

## The Use of Preoperative Education Booklet Media to Decrease Anxiety Level of School-Aged Children

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### ABSTRACT

**Background:** Preoperative anxiety is one of the effects of surgery, where children undergo surgery see it as a threat and a negative experience. The factors that cause preoperative anxiety in children is a lack of understanding of children regarding the surgery. Anxiety needs to be overcome by providing appropriate interventions to reduce the level of anxiety in children, one of which is by providing education. Providing education should be delivered using media, especially media that are of interest to children. Media that can be used and in accordance with the level of school-aged children development, which is illustrated by booklet with picture.

**Objective:** This study aimed to determine how the influence of the use of preoperative educational booklet media towards anxiety level of school-aged children who undergo surgery at pediatric inpatient ward (IRNA I) at Dr. Sardjito Hospital, Yogyakarta.

**Method:** This study used quasi-experimental with non-equivalent control group pre-test & post-test design. The sample were 34 school-aged children (6-12 years). We used consecutive sampling technique.

**Results:** Our results showed a significant influence before and after preoperative education using a booklet (p-value = 0.001) and showed a significant difference between the intervention group and control group (p-value= 0.023).

**Conclusion:** The use of preoperative educational booklets has an influence on decreasing the anxiety level of school-aged children who undergo surgery effectively in pediatric ward (IRNA I) at Dr. Sardjito Hospital, Yogyakarta

**Keywords:** Booklet, preoperative, anxiety, school-aged children.

Received: February 21, 2019; Revised : March 9, 2019; Accepted: March 17, 2019

**How to Cite:** Sari, A.D., Gamayanti, I.L., & Koeswandari, R. (2019). The Use of Preoperative Education Booklet Media to Decrease Anxiety Level of School-Aged Children. *Journal of Nursing Practice*. 2(2). 116-122. <https://doi.org/10.30994/jnp.v2i2.54>



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**BACKGROUND**

Children undergo surgery might experience anxiety before undergoing a surgery (Vaezzadeh et al., 2011). Anxiety in children arise usually at the preoperative stage. Anxiety in the preoperative stage can have an impact on physical, emotional and psychological health (Li & Lam, 2003; Li, 2007c). Children experiencing anxiety in surgery can be caused by a lack of knowledge of the children about surgery, not being able to control themselves, lack of appropriate explanations to the children and children lacking in pain management (Li & Lopez, 2008).

Percentage rates for anxiety and children's fear of surgery in Indonesia are unknown. Where based on the research of 30 school-aged children, they experienced mild anxiety (43.3%), moderate anxiety (36.7%) and severe anxiety (20%).

Preoperative anxiety in children requires appropriate interventions to reduce preoperative anxiety and avoid the impact of excessive preoperative anxiety. Effective psychological preparation for children with surgery to minimize negative experiences that arise in children. Psychological preparation that can be given to children is to provide information about surgery using preparation techniques, material and language that are tailored to the level of child development, personality, and children's experience (Committee on Hospital Care and Child Life Council, 2014).

Children who undergo surgery may need information on what they will be faced before the surgery, which can be provided by preoperative education. Preoperative education is an effort to provide preoperative information to children. Preoperative education can be provided through several media such as leaflets, booklets, videos, photo albums, playing medical equipment, visiting the operating room (Ahmed et al., 2011; Vaezzadeh et al., 2011; Fincher et al., 2012).

School-aged children based on the theory of psychosocial development (Erikson) at the stage of industry versus inferiority (Hockenberry & Wilson, 2011, p.645-646) and cognitive development theory (Jean Piaget), which is a concrete operational stage. Providing education to children requires media to deliver information. Effective preoperative educational media in school-aged children, in the form of images or other visuals (Justus et al., 2006). Media education in the form of images and writing one of them is booklet. Booklet is an effective educational media for school-aged children because simple media booklets, written with interesting and colorful images, using language that is easy to understand and understand can be taken home and read or studied at any time (Notoatmodjo, 2012., Aini, 2010., Zulaekha, 2012).

**OBJECTIVE**

This study aimed to find out how the influence of the use of preoperative educational booklets in reducing anxiety levels in school-aged children who undergo surgery.

**METHODS**

This study used a quasi-experimental with a non-equivalent control group pre-test & post-test design with a quantitative approach. The population in this study were all school-aged children who underwent a surgery in the Cendana 4 and Dahlia 5 pediatric wards (IRNA I) Dr. Sardjito Hospital, Yogyakarta in February 2015 to July 2015. We selected the respondents with the criteria such as children willing to be respondents, school-aged children (6-12 years), cooperative children, children with elective surgery, children or parents can read and excluded if the children admitted to hospital 1 day before surgery, children with growth and development problems, children who received anti-anxiety drugs.

The total sample was 34 respondents which consisted of 17 in control group and 17 in intervention group with sampling using non-probability sampling techniques (non-random techniques) with consecutive sampling method. Sampling in the study begins with the selection of samples in the control group first, after the control group was fulfilled it was followed by an intervention group to prevent any interaction between the control group and the intervention group.

The instrument for collecting data on the level of anxiety school-aged children who will undergo surgery uses a questionnaire and questionnaire entitled My Feeling Expressions modified from Gamayanti (2006) and interview guidelines. Data collection researchers were assisted by research assistants.

The implementation stage researchers determined sampled first control group, after the sample of the control group was fulfilled it continued with the intervention group. The control group on day 1 of the child admitted to the child's hospital was given an anxiety (pretest) questionnaire accompanied by parents, the child was given routine preoperative education from the hospital, in the afternoon 1 day before the child's surgery an anxiety (posttest) questionnaire was given. Intervention group on day 1 the child entered the child's hospital was given an anxiety (pretest) questionnaire accompanied by a parent, the researcher entered a contract on the second day or the third child was treated, the researcher gave preoperative education 1 time for 30 minutes in the nursery and accompanied by parents by using a booklet, playing medical instruments, demonstrations and question and answer and children given booklets, afternoon 1 day before surgery the child was given an anxiety questionnaire (posttest).

The analysis used was bivariate analysis using Mann-Whitney to look at the differences between intervention group and control group, paired test (intervention group) and Wilcoxon (control group) with a significant level of 5%.

## RESULT

The research results from 34 children are shown in the table below:

The average age of children in the intervention group and the control group were 8.96 and 9.35 years, respectively. Most of the respondents were male, 13 male (76.5%) in the intervention group and 10 male (58.8 %) in the control group, while 4 female (23.5%) in the intervention group and 7 female (41.2%) in the control group. The children who had previous surgery experience were 12 children (70.6%) in the intervention group and 9 children (52.9%) in the control group and who never had surgery experience were 5 children (29.4%) in the intervention group and 8 children (41.2%) in the control group (Table 1)

Table 1. Characteristics of respondents based on child's age, gender, previous operating experience and type of surgery

| Characteristics | Group              |      |               |      |
|-----------------|--------------------|------|---------------|------|
|                 | Intervention group |      | Control group |      |
|                 | Mean±SD            |      | Mean±SD       |      |
| Child's age     | 8,59±1,938         |      | 9,35±2,396    |      |
| Characteristics | n                  | %    | n             | %    |
| Gender          |                    |      |               |      |
| Male            | 13                 | 76,5 | 10            | 58,8 |
| Female          | 4                  | 23,5 | 7             | 41,2 |

|                               |    |      |   |      |
|-------------------------------|----|------|---|------|
| Previous operating experience |    |      |   |      |
| Ever                          | 12 | 70,6 | 9 | 52,9 |
| Never                         | 5  | 29,4 | 8 | 47,1 |
| Type of surgery               |    |      |   |      |
| Pediatric surgery             | 5  | 29,4 | 2 | 11,8 |
| Urology surgery               | 5  | 29,4 | 4 | 23,5 |
| Orthopedic surgery            | 2  | 11,8 | 4 | 23,5 |
| Etc                           | 5  | 29,4 | 7 | 41,2 |

Source: Primary Data

The anxiety level of school-aged children who underwent surgery before and after being given preoperative education in the intervention group showed that the level of anxiety before education was 31.88 on average and after education was 25.88 on average with p-value 0.001 ( $p < 0.05$ ), which showed significant decrease in anxiety score between before and after being given education (table 2).

Table 2. Rates of anxiety school-aged children who will undergo surgery before and after preoperative education in the intervention group

| Measurement      | Mean  | p      |
|------------------|-------|--------|
| Anxiety pretest  | 31.88 | 0.001* |
| Anxiety posttest | 25.88 |        |

\*Paired t-test

The control group obtained a median level of anxiety before education of 36.00 and the median level of anxiety after education of 31.00 with p-value = 0.73 ( $p > 0.05$ ), which indicated that there was a decrease in children's anxiety scores, but was not statistically significant (Table 3).

Table 3. Anxiety level of school-aged children who will undergo surgery before and after preoperative education in the control group.

| Measurement      | Mean | p     |
|------------------|------|-------|
| Anxiety pretest  | 36   | 0.73* |
| Anxiety posttest | 31   |       |

\* Mann-Whitney Test

The differences in the level of anxiety of children before and after preoperative education in the intervention group and control group showed that there were significant differences in anxiety levels between the levels of child anxiety in the intervention group and the control group with p-value= 0.023 (Table 4).

Table 4. The difference in the level of anxiety before and after preoperative education in the intervention and control groups.

| Measurement                                                   | Group        | Median (min-max)      | p      |
|---------------------------------------------------------------|--------------|-----------------------|--------|
| Difference in anxiety before and after preoperative education | Intervention | -5.00 (-19-3)         | 0.023* |
|                                                               | Control      | 0.00 (-33.00 – 23.00) |        |

\* Mann-Whitney Test

## DISCUSSION

The statistical test results averaged anxiety levels before preoperative education in the intervention group was 31.88 and in the control group was 36.00. This indicates that children in the intervention group and the control group experienced anxiety.

Surgery is a threat to children can cause stress response (Frisch et al., 2010). One of the stress response that can arise when children undergo surgery is anxiety. Anxiety is a response from unpleasant feelings such as fear and panic that is characterized by physical, behavioral, emotional and cognitive symptoms (Videbeck, 2011). Emotional symptoms are one symptom that is caused if the child feels anxious. Children who will undergo surgery will experience the anxiety shown by crying and refusing to go to the hospital.

Anxiety arises in children due to lack of knowledge of children on surgery, children can not control themselves, lack of appropriate explanations for children and children less able in pain management (Li & Lopez, 2008).

The level of anxiety of school-aged children who will undergo surgery before and after being given preoperative education in the intervention group showed that the average level of anxiety before preoperative education of 31.88 fell to 25.88 after being given preoperative education. This shows a significant decrease  $p\text{-value} = 0.001$  ( $p < 0.05$ ). Reading and talking with adults can help children to understand and overcome problems with what their children feel according to their level of development and reading is a good way to be with children, strengthen relationships with children, a sense of security and everyday conditions and can help restore experience traumatic in children (National Association of School Psychologists, 2015). According to Goddard (2011) that reading is the center of children's development, by reading children can explore different concepts, feelings, attitudes and can understand the surrounding environment, and can increase self-esteem to provide comfort and help children in facing difficult conditions. This is consistent with the level of psychosocial development (Erikson) school-aged children are in the industry versus inferiority stage, where children have more curiosity that is learning and experience (Hockenberry & Wilson, 2011, p.645-646).

This is also supported by research conducted by Li & Lopez, (2008) that providing information with a therapeutic approach to play in accordance with children's development for the preparation of children with surgery can reduce the level of anxiety of children in the face of surgery. Based on adaptation model theory (Roy, 1984), children involved in preoperative education, positive self-concept of children and children can seek the function of their roles and there is a balance between receptive and contributive behavior of children will be adaptive to the environment and conditions experienced.

The statistical test results in the mean control group at the level of anxiety before being given education were 36.00 and dropped to 31.00, but the decline that occurred was not statistically significant with  $p\text{-value} = 0.73$  ( $p > 0.05$ ). The decrease in the level of anxiety in the control group is likely to have support from parents of children by giving explanations to children. This is in accordance with the study of Li et al (2007a) that parental involvement is needed in the preoperative preparation of children undergoing surgery. This is also supported by research Andriani (2014) that family support is related to the anxiety level of children who will undergo surgery.

Based on the results of the statistical test, it was found that  $p\text{-value} = 0.023$  ( $p < 0.05$ ) where there was a significant influence between the level of anxiety in school-aged children undergoing surgery in the intervention group and the control group. This is supported by the Apriliawati (2011) study that there is an influence of bibliotherapy by using story books to reduce the level of anxiety school-aged children who undergo hospitalization.

According to Ahmed et al., 2011 the preoperative information delivery program is an approach that can be used to convey preoperative information to educate children and

families such as using leaflets, interactive books and video media. Research conducted by Perry et al (2012) that children who will undergo surgery by getting preoperative preparations according to age before surgery will have time to be able to process the information obtained, develop coping skills and can control feelings and have a positive experience with surgery. This is also supported by Vaezzadeh et al (2011) that the preoperative preparatory program on school-aged children with playing activities in children can effectively reduce children's anxiety compared to children who receive routine information preparation from the hospital  $p\text{-value} = 0,000$ . The results of the same study by Li, Lopez & Lee (2007b) that children who received information with play therapy before surgery were statistically anxiety lower than the control group who received routine information preparation.

## CONCLUSION

Based on the results of the study, it can be concluded that the use of preoperative educational booklets decreases anxiety rates of school-aged children who undergo surgery with  $p\text{-value} = 0.001$  and can effectively reduce the anxiety rate of school-aged children who will undergo surgery in the intervention group compared to the control group ( $p = 0.023$ ).

## SUGGESTION

We suggest to make preoperative educational booklets as a tool in the preparation of children before undergoing surgery so as to reduce the anxiety of school-aged children who will undergo surgery. For the next investigators, it is expected to conduct research on any factors that can affect the level of child anxiety more deeply.

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