



Original Research

## Cooperative Level among Preschooler During Intravenous Injection Procedures: An Explanative Study

Regina Soares Da Costa Ximenes<sup>1</sup>, Yuni Sufyanti Arief<sup>2</sup>, Elida Ulfiana<sup>2</sup>

<sup>1</sup> Bachelor Student, Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia

<sup>2</sup> Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia

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### CORRESPONDING AUTHOR

Yuni Sufyanti Arief  
[yuni-sa@fkn.unair.ac.id](mailto:yuni-sa@fkn.unair.ac.id)  
Faculty of Nursing,  
Universitas Airlangga,  
Surabaya, Indonesia

### ABSTRACT

**Introduction:** Hospitalized preschoolers have higher anxiety and fear reactions, especially given intravenous injections that are included in invasive procedures. The purpose of this study is to determine the cooperative level of preschool children (4-6 years) during intravenous injection procedure.

**Methods:** The research design used was explanative. The samples numbered 34 children aged 4-6 years who underwent treatment in Dahlia room Mgr Gabriel Manek, SVD Hospital selected by purposive sampling with the variables used namely the cooperative level of preschool children during the intravenous injection procedure. Data was collected using cooperative level observation sheets.

**Results:** The cooperative level of preschool children during the intravenous injection procedure was in the uncooperative category of 31 children (91.1%) while the cooperative category was 3 children (8.9%).

**Conclusion:** The cooperative level of preschool children during the intravenous injection procedure tends to be uncooperative. This is influenced by the age and development of the child and the existence of external support from parents and chaperones during the intravenous procedure. Further research can use this study as data in determining appropriate interventions to improve the cooperative attitude of preschool-aged children during intravenous injection procedures.

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## 1. INTRODUCTION

The preschooler is an age prone to illness. Someone who is hospitalized or hospitalized will undergo a variety of diagnostic examinations and medical treatment procedures (Wong *et al.*, 2009). The one method that is often performed during treatment is the administration of drug

therapy via intravenous injection (Kaur, Sarin, and Kumar, 2014). The cooperative behavior of children is essential during treatment in the hospital to achieve an optimal healing process.

The percentage of children who have health complaints and who suffer from the illness in the young age group (0-4 years) is 22.20% higher than the age group above it (5-

9 years) by 18.16%, (10- 14 years) at 12.02%, and (15-17 years) at 8.77%. This is due to early childhood susceptibility to exposure to diseases that are not likely to cause death if not immediately treated further (Susenas, 2018). According to data obtained from Mgr Gabriel Manek, SVD Hospital in the nursery / Dahlia, the number of children with preschool-age has increased over the last 3 years, ie in 2016 there were 432 children, in 2017 there were 424 children and in 2018 there were 459 children. Of the total number of children treated, 100% underwent intravenous injection therapy and 75% received oral therapy and intravenous injection. According to a preliminary survey conducted on February 1, 2019, 4 out of 5 children treated in the Dahlia room showed children who had intravenous injection often cried, refused, said they wanted to go home, struggled, fussy, and always wanted to be accompanied when undergoing the procedure.

Hospitalization has an impact on children's development. Preschoolers' reactions when they are treated in the hospital include protests, despair, and regression, which are proven by several examples of children's appearance that have the potential for cooperative behavior of the child during intravenous injection including crying, kicking, hitting and showing other protesting attitudes so that it affects the length of stay, worsening the child's condition and can even cause death in children (Rao, 2012 and Saputro, 2017). In sick situations, nurses can increase the patient's adaptive response by stimulating changes in the environment, both internal and external (Wong et al., 2009). Efforts made by the hospital Mgr. Gabriel Manek, SVD, such as the policy on child nurses using pink clothes during night service, and other efforts of nurses such as persuading children, giving praise and showing objects around the child's environment to distract during intravenous injection procedures, have not had a significant effect on the cooperative level of pre-school children when undergoing intravenous injection procedures. Health professionals should direct their attention to providing atraumatic services aimed at minimizing the psychological and physical distress suffered by children and their

families in the health care system (Wong et al., 2009).

Based on the description above, the researcher wants to describe the cooperative level of preschool-age children (4-6 years) during the intravenous injection procedure.

## 2. METHOD

### 2.1 Design

The research design used in this study is explanative. The group of pre-age children involved in this study was observed cooperatively at the time of undergoing the intravenous injection procedure by the standard operating procedures of the General Hospital Mgr. Gabriel Manek, SVD.

### 2.2 Population, Samples, and Sampling

The population in this study were all preschool-aged children who were cared for with intravenous drips attached to the Regional General Hospital Mgr. Gabriel Manek, SVD, in November 2019 with a total of 50 children. Samples were selected based on purposive sampling techniques totaling 34 preschool-age children (4-6 years) who were treated in the Dahlia room of the General Hospital of Mgr. Gabriel Manek, SVD who met the inclusion criteria like pre-school children who are hospitalized for the first time in a hospital, have infusions and antibiotic injections installed, in a conscious condition and parents who are willing to be respondents.

### 2.3 Variables

The variable in this study was the cooperative level of the child during the intravenous injection procedure, as measured by the cooperative level observation sheet.

### 2.4 Instruments

The instrument in the form of a cooperative level observation sheet of the child developed by Subandi (2012) contained 30 statements consisting of: the behavior of the child when the nurse invited to talk or talk there were 7 (seven) statement items, the behavior of the child when the nurse came by carrying the tools there are 8 (eight) statement items of care, the behavior of the child when the nurse performs the injection procedure is 11 (eleven) statement items, the behavior of the

Table 1. Distribution of Characteristics of Preschool-aged children undergoing nursing in the Dahlia Room in November 2019.

Characteristics	Respondents	
	n	%
Age of the child		
4 Years	11	32.3
5 Years	11	32.3
6 Years	12	35.4
Gender		
Male	21	61.7
Female	13	38.3
The caring family children in hospitals		
Mother	25	73.6
Grandmother	5	14.7
Childminder	4	11.7
Long been treated at the hospital		
3 days	5	14.7
4 days	12	35.4
5 days	13	38.3
6 days	4	11.7
Diagnosis of disease suffered		
GEA	11	32.3
TFA	7	20.5
Pneumonia	3	8.8
Malaria	8	23.5
DHF	3	8.8
Asma Bronchial	2	5.8

child when the nurse makes an order to the child before performing the injection procedure there are 5 (five) statements. Statements consist of favorable (positive) questions and unfavorable (negative) statements, with a choice of "yes" or "no" answers. The statement is favorable (positive) has a value of 0 if the answer is "no" and value one if the answer is "yes." Vice versa for statements that are unfavorable (negative) has a value of 0 if the answer is "yes" and value one if the answer is "no."

### 2.5 Procedure

The study began on November 5, 2019, by listing the names of respondents who adjusted the inclusion criteria that had been determined. Before starting the research, the researcher explained the things contained in the research explanation sheet to the respondents, which included the title of the study, the purpose of the study, the rights of the respondents, the things that were done

with this research, and the way data was collected. Then the researchers gave informed consent to be signed by the respondent's parents. Researchers make time contracts with the respondent's parents and the respondent itself at each time the injection action will be carried out. The researcher also works with a nurse outside the shift to become a research assistant to facilitate data retrieval. Researchers assessed cooperative levels on the first day of treatment in the morning by observing cooperative levels during the intravenous injection procedure. A cooperative level assessment is carried out when the patient undergoes the injection procedure by looking at the patient's reaction when the nurse arrives carrying the injection device until the procedure is done. The results of the post-test observations will be written on the cooperative level observation sheet to be further analyzed using SPSS.

### 2.6 Analysis

Data analysis in this research was carried out to find out the level of cooperation in preschool children during the intravenous injection procedure. The collected data is then tabulated utilizing research using IBM SPSS Statistics 25 software.

### 2.7 Ethical Clearance

This research has passed the ethical test with certificate number 1815-KEPK issued by Faculty of Nursing, Universitas Airlangga on November 5, 2019.

## 3. RESULT

Table 1 explains that the majority of children aged six years are 12 children (35.4). The majority of sexes are boys with 21 children (61.7%). The majority of families caring for children in hospitals are mothers, 25 respondents (75.6%). The majority of days of treatment in the treatment group were four days with seven respondents (41%), and in the control group that was five days, with 13 respondents (38.3%). Types of disease diagnoses in pediatric patients treated by GEA were 11 respondents (41%).

Table 2 explains that most of the respondents were in the uncooperative category as many as 31 children (91.1%), a

Table 2. Cooperative level of respondents during the intravenous injection procedure in Dahlia Room Mgr. Gabriel Manek, SVD Atambua in November 2019

Cooperative Level	n	%
Not Cooperative	31	91.1
Cooperative	3	8.9
Total	34	100

small portion, namely 3 (8.9%) children were in the uncooperative category.

#### 4. DISCUSSION

The cooperative level of pre-school children during the intravenous injection procedure is mostly in the uncooperative category shown by the child having no eye contact when communicating, crying while hugging parents, and telling nurses to come out. The majority of uncooperative behavior is most often found when the nurses come with injecting equipment, nurses perform injection procedures, and when nurses order something during injection procedures. This happens because preschoolers imagine hospitalization is a punishment, separated, insecure, and independence is hampered. This is in line with research that uncooperative due to bad trauma during hospitalization, ineffective playing time, and from the less communicative nurses so that the child always avoids during examination procedures and always relies on his parents during treatment. This proves that pre-school children when undergoing treatment in hospital tend to experience protests, despair and regression which is evidenced by several examples of the appearance of children who have uncooperative attitudes of children during intravenous injection, including crying, kicking, hitting and showing other protesting attitudes so that it affects the duration day of care (Rao, 2012 and Saputro, 2017). Anxiety in preschoolers is anxiety due to separation from playgroups, bodily injury or pain, and loss of control (Wong *et al.*, 2009). This is in line with research which states that children undergoing hospitalization experience majority anxiety at moderate anxiety levels (Ramdaniati & Hermaningsih, 2016) Another cause that affects different levels of anxiety is the existence of a support system that is the assistance of parents or the closest person of

the child so that children respond differently to stressors. In some children who experience an increased level of anxiety, it can be due to the pain that is felt during local anesthesia and the increased fear when performing surgery related to the tools and officers who perform the surgery (Farida Juanita, 2017).

Children's reactions that show negative attitudes are caused by the child not being able to adapt to the new environment when the child is sick and must be treated in hospital (Purna, Sawitri, and Yuliati, 2016). These physiological changes occur due to the activity of two neuroendocrine systems controlled by the hypothalamus, namely the sympathetic system and the adrenal cortex system (Prabowo & Regina, 2007 in Heryyanoor *et al.*, 2019). The hypothalamus is also called the brain stress center because of its dual function in an emergency. Its first function is to activate the sympathetic branches and autonomic nervous system. The hypothalamus delivers nerve impulses to the nuclei in the brain stem that control the functioning of the autonomic nervous system. The sympathetic branch of the autonomic nervous system reacts directly to smooth muscles and internal organs to produce several body changes such as an increase in heart rate and blood pressure as a response to anxiety. The sympathetic system also stimulates the adrenal medulla to release the hormone epinephrine (adrenaline) and norepinephrine into the blood vessels, thus impacting increasing heart rate and blood pressure, while norepinephrine indirectly through its action on the pituitary gland releases sugar from the liver. Adrenal Corticotropin Hormone (ACTH) stimulates the outer layer of the adrenal gland (the adrenal cortex), which causes the release of hormones (one of the main ones is cortisol/hormone that affects anxiety) which regulates glucose levels and certain minerals (Primadita, 2012).

Anxiety has a great effect on both the quality and intensity of pain experienced, the pain threshold is reduced due to an increase in anxiety and anxiety causes hatred for the pain that is felt (Melzack, 1973 in Breving, 2015). Children with a history of negative medical experiences showed higher levels of anxiety before a venipuncture procedure and

were more distressed and less cooperative during the procedure (Kaur, Sarin and Kumar, 2014). Preschool-aged children often have perceptions about care and procedures in hospitals that are frightening and painful. This study also found three children aged six years who have a cooperative attitude even though no intervention has been given. According to Kusumawardhani et al., (2019), the age of emotional development that a person has is in line with his age. In children who are cooperative before intervention can be caused by coping from parents during treatment. One way to create cooperative behavior for children during care is to give that game education and make children forget anxiety during hospitalization (Hasnita and Gusvianti, 2013).

The maturity of emotional development affects the attitude response that affects the cooperative level of children during the implementation of intravenous injection procedures. Of the many uncooperative children, if seen from demographic data, most of the children are an average age of 4 years, with families who care for the hospital are caregivers and have a medical diagnosis of GEA. According to Rokach, 2010 in The emotions experienced by pediatric patients often reflect ambiguity and apprehension in their evaluation of the medical environment. The results of this study are in line with research conducted by Purna, Sawitri and Yuliati (2016) explaining that age 4 years tend to have a high level of dependency with parents so that when hospitalization tends to reject the new environment. The developments that occurred in the first four years were as large as the developments that occurred in the next 14 years. This is a golden period and is a critical period for children, where the development obtained in this period is very influential in the development of the next period until adulthood for it is important for nurses to recognize and overcome the anxiety level of children during treatment in hospital (Arief *et al.*, 2012). The involvement of parents and family members not only encourages the development of children's abilities and social skills but also will provide support for the development of positive emotions, adequate personalities and care for others (Wong *et al.*, 2009) As such, temperament is influenced

predominantly by the biological makeup of the child, but it is also impacted by heredity, maturation, and experiences (Ryckman *et al.*, 2017). Age and parental assistance, the severity of illness also plays an important role in the cooperative level of the child during treatment in the hospital.

## 5. CONCLUSION

The cooperative level of pre-school children during the intravenous injection procedure tends to be uncooperative. This is influenced by the age and development of the child and the existence of external support from parents and chaperones during the intravenous procedure. Researchers can then use this study as data in determining appropriate interventions to improve the cooperative attitude of preschool-aged children during intravenous injection procedures.

## 6. ACKNOWLEDGEMENT

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## 7. CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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