



To Assess the Level of Anxiety of Parents Regarding Invasive Procedures among Hospitalized Children

Ashwini Thawkar^{1*} and Archana Maurya¹

¹*Department of Child Health Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Science (Deemed to be University), Sawangi Meghe, Wardha, Maharashtra, India.*

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i47A33038

Editor(s):

(1) Dr. Syed A. A. Rizvi, Nova Southeastern University, USA.

Reviewers:

(1) Rakesh Nahrel, Chhattisgarh Institute of Medical Sciences (CIMS), India.

(2) Wassem Fatima, Northern Border University, Saudi Arabia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/73797>

Original Research Article

Received 01 July 2021

Accepted 18 September 2021

Published 28 October 2021

ABSTRACT

Background: Hospitalization is a completely new experience to infants and young children. Some parents know the illness about their child but some have not but most of them don't know the treatment regimen on illness of child through which he/ she is going through. When the child is admitted in patient department he or she has go through. As they don't know about the procedures through which their child undergone; that responsible for the increase in anxiety level of father and mother both. Various questions are there in their mind; about which kind of procedure is this, my child is bearing or not? How painful it is? Is my child crying? All these questions are arises. As they don't know about the procedures so these questions are increasing the stress level and anxiety level of parents.

Objective: To assess the level of anxiety of parents regarding invasive procedures among hospitalized children 2. To compare the level of anxiety of mother and father regarding invasive procedures among hospitalized children 3. To associate the level of anxiety of parents regarding invasive procedures with selected demographic variables.

Methods and Materials: Descriptive survey method.

Tool: Standardized and validated STAI anxiety tool.

Research Approach: Descriptive approach.

Sample Size: 100.

Sampling technique: Non convenient sampling technique

Sample: Parents of hospitalized child.

Setting: Selected hospital.

Results: In these study the level of anxiety were seen into 4 categories; no anxiety, mild, moderate and severe anxiety. No anxiety had been seen in parents having score range (0 - 25%), mild anxiety is assessed in 15 parents having anxiety score (26 – 50%) while in 80 parents an moderate anxiety is assessed having score range in between (51 – 75%) and severe anxiety was assessed in 5 parents of an hospitalized child who were undergoing selected invasive procedures and having anxiety score in between (76 – 100%) on Comparison of level of anxiety of mother and father regarding invasive procedures in hospitalized children shows that mother had more anxiety level than father.

Conclusion: In the study, moderate anxiety is assessed in 80% of parents while shown an association in between anxiety level and knowledge of a parents as well as the age of hospitalized child.

Keywords: Assess; anxiety level; hospitalized child; knowledge.

1. INTRODUCTION

Every day, millions of children are operated for various diagnostic and surgical procedures, with reported incidences of their parents' anxiety ranging from 50% to 75%, in which anxiety-related illness identified in 47% of parents, who were significantly more concerned than others about all aspects of their children's hospitalization. Once children are undergoing anesthesia and surgery, many parents feel anxious before, during and after their child's procedure, focusing on overall safety, side effects, and risks of anesthesia, concerns about pain and uncertainty of the surgical outcomes [1]. The presence of state anxiety in parents may result in somatic and psychological manifestations which may affect the parents' ability to function normally and is, of course, a concern not only for the family but also for the health professionals caring for the child. When parents' anxiety is becoming excessive, it will become a barrier to caring for one's child, negatively affects the parents' coping with new or stressful situations while the children are undergoing surgery [2]. Several studies also demonstrated that the child's anxiety can be transmitted to the parent, which can lengthen the child's postoperative time and hurt the family dynamics [3]. On the other hand, children whose parents' having moderate or severe preoperative anxiety experienced higher pain scores the degree to which each parent experiences anxiety related to their child's anesthesia and surgery depends on many self and their child's factors. These include, age, type of surgery, gender, occupation, being a

mother or a father, level of education, baseline anxiety, previous hospitalization, situational parental anxiety, and being the only child in the family are found to be predictors of preoperative parental anxiety in different literatures [4].

1.1 Objectives of the Study

- To assess the level of anxiety of parents regarding invasive procedures among hospitalized children
- To compare the level of anxiety of mother and father regarding invasive procedures among hospitalized children
- To associate the level of anxiety of parents regarding invasive procedures with selected demographic variables.

2. MATERIALS AND METHODS

Quantitative research approach – cross sectional research design was used for 100 samples were participated in consist of clients or subjects who are the parents of an hospitalized child having a age group in between 1 to 5 year by using non convenient sampling technique and setting of an study was an Aacharya Vinoba Bhave Rural Hospital, Sawangi In Wardha district. Dependant Variables were the anxiety level of an parents of an hospitalized child who are undergoing certain invasive procedure and independent variables were the age, marital status, gender of an parents while in child (age, sex, order of an hospitalized child, frequency of an hospitalization) and inclusion criteria were the parents willing to participate in the study, parents present during data collection and parents of an

children recommended for the invasive procedure. As well as the exclusion criteria were the parents who are not mentally fit.

An research study was conducted from February to April 2019. All consecutive volunteer parents of children (aged < 18 years) who undersign for undergoing surgical operations were included in the study. Parents refused to participate, unable to communicate, with known psychiatric disorders, which could not understand Marathi and Hindi language languages, who took anxiolytics medications in the last 72 hours of data collection were excluded from the study.

The outcome variable of this study was parental anxiety which was assessed using State and Treat Anxiety Inventory (STAI) tool. The independent variables were socio-demographic measurements of the parent (relation with hospitalized child, age of child in years, education, occupation, family type, socioeconomic status, type of hospitalization and order of hospitalized child and age of an hospitalized child).

A single population proportion formula was used to determine the sample size. Since there was no previous similar study done, the sample size was calculated by taking the assumption of a proportion of preoperative parental anxiety 50%, with 95% of confidence intervals, and 5% margin of error and finally the sample size for this study was taken 100.

Data were collected from semi structured questionnaire. The questionnaire are primarily prepared in the English language and translated into the Marathi language. The questionnaire included the short scale of State-Trait Anxiety Inventory (STAI) which has six items that measure baseline (trait T-STAI) and situational (state S-STAI) anxiety levels. The original STAI has 40 items, 20 in

each sub- scale (state and trait). It has high reliability and validity with Cronbach's alpha 0.896e0.950. The short versions of the STAI scale were developed and found valid and as effective as the extended version in the measurement of anxiety. To calculate the total STAI score (ranges from 20 to 80) from parents feels no anxiety at all to feel high level of anxiety.

Study participants are provided with the adequate information regarding the assessment of tool (STAI). The collected data were checked for completeness and clarity. The completed questionnaire was checked for inconsistencies and missed values. The variables were coded and entered into the epidata version 4.2, then transferred to SPSS version 23 and cleaned.

Training for data collectors and supervisors was provided by the principal investigator. A pilot was conducted in 20 (10%) parents of hospitalized child who underwent invasive procedure that were included in the main study. Then necessary corrections were made accordingly to the questionnaire for the main study. The data collectors and supervisors were closely mentored by the principal investigator throughout the study period. Study participants were provided with adequate information regarding the assessment tool (STAI). The collected data were checked for completeness and clarity. The completed questionnaires were checked for inconsistencies and missed values. Incomplete questionnaires were excluded from the analysis. The variables were coded and entered into the Epidata version 4.2, then transferred to SPSS version 23 and cleaned. Descriptive statistics is used to explain the study participants about study variables. Bivariate analysis was performed to determine each of the independent variables. Finally, data were presented using numbers, frequencies, tables, charts, and figures accordingly. A P value of less than 0.05 is considered statistically significant.

Chart 1. Attributes of anxiety

• **Negative Items**

Items	Not at all	Somewhat	Moderately	Very much
I feel tense	1	2	3	4
I feel upset	1	2	3	4
I feel worried	1	2	3	4

• **Positive Items**

Items	Not at all	Somewhat	Moderately	Very much
I feel calm	4	3	2	1
I feel relaxed	4	3	2	1
I feel content	4	3	2	1

2.1 Statistical Analysis

Analysis of data was done by using descriptive and inferential statistics both. Descriptive statistics was used to describe the basic feature of the data in a study and the inferential statistics was used to make inference from our data to more general conditions. The percentage wise distribution of the parents of an hospitalized child about their demographic characteristics was calculated. The statistical tests used for the analysis were Students unpaired t-test, one-way ANOVA, Pearson' correlation coefficient, and reliability analysis.

A suitable sample was drawn from the study population of 100 subjects who stayed in Wardha district. The data was collected to classify sample characteristics including relation with hospitalized child, age of parents in years, education, occupation, family type, socioeconomic status, number of children, type of hospitalization, order of an hospitalized child and age of hospitalized child.

3. RESULTS

Above table shown that the demographic data of the samples among the parents, 51 % (51) were

mother. 44 (44%) were mother and 49 (49%) subjects belongs to the age group of (25 – 30 yr), 52 (52%) belongs to age group of (30 – 40 yr) while 4 % of subjects belongs to the age group of more than 40 yrs. Most of the subjects, 52 (52%) had illiterate, 52 (52%) of subjects had primary education, 13 (13%) of subject had secondary education while 0 (0%) of subject had graduate. Most of the subjects, 59 (59%) were unemployed, 41(41%) of subject were employed, most of the subjects belongs from joint family and 53 (53%) belongs to nuclear family. Most of the subjects, 48 (48%) were having socioeconomic status in between Rs. 6000 – 10000, 41 (41%) of subjects were socioeconomic status were below rs. 6000. Most of the subjects, 53 (53%) has two children, where, 38(38%) of subjects has only one child while 9(9%) of subject has 3 children while 0 (0%) of parents has number of children not more than 3. Most of subjects 43 (43%) had an hospitalized child of 2nd order. 50 (50%) of subjects had an hospitalized child of age in between 2 to 3 year while, 41% (41) of subjects had an hospitalized child of age in between 1 – 2 year, while 9 (9%) of subjects had an hospitalized child of an age in between 3 to 4 year, while 0 % of parents had not an child of age more than 5 yrs.

Table 1. Percentage wise distribution of parents according to their demographic characteristics

Demographic Variables	No. of parents	Percentage (%)
Kind of relation		
Mother	51	51
Father	49	49
Age(yrs) of parents		
25-30 yrs	44	44
30-40 yrs	52	52
>40 yrs	4	4
Education of parents		
Illiterate	52	52
Primary	35	35
Secondary	13	13
Graduate/PG	0	0
Occupation		
Employed	41	41
Unemployed	59	59

Demographic Variables	No. of parents	Percentage (%)
Type of family		
Joint	47	47
Nuclear	53	53
Monthly family income (Rs)		
<6000 Rs	41	41
6000-10000 Rs	48	48
10001-15000 Rs	11	11
>15000 Rs	0	0
No of children		
One	38	38
Two	53	53
Three	9	9
More than three	0	0
Type of hospitalization of child		
Admitted first time	56	56
Admitted regularly	44	44
Order of hospitalized child		
First	43	43
Second	42	42
Third	15	15
Fourth	0	0
Age(yrs) of hospitalized child		
1-2 yrs	41	41
2-3 yrs	50	50
3-4 yrs	9	9
4-5 yrs	0	0

Table 2. Assessment of level of anxiety of parents regarding invasive procedures among hospitalized children

Level of anxiety score	Score Range	Level of Anxiety Score	
		No of parents	Percentage
No Anxiety	0-25%	0	0
Mild	26-50%	15	15
Moderate	51-75%	80	80
Severe	76-100%	5	5
Minimum score		87	
Maximum score		125	
Mean anxiety score		109.48 ± 8.08	
Mean % anxiety Score		68.42 ± 5.05	

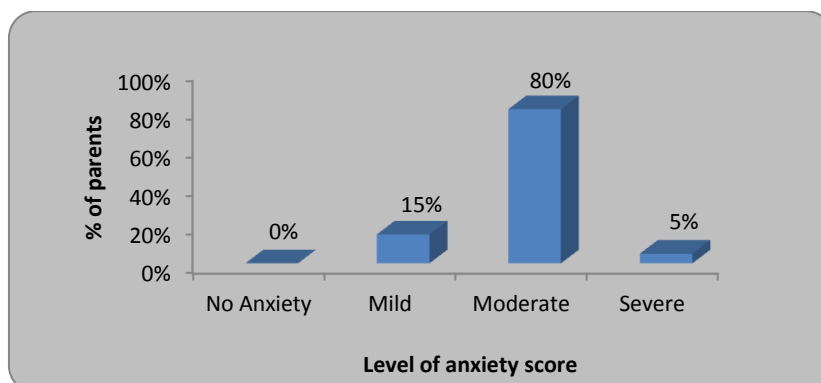


Fig. 1. Assessment of Level of Anxiety of Parents Regarding Invasive Procedures Among Hospitalized Children

Table 3. Comparison of level of anxiety of mother and father regarding invasive procedures among hospitalized children

Parents	Mean	SD	Mean Difference	t-value	p-value
Mother	114.01	5.64	9.26±1.32	6.96	0.0001,S
Father	104.75	7.55			

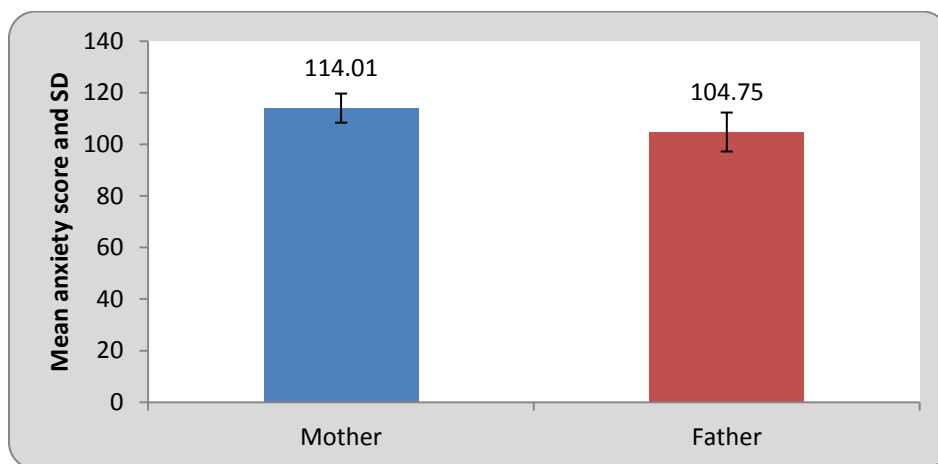


Fig. 2. Significance of difference between anxiety score Among mother and father

The above table shows that 15 % of parents had mild, 80% of the parents had moderate level of anxiety score and 5% of them had severe level of anxiety score. Minimum anxiety score was 87 and maximum anxiety score was 125. Mean anxiety score was 109.48 ± 8.08 and mean percentage of anxiety score was 68.42 ± 5.05 .

This table shows the comparison of anxiety score among mothers and fathers. Mean, standard deviation and mean difference values are compared and student's unpaired 't' test is applied at 5% level of significance. The tabulated value for $n=100-2$ i.e.98 degrees of freedom was 1.98. The calculated 't' value i.e. 6.96 are much higher than the tabulated value at 5% level of significance for overall anxiety score of parents which is statistically acceptable level of significance. Hence it is statistically difference between anxiety score among mothers and fathers was effective.

4. DISCUSSION

In present study there is the association found of knowledge scores with selected demographic variables is simple graphics analysis, they form the basis of virtually every quantitative analysis of data. To find the association of knowledge scores with selected demographic variables like age, education, place of stay, order of an children, age of children, socioeconomic

background and frequency of hospitalization, the following research hypothesis is formulated. There will be a significant association between levels of anxiety of parents regarding invasive procedure in their hospitalized who are undergoing to selected invasive procedure at .05 level of significant.

In the present study the association found in association of anxiety score regarding invasive Procedure among parents in relation to kind of relation with hospitalized children. As well as the association is found in anxiety score regarding invasive procedures among parents in relation to number of children. The retrospective similar study was done in dec. 2003, in a medical centre during (October 2009 to December 2010). the goal of these Study is to determine parental attitude about LP in their children. There was an statistically significant difference between proportion of satisfied parents and non satisfied ones And the significant difference between proportion of satisfied parents and non satisfied ones And the finally study concluded that improvement of parents information ab out LP process and its benefits by health care group, may influence on their belief and cooperation during diagnostic tests [5].

Another one similar study was conducted in AIIMS Bhuvneshwar, in October 2019. The aim of an study was to determine the anxiety

perceived by parents of children undergoing intravenous cannulation and the influence of parental anxiety on the intensity of pain experienced, and to explore the association between selected variables and anxiety perceived by parents. Result was obtained as, mild anxiety was experienced by 6 % of parents while 52% had moderate to extreme anxiety. More than one third of children 35%, reported moderate pain and 31% (n= 15) reported severe pain. A positive correlation was found between pain and parental anxiety and between parental and age and birth order. The study concluded that parental anxiety influences the perception of pain in children [6].

In present study, No anxiety had been seen in parents having score range (0 - 25%) , mild anxiety is assessed in 15 parents having anxiety score (26 – 50 %) while in 80 parents an moderate anxiety is assessed having score range in between (51 – 75%) and severe anxiety was assessed in 5 parents of an hospitalized child who were undergoing selected invasive procedures and having anxiety score in between (76 – 100%),So it concludes that, 15 % of parents had mild, 80% of parents had moderate level of anxiety and 5 % of them had severe level of anxiety score, Statistical comparison of level of anxiety of mother and father regarding invasive procedure among hospitalized child shown significant difference in anxiety score among mother and father. So it concluded that, anxiety score among mother is significant higher than father of an hospitalized child. Similarly, The retrospective similar study was done in dec. 2003, in a medical centre during (October 2009 to December 2010), 157 children under the age of 18 months, were hospitalized due to febrile seizure for first time, lumbar puncture in 40 % of cases (63) patients were performed meningitis/ encephalitis has been detected in eight children: the goal of these Study is to determine parental attitude about LP in their children. Result was found as 61 parents mentioned fear of some side effects as the main reason of their children LP discontent. The most important cause of fear was low back pain according to 50 parents view. 70 patents had some satisfaction after performing LP. There was an statistically significant difference between proportion of satisfied parents and non satisfied ones And the finally study concluded that improvement of parents information about LP process and its benefits by health care group, may influence on their belief and cooperation during diagnostic tests [5].

Another similar study was done in year 2018, regarding level of anxiety in parents in the 24 hr before and after their child's surgery : the aim an objectives of an study was to investigate pre and post operative anxiety level in the parents of surgical patients. Result were found that, the preoperative level of anxiety in parents who were reviewed was higher than Italian normative data, especially in pediatric cardiac surgery and pediatric urology departments. Mothers has a significantly high level of anxiety than fathers. Communicating possible complications of surgical procedures increased anxiety, while providing information about pre and post surgery nutrition and pain management and providing local anesthetic on childrens decreased parental anxiety [7].

5. CONCLUSION

The following conclusions are drawn on the basis of the findings of the study. Majority of the subjects have moderate anxiety level score regarding invasive procedure in their hospitalized child. There is positive correlation found between anxiety level and parents regarding invasive procedures in their hospitalized child. There is significant association found of anxiety score regarding invasive Procedure among parents in relation to kind of relation with hospitalized children. As well as the association is found in anxiety score regarding invasive procedures among parents in relation to number of children. There is significant no association found between socioeconomic status of an parents, order of an child and frequency of hospitalization.

CONSENT AND ETHICAL APPROVAL

The research is endorsed by Committee on Institutional Ethics of Datta Meghe Institute of Medical Sciences (Deemed to be University). All participants must be request to read and sign informed consent.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Association. 2013; 905–16.

- DOI:10.1001/Jamapsychiatry.2014.655. P MID 24920372
2. Waszczuk, Monika A.; Thalia C. "The Phenotypic and Genetic Structure of Depression and Anxiety Disorder Symptoms in Childhood, Adolescence, and Young Adulthood". JAMA Psychiatry. 2014;71 (8):905–16. DOI:10.1001/jamapsychiatry.2014.655. PM ID 24920372.
 3. Nivard MG, CM, Boomsma DI. "Stability in symptoms of anxiety and depression as a function of genotype and environment: a longitudinal twin study from ages 3 to 63 years". Psychological Medicine. 2014;45 (5): 1039–1049. DOI:10.1017/S003329171400213X. PMID 25187475.
 4. Tokunaga, K; Tanii, H; Smoller V. "Candidate genes in panic disorder: meta-analyses of 23 common variants in major anxiogenic pathways". Molecular Psychiatry. 2015;21(5):665–679. DOI:10.1038/mp.2015.138. PMID 2639083 1. S2CID 3394824.
 5. Baldwin J, Cox J (September). "Treating Dyspnea: Is Oxygen Therapy the Best Option for All Patients?". The Medical Clinics of North America. 2016;100 (5): 1123–30. DOI:10.1016/j.mcna.2016.04.018. PMID 2 7542431.
 6. Deckert, Jurgen; Reif, Andreas. "Glr1b Allelic Variation Associated with Agoraphobic Cognitions, Increased Startle Response and Fear Network Activation". European Neuropsychopharmacology. 2017;27(10):1 431–1439. DOI:10.1016/j.euroneuro.2016.09.607. PM ID 28167838. S2CID 54353612.
 7. Härter V, Trah J. Effects of Educational Video on Pre-operative Anxiety in Children-A Randomized Controlled Trial. Frontiers in pediatrics. 2021;9.
 8. Eley, Thalia C.; Neiderhiser, Jenae M. "The Intergenerational Transmission of Anxiety: A Children-of-Twins Study". American Journal of Psychiatry. 2015;172 (7):630–637. DOI:10.1176/appi.ajp.2015.14070818. PMI D 25906669.
 9. Purves, Kirstin L, Manuel; Breen, Gerome; Eley, Thalia C. "A major role for common genetic variation in anxiety disorders". Molecular Psychiatry; 2019. DOI:10.1038/s41380-019-0559- 1. PMC 7237282. PMID 31748690.
 10. Martin,; Penninx, Brenda. "Meta-Analysis of Genome-Wide Association Studies of Anxiety Disorders". European Neuropsychopharmacology. 2017;27(10): 1391–1399. DOI:10.1016/j.euroneuro.2016.09.604. PM C 4940340. PMID 26754954.

© 2021 Thawkar and Maurya; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/73797>