

Comparison of the Effect of Puppet Clothes and Mascot on Anxiety and Fear of Admission in Children Aged 3-6 Years

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Abstract

Hospitalization causes the child's fear and anxiety, and this can be an important factor in delaying the child's recovery. Since the appearance of nurses in treatment centers has an important role in creating a sense of trust in patients, especially children, it is advisable for nurses to choose the color and outline of their clothes, which will bring about the trust and attention of the children. This study was conducted to compare the effect of puppet mascot and clothing on anxiety and fear of admission in children ages 3 to 6 years. The research was carried out as a randomized, three-group clinical trial that was performed on 75 children aged 3-6 years at admission in Imam Reza Hospital, Mashhad, in summer and autumn of 2016. Qualified children were selected non-randomly. Distribution of children to puppets, clothing and control groups was done by simple random assignment. Data were collected using a questionnaire consisting self-report scales of children's fears and anxiety. Data were analyzed using one-way ANOVA using SPSS software version 16. Findings indicate that the level of anxiety was significantly higher in the control group than in the group of mascot and clothing. The difference in the anxiety score in the wear and control group was 36.3 and the difference in the anxiety score in the tread and control group was 17.1, and this difference was statistically significant ($p < 0.001$). Moreover, the level of fear was significantly more in the control group than in the two groups of mascot and clothes ($p < 0.001$).

Keywords: Children, nursing clothes, mascot, anxiety, fear, admission.

Introduction

About 30% of children are hospitalized at least once during childhood and about 5% experience multiple hospitalizations (Rabiee et al, 2007). According to official reports in the UK, there is one hospital admission for every eleven people under the age of 19. In the United States, approximately 20-22% of children and adolescents receive medical care each year due to an injury in a hospital emergency department, and at least the same number are treated in the office (Hallstrom, 2004).

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Hospitalization is always associated with effects on a child's life (Talebi et al, 2015). Hospitalization for children represents a crisis of socialization and adaptation to their new environment, in a situation where not only they are not healthy but they are also exposed to unknown factors (Reyhani et al, 2014). Most children view illness and hospitalization as punishment (Hamed Tavasoli et al, 2012). Scholars believe that hospitalized child is exposed to various threats, including separation from parents, lack of trust, physical injury, pain, unfamiliar environment, loss of independence, and additional stimuli such as noise and odor (Stapersma et al, 2018). On the other hand, due to the child's limitations in defense mechanisms such as problem solving and decision making skills, the child's self-centered view of the world and his limited experiences cause fear in threatening situations such as hospitalization (Sheldon, 1997). This fear can adversely affect the child and as a result the child loses an important part of his ability to work and his resistance decreases (Whaly & Wong, 1991).

Since hospitalization causes fear and anxiety in the child and can be an important factor in delaying the child's recovery (Cuzzocrea et al, 2016), it is a major problem for both family and the child who is trying to perform tasks related to his/her developmental (Cobham et al, 2020). Stress is a phenomenon that causes passive changes, and in general, becomes apparent when a person is exposed to social or physiological and physical stimuli, and ultimately disrupts a person's comfort (Del Nord, 2006). Anxiety during hospitalization depends on the developmental level of the children, the history of separation from the parents, duration of hospitalization and the available support system (Norian et al, 2013). Anxiety, especially in children may cause undesirable psychological effects in the future. Fears can take many forms including the stress and fears common in childhood, "getting sick" and "being hospitalized" (McCann & Kain, 2001). A hospitalized child is separated from the environment with which he is familiar and transferred to a new situation, with different rules and practices, and in an unfamiliar place and in contact with people he did not know before, which can adversely affect the child's behavior (Del Nord, 2006). Physical environment affects a person's behavior, and environments with positive and negative experiences can cause a person to overcome stress or become stressed; so in hospital environments, negative emotional reactions such as anxiety or fear may occur. Confronting with hospital environments of any size and shape, provides a terrifying experience for any person, especially a child (Wright et al, 2007), therefore the hospital environment and Hospitalized space for a sick child is often described as a place that is "strange," "incomprehensible," "unfamiliar," and "scary" (Whitehouse et al, 2001).

Non-pharmacological methods of pain and anxiety relief have attracted the attention of medical staff and patients. These types of interventions are effective, simple and low-risk and do not require special time and costly equipment (Sadeghi et al, 2013). The use of various thought deviation methods have been proved to be effective in reducing pain and anxiety in children (Mamiyanlo et al, 2001). Puppet therapy has been proposed as one of the most effective types of treatments. Puppets are a universally accepted way to communicate with children (Shives et al, 2008). From the perspective of mental health, puppet therapy is a pleasant method of treatment in the field of psychotherapy. Puppet can be seen as an intermediate agent accepted by children to communicate and exchange feelings, emotions and thoughts. In connection with the puppet, the child likes to express his position and define the world around him. The child releases his mental and physical energy by playing with the puppet (Butler et al, 2009).

The nurse's uniform is the first means of communication between the patient and the nurse and represents a kind of non-verbal communication that transmits different messages between them. Also, the nurse's clothes can increase her self-confidence and convey a sense of calm and security to patients, so the color and design of the nurse's clothes can create positive or negative images in

patients' minds (Mobaraki et al, 2015). The design and color of nurses' clothes has undergone many changes through the time. These changes have sometimes varied based on the type of practice and the role of nurses in different areas (Livingston, 1995). The effect of color and design of clothing of health care providers on their relationships with patients has long been discussed (Taylor et al, 1999). Since nurses spend more time with patients than other staff, they are in the best position to better relieve anxiety with non-drug therapies to reduce anxiety (Reyhani et al, 2014). Children are terrified of doctors, nurses, and hospital staff, in other words, they are afraid to see the white robe which limits their communication with the nurse; while they usually prefer of colorful women's dress (Meyer, 1992).

In this regard, nurses' clothing, which complements the non-verbal communication between the nurse and the child, may play a key role in creating a low-stress environment. Studies have shown that the clothing of health care staff is effective in reducing children's fear of dealing with them (Dotton et al, 2002). Studies show that nurses' clothing is an effective factor in reducing children's stress; so that informal clothing by nurses increases children's confidence (Meyer, 1992). Therefore, considering that the appearance of nurses in medical centers has an important role in creating a sense of trust of patients, especially children, it is worthwhile for nurses to choose the color of their clothes in a way that attracts the trust and attention of children to reduce their stress. Considering the interest of children in bright colors and considering the fact that in Iran nurses' uniforms in children's wards are still white, this study aims to compare the effect of puppet clothes and mascot on anxiety and fear of admission in children.

Materials and Methods

This study was conducted in the form of a three-group randomized clinical trial with the aim of comparing the effect of puppet clothes and mascot on anxiety and fear of admission in children aged 3-6 years. The statistical population included children aged 6-3 years who were transferred from the emergency department to the pediatric ward of Imam Reza Hospital, from which a sample of 75 children was selected. The children were randomly assigned to the intervention group (puppet clothes) and the control group (white clothes).

Inclusion criteria included informed consent to participate in the intervention; being transferred from the emergency department of Imam Reza Hospital to the pediatric ward; presence of the parents; no visible growth retardation or lag; not having a chronic illness (diabetes, known heart disease, known kidney disease); age range of 3-6 years; not taking anti-anxiety medication (based on patient records and doctor's prescription). Exclusion criteria include refusal to participate in the study for any reason, children in need of emergency intervention; existence of severe pain during the intervention.

Three questionnaires were used to collect data as described below. The patient demographic information form included the personal characteristics of the patients participating in the study. The questions of this questionnaire included age, gender, child companions, level of education of parents, occupation of parents.

The self-report scale of children's anxiety had five faces with scores of 0,1, 2,3,4. A score of zero indicates no anxiety, a score of 1 indicates low anxiety, a score of 2 indicates moderate anxiety, a score of 3 indicates severe anxiety, and a score of 4 indicates very severe anxiety. Since it is a self-reported and visual tool, the tool is scored by the child himself (Gazal et al, 2015).

The Child Fear Self-Report Scale developed by McKinley et al. (2003) was used to measure anxiety or fear in the intensive care unit. Items on this scale consisted of a row of five faces from left to right, ranging from fearless (neutral) to intense fear, respectively. The evaluator responds to the scale by examining which face is closest to his or her level of fear. The scoring of these forms is 0 (no fear), 1 (low fear), 2 (slightly higher fear), 3 (high fear), 4 (severe fear), and the one who gets the highest score indicates the highest level of fear. Due to the fact that it is a reporting and visual tool, the tool is scored by the child himself (McMurtry et al, 2011).

The validity of the questionnaires was confirmed using a content validity method. To evaluate the reliability of the questionnaire, Cronbach's alpha coefficient was measured. The alpha coefficient in all cases was more than 0.7, which indicates that the scales used have acceptable reliability.

Data were entered into the computer after coding using SPSS software version 16. Descriptive statistics including central and dispersion indicators such as mean, standard deviation and frequency distribution were used to describe the characteristics of research units in each group. Data normality was tested by Kolmogorov-Smirnov and Shapiro-Wilk tests. First, in order to evaluate the homogeneity of the studied groups in terms of contextual and intervening variables, Chi-square test (for qualitative variables such as gender) and one-way analysis of variance (for quantitative variables such as age) were used. Since child anxiety variable did not have a normal distribution, non-parametric Kruskal-Wallis test was used to compare inter-group difference. Child's fear variable had a normal distribution, so, one-way analysis of variance was used to compare between groups values. In order to compare the level of anxiety in terms of the child's gender, the non-parametric Mann-Whitney test was used and for the fear variable, the independent t-test was used. Pearson correlation coefficient test was used to determine the correlation between quantitative contextual variables (such as age) and anxiety and fear variables ($p < 0.05$).

Results

Table 1 shows the comparison of the mean and standard deviation of the anxiety score in the three groups. Findings indicate that the level of anxiety was significantly higher in the control group than the two groups of puppet mascot and clothes. The difference in anxiety score in clothing and control groups is 0.36 and the difference in anxiety score in puppet mascot and control groups is 0.17. The result of Kruskal-Wallis test showed that this difference was statistically significant ($p = 0.001$). Pairwise comparisons using Scheffe test revealed that there was a significant difference between the groups of "puppet mascot and control" ($p < 0.001$) and "clothe and control" ($p < 0.001$); While there was no significant difference between the groups of "puppet mascot and clothes" ($p < 0.35$).

Table 1
Mean and Standard Deviation of Anxiety Score

Anxiety score Groups	Number	Mean \pm Std	Kruskal-Wallis test
Puppet mascot	25	15.0 \pm 21.7	Chi-square =26.50 $P \leq 0.001$
Clothes	25	6.0 \pm 10.9	
Control	25	42.0 \pm 28.6	
Sum	75	21.0 \pm 26.3	

Table 2 shows the comparison of the mean and standard deviation of the fear score in the three groups studied. Findings revealed that the level of fear was significantly higher in the control group than the

two groups of puppet mascot and clothing. The result of one-way analysis of variance showed that this difference was statistically significant ($p < 0.001$). Tukey test was used for pairwise comparisons; and indicates that there was a significant difference between the groups of "puppet mascot and control" ($p < 0.001$) and "clothes and control" ($p < 0.001$); While there was no significant difference between the groups of "puppet mascot and clothes" ($p < 0.37$).

Table 2

Mean and Standard Deviation of Fear Score

Anxiety score Groups	Number	Mean \pm Std	ANOVA
Puppet mascot	25	26.0 \pm 32.7	F =24.16
Clothes	25	14.0 \pm 19.2	
Control	25	63.0 \pm 35.4	P \leq 0.001
Sum	75	34.3 \pm 36.2	

The results of the correlation test are shown in Table 3. As seen in the table, in the puppet group there is an inverse correlation between the child's age and anxiety score; and also between mother's age and the anxiety score of the children. Moreover, in the clothing group, there is an inverse correlation between mother's age with anxiety score and father's age with children's anxiety score.

Table 3

The Results of Correlation Test

Groups	Score	Child age	Mother age	Father age
Puppet mascot	Anxiety score	-0.35=r 0.09 \leq p	-0.56=r 0.003 \leq p	-0.21= r 0.32 \leq p
	Fear score	-0.21= r 0.30 \leq p	-0.24= r 0.25 \leq p	-0.21= r 0.32 \leq p
clothes	Anxiety score	0.17= r 0.43 \leq p	-0.41= r 0.04 \leq p	-0.41= r 0.04 \leq p
	Fear score	0.22= r 0.29 \leq p	-0.04= r 0.86 \leq p	-0.07= r 0.75 \leq p

Discussion

Findings of the present study showed that the level of anxiety was significantly higher in the control group than the two groups of puppet and clothes. The anxiety score obtained in three different groups indicates the positive effect of puppet clothes and tunics on the level of anxiety in children after the intervention. Studies on children's anxiety offer various solutions to reduce anxiety. In hospital environments, negative emotional reactions such as anxiety or fear can be evoked by visiting hospital environments of any size and shape (Sandra et al., 2001). Among the various children's toys, the puppet is most similar to the human body structure and brings the most attention to play for children. Dolls are very effective in playing the role and exploring thoughts and feelings (Varcarolis et al, 2010). Reyhani et al (2014) reported that the use of puppets had an effect on anxiety before appendicitis surgery in children. There was a significant difference to the control group after the intervention and the anxiety of this group decreased by 35.5%; But in the control group, the mean anxiety score increased by 13.6%. Goodarzi et al (2009) reported that children and their parents preferred pink and light blue to navy blue. 45.2% of girls were interested in pink and 31.4% of boys were interested in light blue. Girls 'and boys' opinions about white were the same and accounted for

0.06%. This is significant in our study in that children were more exposed to white robes than the other two groups. In our study, we also saw an 85% reduction in anxiety in the clothing group. A study by Rabiee et al. (2008) entitled the effect of music on the anxiety of hospitalized children showed that music performance in hospitalized children can reduce anxiety so that the mean score of children's anxiety in the intervention group was significantly different from the control group after the intervention. Lee et al (2012) compared the effect of cartoons and children's favorite toys on reducing anxiety in 3-7 year old children in the operating room before induction of anesthesia. The results of the study using the modified Preoperative Anxiety Scale showed that the recorded scores were significantly lower in both animated cartoon and toy group than in the control group.

Findings of the present study showed that the level of fear was significantly higher in the control group than the two groups of puppet and clothes. Fear can be considered as an unavoidable emotion, a reaction to a known and external threat of a specific origin in which the person is afraid for no apparent reason (Jalali et al, 2011). At least 20% of children with a previous history of hospitalization show some degree of behavioral or emotional disorder that increases the duration and frequency of hospitalization (Jones et al, 2010). Molla et al. (2000) reported that setting up playrooms in children's wards could be an important step in reducing the fear and anxiety of hospitalization. This study showed that the mean score of children's fear in the intervention group was significantly different from the control group after the intervention and the fear of this group decreased one hour after the intervention; But in the control group, the mean fear score increased. Kaviani et al. (2012) stated that hospitalization and surgery increase children's fear of dental treatment. A history of hospitalization in inpatient wards causes more fear in children, which can be due to repeated diagnostic and therapeutic procedures during the hospitalization period. As a result of the evaluations performed with the pediatric fear scoring tool CFSS –DSS, it was found that the level of fear in children with a background of hospitalization was 4.6 more than the surgical and control groups. Similarly, Jalali et al. (2011) reported that play therapy reduces social fear in children.

Conclusion

According to the results, children in the clothing group had less fear and anxiety compared to the puppet mascot group. The mean score of anxiety in children with a history of hospitalization was approximately 1.01 higher than children without a history of hospitalization, which is not statistically significant. The mean score of fear in children without hospitalization experience was approximately 0.6 higher than children with a history of hospitalization, which is not statistically significant. In the puppet mascot group, there is an inverse correlation between the child's age and the child's anxiety and fear score. In other words, as the child gets older, the child's anxiety and fear scores decrease. According to the above notes, the presence of puppet clothes has reduced fear and anxiety in children, and hence, it is recommended to use these clothes at the beginning of the admission of children in the ward. Investigating the effect of the presence of a puppet in a white dress on preoperative anxiety in children, the effect of the presence of a puppet with play therapy on preoperative anxiety in children, impact of the presence of a puppet on the anxiety of children at the time of hospitalization, and checking the color of staff clothes on the level of fear and anxiety can be good topics for further studies.

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