

The Impact of Pre-operative Education in Managing Distress among Adolescents

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Abstract

Educating patients about surgery operation procedures is a very important step in medical settings. Data show that educational programs related to surgical procedures have improved patients' satisfaction. The main objective of this study aims to investigate how information provided prior entering a surgery operation, offered by nurses, affects the reduction of distress in preoperative patients. This research paper is exclusively a design of quantitative methods, including 185 Kosovarian adolescents in preoperative care, selected randomly. This study has adopted the Questionnaire Adolescents Form that was originally drafted and used by a group of researchers Quiles, et al. in 2000 for their own study named "The Child Surgery Worries" created to assess children's worries about surgery. Significant differences have been found in the level of distress between adolescents who have gone through preoperative education and those who haven't ($p < 0.001$). Results from descriptive statistical analysis and t-test analysis have also shown significant differences among adolescents with preoperative educational intervention and those without, regarding the level of distress due to their separation from parents ($p < 0.001$). Furthermore, it has been found that adolescents who have been provided with preoperative education have shown lower rates of concern and distress during medical procedures related to surgery, reported lower rates of concern and distress during hospitalization process. Further, the results indicate that adolescents with preoperative education are less concerned about their illness comparing to those without preoperative education.

Keywords: Preoperative education; Children; Adolescents; Distress management; Nurses; Health; Mental health

Introduction

Perception of a surgical operation can be stressful, and it also leads to feelings of fear [1,2]. Fear occurs in different ways, including fear from the unknown, fear of losing control, and fear from ineffective pain control [3]. As a result, these fears lead to stress and anxiety for the patient [1,4]. Preoperative patients undergoing through planned surgical interventions with anesthetic are prone of high levels of fear and stress, followed by feelings of insecurity, anger and lack of confidence, which are indicated by failure to properly inform preoperative patients, leading to pre-intra and postoperative complications [5].

The term preoperative experience refers to all events related to operational or invasive procedures and integrates the patient's perception of events. Preoperative experience is associated with negative physiological and psychological post-operative outcomes in young children and adults. It is estimated that 80% of surgical patients manifest stress and anxiety before going through surgical procedures, which lately indicates the postoperative healing process. Intensive stress levels prior to surgical procedure, beside that require more anesthetic use in adult patients, are also associated with more postoperative pain and slow wound healing. In addition, young children and adults that experience high levels of stress before the surgical procedure had more postoperative complications [6]. It is reported that around 1.3 million patients experience postoperative

complications. The cost estimated for treatment in continuity is around \$25 billion.

Even though children, adolescents and adults perceive different experiences due to different cognitive development and personal experiences numerous of studies conducted analyzing preoperative experiences in adults and young children have shown serious concerns regarding their adaption to stressful medical events. This excludes studies with adolescents [7-14]. In recent years, the number of studies on the perceptions of children and their adaptation to stressful medical events have increased [15,16]. Studies have shown that preoperative stress is associated with poor health in adults and young children, but above that it is important to mention the fact about the lack of data in the literature about stressful experiences among adolescents. Clinical experience, however, has shown that adolescents behave differently from adults and children in preoperative stage. Adolescents often come out of anesthesia by striking, crying, and resisting. In addition, teenagers rarely ask questions (unlike adults and children), and when talking about providing short answers, they tend to avoid eye contact, and often have different movements that show that they are nervous [17].

Preoperative interventional programs provide important educational information that impact positively health care providers, children and parents [18]. Positive outcomes related to health include reduction of stress levels in children, improvement of co-operation with health care providers, and stronger reliance to medical procedures [19]. Preoperative interventional programs are usually provided by nurses in preoperative outpatient settings. Preoperative interventional programs provided by nurses are useful interventions when it comes to lowering the anxiety among children and parents [20]. Results from

preoperative interventional programs are interconnected and have significant impact in helping children to increase self-control, to reduce the unrealistic and inappropriate expectations related to hospitalization and surgery procedures. Moreover, it shows the increase of reliance in health care providers [19,21]. In the other hand, these benefits may also indicate the reduction of post-operative emotional and behavioral responses, reduction of perception of pain, and promote faster recovery [18].

However, in some developing countries, particularly in Kosovo's case, latest preoperative interventional programs are quite rare. Nonetheless, there are interventional programs but practiced in a traditional way. We are aware that preoperative interventional programs play a crucial role for patient's health and wellbeing. Therefore, considering this fact and in order to have a proper picture for this approach, the research focus is directed on finding how the traditional preoperative education provided by nurses in Kosovo hospitals affect the level of perception and wellbeing of preoperative adolescents.

Research purpose

This study aims to investigate how preoperative education provided by nurses affects the reduction of preoperative patient's concerns and distress. By identifying their concerns, it will be much easier in the future to design programs that can integrate direct psychological preparation of preoperative care.

Research questions

How does the preoperative education provided by nurses affect managing the distress caused by separation from parents among children in preoperative care?

Which is the impact of preoperative education provided by nurses on reduction of preoperative patient's concerns about illness, hospitalization, and medical procedures?

Methodology

Participants

By using randomized sampling, during September 2014, a group of 185 adolescents were selected to participate in the research at the University Clinical Center of Kosovo. Adolescents were selected mainly from clinics for abdominal, orthopedic and otolaryngology surgery. Since this questionnaire design includes only adolescent age group, the selection criteria for inclusion in the research was the age of between 11 to 14 years. Following the randomized sampling technique, adolescents were divided into two groups after they had completed the questionnaire, answering those who have received preoperative educational intervention and those who have not received it. Preoperational educational intervention in this study implies educational counseling by nurses given to preoperational adolescents regarding operational procedures. Both groups have been subjected to the same questionnaire.

Procedure

The directorate of the University Clinical Center of Kosovo was initially notified about the research process, additionally we have been granted with the permission to continue the research. Since the study sample consisted of adolescents, permission to conduct the study has

been also received from adolescents' parents and/or caregivers. Moreover, adolescents were also asked for their willingness to participate in the research and were informed that at any moment, if feeling uncomfortable they can retrieve from the research and no penalization will be acted upon them.

The preoperative educational intervention procedure lasted 7 to 9 minutes, and the nurses apart from fully explaining the operation procedure, they also allowed adolescents to ask questions they were interested in. Afterwards, they have been asked to fulfill the survey. In general, the survey procedure lasted from 10 to 12 minutes. To avoid patient refusals and fatigue, a short form of questionnaire was used. Patients were assured about confidentiality. Upon completion of the survey, patients were asked to include the questionnaire in envelope, and submit it to the interviewer.

The Child Surgery Worries Questionnaire Adolescents Form conducted by Quiles, et al. in 2000 was adopted to this research, knowing its value and importance to assess the concerns related to the surgery process. Such a questionnaire, as described by the authors, has been conducted after a wide search of literature, and interviews were also conducted to identify the main concerns related to preoperative process. The questionnaire used in this research was also translated and adapted in Albanian based on the standards procedure of Brislin. In total, the questionnaire contains twenty seven (27) closed questions, which are divided in ten (10) major categories related to illness, pain, death, injections, anesthesia, operation, operation hall, parents, hospital stay, and interpersonal relationships. Answers are given in Likert scale, from 0-not at all worried, 1-a little worried, 2-moderately worried, 3-considerably worried, to 4-extremely worried. The factorial analysis carried out in 2000 by the authors, brings up three main factors. The main factor measured by this questionnaire is the concern related to hospitalization, the second factor is the concern related to medical procedures, and the third factor is concern related to illness. In addition to the questionnaire that measures children's concerns related to preoperative procedures, the questionnaire also contained demographic questions like age, gender, etc.

Results

The score of distress management related to operation surgery was measured in three categories: illness, hospitalization, and medical procedures as the dependent variable, while the participants' basic attributes and whether they have gone through preoperative education or not were the independent variables. Data were analyzed using the linear regression analysis and inferential analysis like t-test. Descriptive analysis was used to examine the participants' basic attributes.

Age	Frequency	Valid percent
11 years	55	29.70%
12 years	56	30.30%
13 years	43	23.20%
14 years	31	16.80%
Total	185	100%

Note: Age groups, frequency and percentage

Table 1: Frequency and percentage of subjects divided by age groups.

All analyses were conducted using IBM SPSS Statistics Ver.21.0. Data were obtained from 185 participants from which 46.4% were female while 53.5% of them were males. The largest number of subjects (30.3%) belong to the 12-year age group, while the lowest number (16.8%) of participants belongs 14-year-old group.

It is important to mention that 46.4% of subjects were from rural areas while 53.6% of them were from urban areas. Only 2 subjects did not have both parents alive, and 28 of them did not have one of the parents alive. In general, only 17.6% of respondents were previously operated and for 82.4% of them was the first time they were going under surgery.

Out of 185 subjects, 23.3% of them reported low household monthly incomes, 46.7% reported average household monthly incomes while 30% of them reported to have good household monthly incomes. For more information see the below Table 2.

Economic incomes	Frequency	Valid percent
Not good	42	23.30%
Average	84	46.70%
Good	54	30.00%
Total	180	100%

Note: Incomes, frequency and percentage

Table 2: Frequency and percentage of subjects divided by economic incomes.

The Figure 1 shows data related to the fear of separation from parents during operation at adolescents with preoperative educational intervention and those without it.

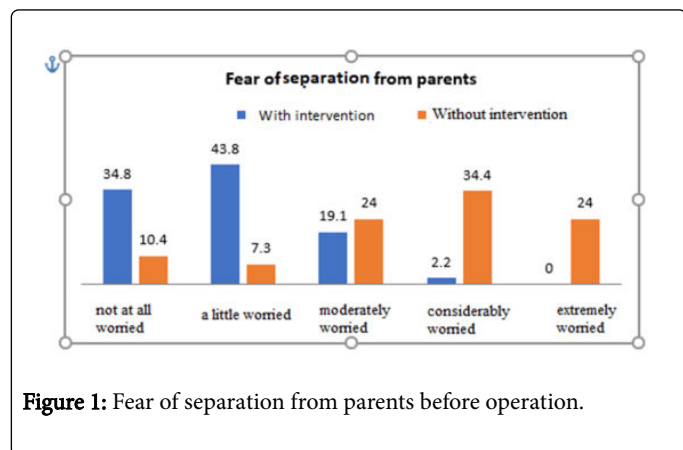


Figure 1: Fear of separation from parents before operation.

As illustrated in the Figure 1, 34.4% of adolescents without preoperative educational intervention reported that they feel considerably worried about the fact that they will be separated from parents during surgery, while on the other hand 24% of them reported that they feel extremely worried.

Whereas, 34.8% of patients with preoperative educational intervention reported that they are not at all worried about surgery and 43.8% of them reported that they feel a little worried. T-tets confirms that the differences between the two groups are significant $t(186) = 20.03, p < 0.001$.

Linear regressive analysis was conducted to see the impact of preoperative educational counselling in concerns about illness, hospitalization, and medical procedures, among Kosovar adolescents.

Model	Unstandardized coefficient		Standardized coefficient			
	B	STD>Error	β	t	Sig.	adj. R ²
Constant regression	1.143	0.42		26.97	0.001	0.425
Concern about illness	2.7	0.23	6.52	11.602	0	

Note: Independent variable: Preoperative educational counselling

Table 3: Preoperative educational counselling impact on concerns about illness.

A simple linear regression was calculated to predict concerns about illness among adolescents based on preoperative educational counselling, $\beta = 6.52, t(186) = 26.97, p < 0.001$. A significant regression equation was found ($F(1,182) = 134.616, p < 0.000$) with an R² of 0.425 (Table 4).

Model	Unstandardized coefficient		Standardized coefficient			
	B	STD>Error	β	t	Sig.	adj. R ²
Constant regression	9	0.43		20.749	0.000	0.621
Concern about illness	3.69	0.22	7.88	16.87	0.000	

Note: Independent variable: Preoperative educational counselling

Table 4: Preoperative educational counselling impact on concerns about hospitalization.

A simple linear regression was calculated to predict concerns about hospitalization among adolescents based on preoperative educational counselling, $\beta = 7.88, t(186) = 20.749, p < 0.000$. A significant regression equation was found ($F(1,174) = 285.141, p < 0.000$) with an R² of 0.621.

Independent t-test analysis was calculated to see the differences between gender and distress of separation from parents (Table 5).

Model	Unstandardized coefficient		Standardized coefficient			
	B	STD>Error	β	t	Sig.	adj. R ²
Constant regression	1	0.29		26.34	0.000	0.582
Concern about medical p	3.01	0.19	7.63	15.88	0.000	

Note: Independent variable: Preoperative educational counselling

Table 5: Preoperative educational counselling impact on concerns about medical procedures.

A simple linear regression was calculated to predict concerns about medical procedure among adolescents based on preoperative educational counselling, $\beta = 0.763, t(186) = 26.34, p < 0.000$. A significant regression equation was found ($F(1,181) = 252.173, p < 0.000$) with an R² of .582.

Discussion

Significant data have been found among two adolescent groups, those with preoperative education and those without preoperative education. Data show that adolescents who have received preoperative education represent a higher level of distress management than adolescents without preoperative education. While observing for the level of fear regarding their separation from parents during operation and its impact on distress management, it was found that adolescents who received preoperative education have shown lower level of fear when it comes to their separation from parents. On the other hand, those that did not have or were not provided with preoperative education before surgery have shown higher level of fear. See Figure 1 for further information.

Furthermore, results from linear regression analysis have found that adolescents who received preoperative education have lower levels of concern about hospitalization procedures during operation and after it. In this case, the independent variable (preoperative education) explained 62% of the dependent variables ($p < 0.001$). Preoperative education indicates the adolescent concerns about medical procedures during surgery and after it. In this case, 58% of dependent variable is explained by the independent variable ($p < 0.001$). And finally, the impact of preoperative educational intervention is also noticeable on reduction of the distress about illness among adolescents, as well as the preoperative education explains 42% of dependent variable ($p < 0.001$). The findings obtained in this study are consistent with the results of other studies [18-21], indicating that preoperative education is essential for reducing anxiety among children and parents. This also increases the self-control among children and reduces unrealistic and inappropriate expectations related to hospitalization and surgery procedures. Further, it also increase reliance in health care providers. Overall the importance of education prior to surgery operations has been seen to make a major impact on the overall process in itself and the decrease of risk of potentially traumatic experience for adolescents at hand.

Considering that this research is based on a particular sample of adolescents that is related to contextual background in Kosovo health system, regardless, the studies consistent results with the main finding of relation of preoperative education and reduced levels of anxiety, it gives an indication that the study has achieved to measure the impact of psychological relevance of variables giving thus a contribution to the local health systems awareness and a relatedness with the issue of effective preparation education worldwide. The psychological impact could further be explored as the effect of anxiety among patients in preoperative surgery state could be related to local health systems or also not considering that the health care conditions could be optimal but the education still would impact the levels of stress. However remains to be further elaborated in continuous research. Locally, this study emphasized the importance of improving the information gap and educational needs between patients and caregivers. Reducing anxiety during a highly anxious period for an individual is a major contribution to the wellbeing of people under concern and opens way to better professional practices.

Conclusion

Indeed, the intervention extends the impact on the concern about hospitalization, significantly reducing it. About 62% of the opacity or variance in dependent variables is explained by the intervention ($p < 0.01$).

Furthermore, the impact of intervention is noticeable in reduction of concern about medical procedures, in this case, 58% of dependent variable is explained by the independent variable ($p < 0.001$).

And finally, the impact of intervention is also noticeable in reducing the distress of the concern about illness among adolescents, as the intervention has the opportunity to explain 42% of variance at this level ($p < 0.01$).

Limitation of the Study

The research study was conducted at the University Clinical Center of Kosovo, and the results may not be applicable though almost all surgeries of Kosovan children and adolescents were performed at UCC. Comparative analysis between different age groups of adolescents and their level of distress related to preoperative procedures have not been presented due to the non-equal number of different age groups participants in the study. Also the study results are limited to context however it can be hypothesized and duplicated with similar questions to a broader sample in hospitals.

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