anxiety, depression, stress and quality of life in mothers of children with autism spectrum disorders. *J Urmia Univ Med Sci.* 2016;27(2):167-77.
18. Alibekova R, Kai Chan C, Crape B, Kadyrzhanuly K, Gusmanov A, An S, et al. Stress, anxiety and depression in parents of children with autism spectrum disorders in Kazakhstan: prevalence and associated factors. *Glob Ment Health (Camb).* 2022;9:472-82. doi:10.1017/gmh.2022.51
19. Toosi M, Akbarzadeh M, Ghaemi Z. The effect of relaxation on mother's anxiety and maternal-fetal attachment in primiparous IVF mothers. *J Natl Med Assoc.* 2017;109(3):164-71. doi:10.1016/j.jnma.2017.03.002
20. Chang SF, Hung CH, Hsu YY, Liu Y, Wang TN. The effectiveness of health education on maternal anxiety, circumcision knowledge, and nursing hours: a quasi-experimental study. *J Nurs Res.* 2017;25(4):296-303. doi:10.1097/JNR.000000000000177
21. Moazeni Z, Sharifzadeh G. The relationship between self-efficacy, trust in god, and anxiety in mothers of hospitalized children in Valiasr hospital of Birjand. *Mod Care J.* 2014;11(3):211-7.
22. Goral E, Geçkil E. The effect of a comprehensive support program on the stress level of mothers in a neonatal intensive care unit. *Nurs Pract Today.* 2022;9(1):54-61.
23. Ren J, Li X, Chen S, Chen S, Nie Y. The influence of factors such as parenting stress and social support on the state anxiety in parents of special needs children during the COVID-19 epidemic. *Front Psychol.* 2020;11:565393. doi:10.3389/fpsyg.2020.565393
24. Ndwiga C, Warren CE, Okondo C, Abuya T, Sripad P. Experience of care of hospitalized newborns and young children and their parents: a scoping review. *PLoS One.* 2022;17(8):e0272912. doi:10.1371/journal.pone.0272912
25. Rohde J, Marciniak MA, Henninger M, Homan S, Paersch C, Egger ST, et al. Investigating relationships among self-efficacy, mood, and anxiety using digital technologies: randomized controlled trial. *JMIR Form Res.* 2023;7:e45749. doi:10.2196/45749
26. Khani Jaihooni A, Mohammadkhah F, Razmjouie F, Harsini PA, Sedghi Jahromi F. Effect of educational intervention based on health belief model on mothers monitoring growth of 6-12 months child with growth disorders. *BMC Pediatr.* 2022;22(1):561. doi:10.1186/s12887-022-03593-8
27. Qian P, Duan L, Lin R, Du X, Wang D, Zeng T, et al. Decision-making process of breastfeeding behavior in mothers with gestational diabetes mellitus based on health belief model. *BMC Pregnancy Childbirth.* 2023;23(1):242. doi:10.1186/s12884-023-05527-3
28. Kousha M, Attar HA, Shoar Z. Anxiety, depression, and quality of life in Iranian mothers of children with autism spectrum disorder. *J Child Health Care.* 2016;20(3):405-14. doi:10.1177/1367493515598644
29. Sidig EA, Aljohani KA, Fadlalmola HA, Hamed RA. The impact of health counseling education program among Sudanese mothers on coping with autistic children. *Sudan J Paediatr.* 2022;22(1):19-26. doi:10.24911/SJP.106-1625340484