The Effectiveness of Handicrafts on Anxiety Reduction among Hospitalised Children in Paediatric Ward of Dhulikhel Hospital

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ABSTRACT

Introduction: Disease and hospitalization can be the first crisis which a child encounters. It can cause acute anxiety to them which may sequel their uncooperative behavior to the treatment procedures. Furthermore, high level of anxiety if persisted for longer period can affect their physiological and psychological health. So, in order to deal this anxiety beforehand, handicraft has become an effective play intervention in the hospital. Hence, we conducted this study to investigate the effectiveness of handicrafts on anxiety reduction among hospitalized children.

Method: This is a pre-experimental study administered to 30 admitted children in Paediatric Ward of Dhulikhel Hospital who were selected using consecutive sampling technique. Anxiety levels before and after intervening handicraft were assessed via interview using State-Trait Inventory of Cognitive and Somatic Anxiety - Child Version (STICSA-C) tool where intervention was making handicrafts with colorful paper as per children's capacity and preference for total six times in two consecutive days at four hours interval.

Results: The study showed significant difference between anxiety score before and after intervening handicraft (42.70 ± 10.60 Vs. 33.30 ± 8.70, p = < 0.001). While, anxiety level before intervening handicraft was not significantly associated with the selected demographic and clinical variables of children.

Conclusions: In the study, handicraft was an effective play material in reducing anxiety among hospitalized children. But it is necessary to perform further studies that will take into account greater methodological stringency.

Keywords: Anxiety; Colorful paper; Effectiveness; Handicrafts; Hospitalization.

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INTRODUCTION

Disease and hospitalization can be the first crisis that a child encounters. Due to the fact that tension causes a change in health condition and environmental routine, and that children have fewer compatibility mechanisms for elevating tensions, this age group is more vulnerable to crisis arising from disease and hospitalization.[1] Because of unfamiliar environment and medical procedures and unaware of the reasons for hospitalization, it can affect their spiritual world, as manifested by regression, slowed development, eating and sleep disorders, appearance of sympathy-evoking habits and imaginative fears, over-dependency, aggressiveness, feelings of helplessness and the onset of anxieties.[1,2] Beside these, entry to the intimidating environment of a hospital causes acute anxiety and stress not only to the child but also to his or her family.[3]

In a study conducted in a paediatric clinic, using the International Classification for Nursing Practice (ICNP(r)), 42 diagnostic concepts were developed, where 88.5% children developed anxiety from hospitalization.[4] Experiencing high levels of stress or chronic stress can undermine physical health, for example, by increasing the likelihood of a weakened immune system, heart disease, obesity and diabetes.[5] Arguably for some children, this is a crisis that if not mastered properly may result in blocks or distortion in their process of development, and might be exceedingly damaging to their sense of identity and self-esteem.[6] Likewise, these childhood anxieties increase risk for anxiety onset later in life and are associated with long-term consequences related to school achievement and development.[7] Excessive anxiety also impedes children's efficacy in coping with medical treatment and increases their uncooperative behavior and negative emotions towards healthcare professionals. Thus, high levels of anxiety can be harmful to children's physiological and psychological health.[2,8,9]

Upon hospital admission, particular attention is paid to the improvement of clinical symptoms of disease and to a reduction in physiological burden. As a result, play is often disregarded, or considered of minor importance.[10] However; the need for play is even greater in a hospital environment, where the child is exposed to strange sights, sounds and smells. This is now recognized by the National Service Framework for Children (2003), who advised that children visiting or staying in a hospital have a basic need for play and recreation that should be met routinely in all hospital departments providing a service to children.[11] Similarly, many studies also indicated that children having some form of difficulties due to psychological problems are helped through the use of psychological based therapies such as play and creative arts.[12,13]

Making paper handicrafts is a range of voluntary and motivated activities which creates pleasure and enjoyments in children. Anxiety and other hospital related stress can be reduced among children by playing with handicrafts and can enhance their creative skills and get diverted from their illness and parental separation.[14] As therapeutic play is effective in reducing children's anxiety and fears from the time of hospital admission to the post-operative period or hospital discharge,[15-17] achieving self-expression,[18] cooperation during painful procedures and willingness to return to the hospital to continue their treatment,[17] it could be more beneficial in context of developing countries like Nepal to reduce hospital cost by minimizing hospital stay and also might be effective in improving treatment compliance among children. In addition, making paper handicrafts is simple, cheap as it does not require special playing toys or a separate playroom but can be carried out in the bedside itself. Thus, researcher was interested to carry out the study. Hence, the primary purpose of study was to assess the effectiveness of handicrafts on anxiety reduction among hospitalized children and the secondary purpose was to find association between anxiety score before intervening handicraft with selected demographic and clinical variables. We intend that if the results of this study are beneficial, then it can be easily replicated due to its simplicity and low cost. It can motivate nursing education programme to incorporate this aspect in nursing education curriculum. The results of this study may serve as a basis for the nursing professionals and the students to conduct further studies in different aspects of play activities in hospitalized children.

METHODS

A pre-experimental, one-group pretest-posttest design was adopted for the study. The study was conducted for a month from November to

Table 1. Socio-demographic Characteristics of Children

Characteristics	Mean ± SD
Age (Completed years)	10.50 ± 1.83
Characteristics	**Frequency (%)**
Gender	14 (46.70)
• Male	16 (53.30)
• Female	
Birth order	14 (46.70)
• First child	12 (40.00)
• Second child	4 (13.30)
• Third or more	
Area of residence	20 (66.70)
• Urban	10 (33.30)
• Rural	
Type of family	
• Nuclear	18 (60.00)
• Joint	12 (40.00)
Education	
• Basic education	30 (100.00)
Household income	
• Medium-class	23 (76.70)
• Low-class	7 (23.30)
Number of siblings	
• No any	3 (10.00)
• One	19 (63.30)
• Two or more	8 (26.70)
Presence of caretaker	
• Mother	18 (60.00)
• Father	9 (30.00)
• Other	3 (10.00)

Table 2. Clinical Data of Children

Characteristics	Frequency (%)
History of hospitalization within last one year	
• Yes	2 (6.70)
• No	28 (93.30)
Problem during present hospitalization	
• GI problems	11 (36.70)
• Respiratory problems	9 (30.00)
• Urinary problems	5 (16.70)
• Others	5 (16.70)
Days of hospital admission	
• First day	20 (66.70)
• Second day	10 (33.30)

December 2019, among 30 children admitted in Paediatric Ward of Dhulikhel Hospital who were selected using consecutive sampling technique. Children of age group eight to 14 years within first and second day of hospital admission; who were conscious, oriented; had apparently normal growth and development; and willing to participate were included while children who were critically ill and not co-operative to participate were excluded from the study. Administrative approval was obtained from Kathmandu University School of Medical Sciences and ethical approval was taken from Institution Review Committee, KUSMS. The investigator had self-introduced to child and family, and also had explained the purpose of conducting study. A good rapport was established with child and family, and then informed written consent was taken voluntarily from the caretaker while assent was obtained from the participants. The demographic information was collected via interview questionnaire from the participant's caretaker. Anxiety-score was obtained via interview using State-Trait Inventory of Cognitive and Somatic Anxiety- Child Version (STICSA-C)[19] tool before intervention. Before introducing handicrafts, the investigator had explained about handicrafts to the participants. Then, the participant was made to sit comfortably on the bed along with his/her caretaker, ensuring that he/she was free from pain, hunger and sleep. The researcher along with the participant had made handicrafts as per capacity and interest of children with the colorful paper for two consecutive days at four hours interval i.e. total six times for 15-30 minutes for each. After completion of sixth intervention, anxiety-score was re-assessed using the same scale used in pre-test to identify the change in anxiety among participants. The data were collected via Open Data Kit using android mobile phone. The XLS files were transferred directly from the Kobo tool box to SPSS-23 for analysis. Statistical Package for Social Sciences version 23 (SPSS-23) was used for data analysis. Paired t-test was used to compare anxiety scores before and after intervening handicraft. Linear regression was used to determine the association between anxiety score before intervening handicraft with selected demographic and clinical variables.

RESULTS

Table 1 presents sociodemographic characteristics of children where mean age was 10.50 ± 1.83years. More than half (53.30%) of children were female and just below half (46.70%) of them were first child in family. Two-third of them was from urban

Table 3. Comparison between anxiety scores before and after intervening handicraft

	Before intervening handicraft	After intervening handicraft	Mean difference (95% CI)	T - value	P - value
Mean Score (± SD)	42.70 (10.60)	33.30 (8.70)	9.40 (6.10 - 12.70)	5.74	< 0.001

area and three-fifth of them belonged to nuclear family. All children were having basic education. Regarding household income, about three-fourth of children (76.70%) was from middle-class family. With regard to number of siblings, more than three-fifth of them (63.30%) had only one sibling. While considering presence of caretaker, three-fifth of children had mother as their caretaker in hospital.

Table 2 shows, out of 30 children, majority of them (93.30%) had no history of hospitalization within last one year. Almost two-fifth (36.70%) of them had some GI related problems and more than three-fifth (66.70%) of them were at first day of their hospital admission.

Children's anxiety scores before and after intervening handicraft was found to be statistically significant (with t - value = 5.74 and p-value < 0.001).

Table 4 depicts that there was no statistically significant association between anxiety score before intervening handicraft with selected sociodemographic and clinical variables of children.

Table 4. Association between anxiety Score before

Variables	Bivariate	
	B (95% CI)	P - value
Mean Age (Completed years)	1.43 (-0.75 - 3.61)	0.19
Gender		0.55
• Male	Ref	
• Female	-2.38 (-10.45 - 5.70)	
Birth order		
• First child	Ref	
• Second child	4.54 (-4.19 - 13.26)	0.30
• Third child or more	1.79 (-10.79 - 14.36)	0.78
Area of residence		0.69
• Urban	Ref	
• Rural	1.70 (-6.87 - 10.27)	
Type of family		0.47
• Nuclear	Ref	
• Joint	2.94 (-5.25 - 11.14)	
Household income		0.78
• Medium class	Ref	
• Low class	-1.33	
Number of siblings		
• No any	Ref	
• One	3.56 (-10.31 - 17.43)	0.60
• Two or more	6.29 (-8.82 - 21.41)	0.40
Presence of caretaker		
• Mother	Ref	
• Father	2.89 (-6.24 - 12.01)	0.52
• Other	-2.67 (-16.61 - 11.27)	0.70
Problem during present hospitalization		
• GI problems	Ref	
• Respiratory problems	6.46 (-3.31 - 16.22)	0.19
• Urinary problems	-3.75 (-15.46 - 7.97)	0.52
• Others	2.46 (-9.26 - 14.17)	0.67
Days of admission of present hospitalization		0.35
• First day	Ref	
• Second day	-3.95(-12.41 - 4.51)	

DISCUSSION

The study showed that there was statistically significant difference between anxiety score before and after implication of paper handicrafts. This concluded that handicrafts were effective in reducing anxiety among hospitalized children with mean difference of 9.4 and p - value < 0.001. This was supported by the study conducted by Mathew CS et al where statistically significant difference with p-value < 0.05 was found but mean difference was only 4.3 which is nearly half the value of the present study.[14] Another study by Malathi et al also found it as effective in reducing hospitalized anxiety with mean difference of 12.07 (p - value < 0.01) which is approximately 1.3 times higher than that of the present study.[20] Further study also supported the findings of the present study.[21]

The study found no association between age of children and their anxiety (p = 0.19) which was supported by the findings of previous studies[14,22-24] while other studies did not support this finding.[14,25-28] The study showed no significant association between gender of children and their anxiety level (p = 0.55) though it had found that anxiety level among male children was more than

the double of female children which was supported by the findings of the previous studies.[14,22-24]

In the study, first child was found to be lesser anxious than that of higher birth order, although this association was not significant which was similar to the findings of various previous studies[14,23,27] but contrasted with the findings of other studies.[26,28] The reason behind such finding might be based on the hypothesis that first borns are highly responsible, are often a dominating role model, parent pleasers and try to be adaptive perfectionist.

The study concluded that anxiety level among children of rural area was 1.7 units higher than those from urban areas with no significant p-value ($p = 0.69$) which was similar to the findings of the studies done by Mathew et al, Nisha et al and Mathivadhani et al.[14,24] This difference might be due to lesser exposure to hospital environment among rural children due to inaccessibility of services. The study found no association of children's anxiety with their family-type ($p = 0.47$) and household income ($p = 0.78$), though there was approximately three times more anxiety among children from joint family and 1.33 units less anxiety among children belonging to low-class family. This finding was similar to the findings of the previous studies.[14,25] While, this finding was contrast to the findings of the study done by Malathi et al and Saharan et al.[20,29] This huge level of anxiety seen among the children from joint family might be due to over-involvement of grandparents in children's lives. As it is hypothesized that parents who criticize and minimize the child's feelings, undermine the child's emotion regulation and increase their sensitivity to emotional health problems such as anxiety and depression.

The study demonstrated that children's anxiety increased by more than three units with a unit addition of siblings, though it was not statistically significant. This finding was supported by the study done by Suryawanshi et al[27] but, contrasted with the study done by Karn et al. which showed statistically significant but negative association with number of siblings ($p = 0.01$).[25] The present study showed no relation between presence of caretaker and anxiety level of children which was similar to the findings of previous study conducted by Nisha K et al[24] while was contrast to the findings of the study done by Mathew et al and Saharan et al.[14,29]

The present study showed highest level of anxiety among children with respiratory problems without statistically significant contribution which was supported by the study conducted by Li WH et al.[30] The study showed negative but not statistically significant association ($p = 0.35$) with days of hospitalization such as anxiety level among children on second day of hospital admission was 3.95 units lesser than that of first day which was supported by the study done by Li WH et al where small negative correlation was found without statistically significant contribution.[30] While there was significant association between them in the study conducted by Malathi et al ($p < 0.01$).[20]

We believe that small sample size, misclassification, or other methodological issues may explain the differences found among studies. Although our study has the strengths that consecutive sampling was used for the selection of participants and interview was conducted by researcher herself using validated tool. However, our study is a local study conducted in a small sample in a single centre, which might make it difficult to generalize our results to the entire population.

CONCLUSIONS

The study findings revealed that handicrafts helped children in reducing anxiety during hospitalization. It also concluded that there was no significant association of the children's anxiety with their sociodemographic and clinical variables.

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