




THE EFFECTIVENESS OF SLOW DEEP BREATHING ON PAIN INTENSITY IN CHILDREN THROUGH CIRCUMCISION

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Abstract

Background: Circumcision is a surgical procedure that leaves scars and can be quite disturbing for children. This is because of the pain and limited movement that makes the child feel uncomfortable. The response to pain varies from child to child depending on the level of development or age of the child. Slow deep breathing is a conscious action to regulate deep and slow breathing which can have a relaxing effect. Relaxation therapy is widely used in everyday life to be able to overcome various problems such as stress, muscle tension, pain, respiratory problems, and others. **Objective:** The purpose of this study was to determine the effect of slow deep breathing complementary therapy on reducing pain intensity in children undergoing circumcision at the Marzuki Tabanan Foundation. **Method :** using pre-experimental method with one group pretest posttest design with purposive sampling technique. **Results:** From the results of the paired T-test, it was found that P value $p: 0.013 < 0.05$, which means significant or there is an influence of Slow Deep Breathing therapy on pain intensity in children undergoing circumcision.

keyword : Slow Deep Breathing, Circumcision, Pain

INTRODUCTION

One surgical method of cutting or removing half or even all of the front cover skin or often called the foreskin of the male penis is commonly referred to as circumcision or more popularly known as khitan (Eidelman & FABM, 2012). Circumcision often leaves a wound and will be disturbing for most children because it causes pain and causes limited movement due to the pain caused (Prasetyo, 2018). There are a total of 8.7 or 85% million boys in Indonesia performing circumcision with a lower number when compared to other developing countries which is 10.2% (UNAIDS, 2010).

Based on Wong (2009) said that the level or a pain response in each child is different according to age and developmental level (Wong, 2009). In Kaur et al.'s research (2014) states that every health worker is responsible for reducing pain due





to medical procedures with various types of intervention methods that can be provided both pharmacologically and non-pharmacologically (Samsugito et al., 2022).

Slow Deep Breathing is a technique that is done consciously with the aim of regulating deep and slow breaths that are beneficial to provide a relaxing effect. In daily life, relaxation techniques have been believed to be able to reduce various conditions such as stress, respiratory problems, muscle tension and so on. In general, the definition of relaxation itself is a state in which cognitive, physiological and behavioural functions decrease (Perry et al., 2013).

In reducing pain in patients with circumcision who are first anaesthetised. One technique that can be used is Slow Deep Breathing relaxation (Wahyuni et al., 2015). In this study, researchers want to know whether complementary therapy Slow Deep Breathing technique can be used to reduce pain intensity in male patients with post-circumcision action.

METHOD

This study used pre-experimental with one group pretest posttest design with purposive sampling technique. This study was conducted on 26 children who were post circumcision at Yayasan Marzuki Tabanan Bali on 15 October 2022. The population in this study were all children who participated in circumcision. The independent variable in this study is complementary therapy Slow Deep Breathing. The dependent variable is the pain intensity of children undergoing circumcision. The sampling method in this study is non-probability with a purposive sampling approach based on children undergoing circumcision at the time of the study. So the sample in this study were all children who underwent circumcision as many as 26 respondents with inclusion criteria, namely children in a fully conscious state, children who are able to communicate verbally and non-verbally, children willing to be respondents in writing. While the exclusion criteria are uncooperative children, children experiencing complications after circumcision and children experiencing respiratory problems.

The research instrument used was a questionnaire sheet containing a child's pain assessment before and after the intervention. The pain scale measurement

instrument used the FLACC (Face, Legs, Activity, Cry, Consolability) Pain Scale. The deep breath relaxation intervention was given for 5 minutes with a frequency of 1 to 2 times before anaesthesia. Respiratory relaxation with Slow Deep Breathing technique was intervened when the child underwent circumcision and at the same time the pain score was measured using FLACC observation sheet. The ethical eligibility number for this study was 400/260/K3/302/2022.

Pain response was measured using the FLACC Pain Scale. Data processing used statistical software in the form of SPSS 2.5 using data analysis, namely data normality test using Kolmogorov-Smirnov with the results of normally distributed data, so the analysis was carried out by Paired T-Test test.

RESULT AND DISCUSSION

The results of this study obtained the following data:

Table 1 Characteristics of Respondents Based on Age

Age	F	%
Pre-School	4	23,6%
School	22	76,4%
Total	26	100%

Table 1 displays the frequency of respondents' age groups, most of which are in the school group, namely from 6-11 years old, which is around 76.4%. While in the pre-school age group (3-5 years) only 4 children or about 23.6% of the total 26 respondents.

Table 2 Characteristics of Respondents Based on FLACC Pain Scale

Responden	Mean	Min-Max	Sig. (2-tailed)
Pre-Test	3.8077	0-10	
Pos- Test	4.5000	0-10	0,120

Table 2 shows that the median value of the child's pain scale given Slow Deep Breathing therapy is 3.8077 based on the FLACC score range, this median score is in the moderate pain criteria (3-6). While the median value of children's pain scale after Slow Deep Breathing therapy intervention is 4.5 with moderate pain criteria (4-6). With a significant value of 0.120, which means 0.120 is greater than 0.05,



indicating that the data is normally distributed. With these statistical results referring researchers to choose the Paired T Test for further analysis.

Table 3. Paired T-test Analysis Results

Respondent	Mean	Standard Deviation	Sig. (2-tailed)
Pre-Post	-.69231	1.31967	.013

From the results of data analysis with paired T-Test obtained P value $p: 0.013 < 0.05$ which means that there is an effect of Slow Deep Breathing on reducing pain intensity in children who are circumcised.

Pain Intensity in Children with Intervention

Based on the results of the study in Table 1, the pain scale value of children who have been given play therapy by blowing propellers is with a median value of 3.8. Based on the FLACC score, the median value is obtained in the mild scale criteria, namely 1-3. This is in accordance with research conducted by Wong (2009) and Hockenberry & Wilson (2009) which states that when children get invasive actions by health workers the majority of children are not expected to be able to cooperate optimally even though children who appear to show a relaxed attitude can basically lose control when the child experiences stress when circumcision is performed (Mathews, 2011). Even some other invasive treatments such as injections, surgery, and infusion therapy can cause anxiety in pre-school children and can be interpreted as punishment for minors (Carter & Simons, 2014).

The majority of children do not like the provision of invasive actions such as minor surgery performed during circumcision, the results of the study found that this circumcision is the thing they are most afraid of (Hajar & Hastuti, 2016). Circumcision procedures that are felt to give pain, health workers are expected to be able to perform perfect incision techniques and post-action pain relief measures that are effective in relieving discomfort. Based on Andarmoyo (2013) argues that pain occurs in several phases including the first appearance of a pain stimulus / mechanical or in the form of providing certain invasive actions through the role of mechanical nociceptors that will go to the central nervous system then the existence of this pain stimulus will later be converted into an electrical activity at the nerve

endings which we are more familiar with the transduction process. After that, there is a transmission process where there is a pain impulse from the nociceptor to the cerebral cortex (Taddio & Appleton, 2009). This pain transfer process occurs mediated by nociceptor nerve fibres / afferent nerve fibres and then there is an internal control process in the condition / modulation system that has an effect on increasing or even reducing the process of forwarding pain impulses due to endogenous analgesia produced in the human body which will release endorphin by brain cells in the spinal region. The existence of this process will determine how a person's pain perception. A person's pain perception results from the reconstruction of the central nervous system about the pain impulses that have been obtained. While this reconstruction occurs due to the interaction of the sensory nervous system, human emotional experience and cognitive inflammation (cerebral cortex) (Ruhman & Ismahmudi, 2017). The perception of pain will determine how severe and mild the pain a person feels. Some techniques such as deep breath relaxation techniques are useful in reducing the intensity of one's pain perception by shifting one's focus on the pain reaction that arises by providing a comfortable atmosphere and a relaxed body so that it will increase the endogenous analgesia process (Wati et al., 2016). With a regular breathing rhythm, this can have a calming effect or have a relaxing effect on the body so that it will increase the endogenous analgesia process in reducing pain perception (Aprina et al., 2018). Physiologically, the endogenous analgesia system is due to the role of endorphin, serotonin and enkephalin which have the effect of suppressing pain impulses in the posterior cornu area of the spinal cord. The posterior cornu is like the gate of the pain response that can close and open. The process of opening and closing the pain door is mediated by the endogenous analgesic system itself (Aprina et al., 2018).

The Effect of Slow Deep Breathing Complementary Therapy on Reducing Pain Intensity in Children Undergoing Circumcision Actions

The results of the study found that there was an effect on complementary therapy Slow Deep Breathing with a p value of 0.13, meaning that there was an effect on the pain scale after the intervention was given in the form of Slow Deep Breathing therapy in children undergoing circumcision. This research is supported



by the results of research from Asniah (2015) which states that if a child experiences pain then the provision of deep breathing techniques can be done while playing, playing will reduce the intensity of pain in a child (Asniah, 2015). Through a game, it will provide a form of distraction so that a child will be distracted from the pain and gain joy and be free from the stress and tension that is being experienced after circumcision. So that in the game pattern to get the benefits of deep breathing techniques in children with circumcision, several games can be done that are directly related to breathing including blowing balloons, blowing bubbles with pipettes / straws and baling - balling (Sari & Suryani, 2017).

The results of this study are in line with research from Wong (2009) in Sarfika et al., (2016) which states that games have the effect of deep breath relaxation. The types of games such as blowing bubbles, blowing bubbles with straws / pipettes, feather blowing games, blowing whistles, harmonica music games, blowing balloons, blowing toy trumpets and so on and by making a balloon blowing race. Pimpong balls, cotton balls, inflatable objects on a table surface, up or down a certain plane (Sarfika et al., 2016).

Based on the observations obtained by researchers in this study, namely the existence of a pain response in the group of respondents given Slow Deep Breathing therapy, such as grinning, sometimes showing facial wrinkles, complaints or whining, relaxed position on the limbs (limbs in normal position), lying quietly and respondents can be extracted / calmed down. Some of these things indicate that there is a good response if the respondent is given breath relaxation therapy. With a lighter pain response, it will make it easier for doctors to perform circumcision. However, the group of respondents who had not received therapy showed several responses including a grimace or sometimes puckered face, limbs were not calm / not relaxed, looked tense or restless, activity seemed to be writhing, there was movement back and forth, often complaining and whining, crying continuously, shouting response and difficult to calm. This is supported by research by Hesti (2015) with the same technique, namely the provision of Slow Deep Breathing in the process of giving circumcision anaesthesia with the game technique of blowing propellers for 5 minutes, showing that there is an effect on reducing pain intensity in children (Wahyuni et al., 2015). This research is also in line with Marni (2015)

which states that doing game activities will require energy, but that does not mean that a child when they are sick they should not play (Marni, 2015) because the need to play in a child is as balanced as the needs of adult humans when working, The important point in this case is how parents and health workers are able to wisely and observantly provide and choose the types of games that can be played by children if the child is sick and in accordance with the rules of playing in children with vulnerable / sick conditions and who are receiving treatment in the hospital (Nirnasari & Wati, 2020).

CONCLUSION, SUGGESTION AND ACKNOWLEDGEMENT

The effect of complementary therapy, namely Slow Deep Breathing on reducing pain intensity in children who performed circumcision at Yayasan Marzuki Tabanan Bali was found to be statistically significant. With the results of this study, it is hoped that health workers will prioritise using non-pharmacological therapies first rather than using pharmacological therapies, for example by teaching children Slow Deep Breathing breathing techniques as a complementary therapy.

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