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Original Research Article

Parental stress: a neglected entity

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ABSTRACT

Background: Parents feel very stressed when their child is sick and in Intensive care unit. Objectives of study were to identify common parental stressors during their child's critical illness and to examine its relationship with demographic variables.
Methods: It's a Cross-sectional questionnaire based study done in PICU & NICU of a tertiary care medical college hospital in Mumbai, 62 parents of children admitted to PICU and NICU for at least 24 hours were interviewed using the Parental Stress Scale. The demographic variables were also recorded.
The data analyzed using Cluster Analysis, Kruskal Wallis test, Chi- square test and spearman correlation.
Results: The main cause of parental stress was to witness the child's sufferings (unresponsiveness/pain, procedures, tubes, monitors around child) (median of standardized score = 3.9, IQR = 0.5, p <0.005). The median of standardised stress score due to hospital environmental factors (monitor alarms, nurses, doctors around baby, other sick children) was 3.7 (IQR = 0.5) and that due to lack of intimacy with child was 3.6 (IQR =0.4). Age of parent inversely correlated with the level of stress (r = -0.638) and parents of infants were more stressed (p = 0.005). Number of children, socioeconomic status didn't affect the stress levels.
Conclusions: Young parents and parents of infants were more stressful. Socioeconomic status, residential area and parental sex didn't affect stress. Few stress factors need remedial steps to meet parental needs. The clinician's awareness about these stressors, may help to provide optimized family-directed care.

Keywords: Coping skills, Critically ill children, Family care, Sociodemographic factors

INTRODUCTION

All parents are susceptible to emotional distress. They feel very stressed when their child is sick and in Intensive care unit.[1-4] One of the greatest stressors for parents in the Paediatric Intensive Care Unit (PICU) is the alteration or loss of the parental role, including physical separation, limited opportunities to care for the child, and no longer being the independent, primary decision maker in charge of the child's care.[5] Parents are required to make the transition from parents of a well-child to parents of an acutely ill child. This can be an extremely difficult process. In the past two decades, there were many studies on parental stress which brought out various stressors like not knowing how to help their child, seeing their child frightened or in pain, and not being able to be with their crying child.[3,6,7]

The clinicians must be aware of the parents' expectations, experiences and satisfaction. Not until then can they optimize family-directed care, meet the needs and increase satisfaction with care.[8,9]

Most of the studies done about parental stress in PICU are from resource replete countries.[4,10] Since the family preferences and clinician's delivery of care are affected

by regional, religious and cultural influences, the data from India is different. There are only a few studies of this kind done in India.[5,11]

Hence this study will help to determine the clinical and sociodemographic factors leading to stress among parents of children admitted in intensive care unit of a tertiary care hospital in Mumbai. Identification of few of such modifiable stress factors, will be of great help to improve family directed care.[12-15]

Objectives of the study

- To identify common parental stressors during their child's critical illness
- To examine its relationship with demographic variables.

METHODS

The study was carried out during 4 months from September 2018 to December 2018.

Sampling technique

Universal sampling, parents of consecutive patients (meeting inclusion criteria) admitted in Neonatal Intensive Care unit (NICU) and PICU during study duration were included.

Age group of parents were 18 yrs to 45 yrs.

It was a Cross-sectional questionnaire based study done in PICU and NICU of a tertiary care medical college hospital in Mumbai. 62 parents of children admitted to PICU and NICU for at least 24 hours were interviewed using the Parental Stress Scale. The demographic variables were also recorded.

Statistical analysis

The data was analyzed using Cluster Analysis, Kruskal Wallis test, Chi- square test and spearman correlation.

A cluster analysis was also performed on data collected to study underlying pattern of stressful experiences in parents of a sick child.

Inclusion criteria

Parents whose children had been admitted to ICU for at least 24 hours as medical emergency cases.

Exclusion criteria

- parents of child getting readmitted to ICU in the study period
- unavailability of parental consent
- Parents with pre- existing psychiatric illness/ other chronic medical illness

Institutional Ethics Committee (IEC) permission was taken.

After taking parental consent, the demographic and clinical characteristics of critically sick children admitted in Intensive Care Unit was recorded. Socio economic status calculated according to revised Kuppuswamy scale.[16]

For the assessment of parental stress we have used the parental stress score (PSS) developed by Carter and Miles.[17] The PSS scale covers three broad areas: personal-family, situational and environmental stressors.

The parents were interviewed using the Parental Stress Scale (PSS), which rates 22 factors on a scale from 1 (not stressful) to 5 (extremely stressful).

Annexure I

- *Category A*: Personal-Family (8 factors) Lack of Intimacy with child
- *Category B*: Situational (8 factors) Witnessing Child's distress
- *Category C*: Environmental (6 factors) Watching Child in Hospital Environment

Cluster analysis

A cluster analysis was performed to study underlying pattern of stressful experiences in parents of a sick child.

The Hierarchal clustering method was used with construction of a dendrogram, to categorize cases in two groups based on scores in the following categories:

- Lack of Intimacy with child
- Witnessing Child's distress
- Watching Child in hospital environment.

Segmentation

The k-means clustering technique was used to categorize these cases into the two groups.

RESULTS

A total of 62 parents were interviewed with 33 mothers and 29 fathers. The age of the parents varied from 18 to 45 years; younger one was 18year & oldest parent was 44year old. Socio economic status was low in majority of enrolled 28 (45 %).

Demographic details of the parents has been shown in Table 1.

Depending upon the responses from the parents during interview, Parental Stress Score was calculated in all three categories using PSS (Table 2).

The main cause of parental stress was to witness the child's sufferings (median of standardized score = 3.9, IQR = 0.5, p <0.005).

Table 1: Sociodemographic details of parents.

Factor		Number	Percentage	Statistical parameters			
				Mean	Median	Standard deviation	Interquartile range
Age of parents (years)	<20	4	6.45	27.7yrs	27yrs	0.7	8
	20-30	41	30.64				
	30-40	15	35.48				
	40-45	2	3.22				
Gender of parents	Male	29	46.77				
	Female	33	53.22				
Number of children	1	29	46.77	1.8	2	0.1	1
	2	22	35.48				
	3	8	12.90				
	4	2	3.22				
	5	1	1.61				
Socio-economic status	Lower	28	45				
	Lower middle	21	33.87				
	Upper middle	13	20.96				
Age of patient (years)	1 Month	12	19.35	2.2 yrs	0.6 yrs	0.4	3.9
	1-12 months	23	37				
	1-5 yrs	20	32.3				
	5-12yrs	7	11.3				
Gender of the child	Male	34					
	Female	28					

Table 2: PSS across the major categories.

Descriptive	Category A: Lack of intimacy with child	Category B: Witnessing child's distress	Category C: Watching Child in hospital environment	Total score
Median	29	31.5	22	82
IQR	3	4	3	7
Number of components	8	8	6	22
Standardised median	3.6	3.9 *	3.7	
Standardised IQR	0.4	0.5	0.5	
p value (Kruskal Wallis test)	<0.005			

*Highest parental stress level observed due to witnessing child's distress.

Table 3: Correlation between demographic variables and major PSS categories.

Variable		Category A Score	Category B Score	Category C Score	Total Score
Child Age	Correlation Coefficient	-0.229	-0.416*	-0.331*	-0.419#
	Sig. (2-tailed)	0.074	0.001	0.009	0.001
Parent Age	Correlation Coefficient	-0.409*	-0.441*	-0.586*	-0.638*
	Sig. (2-tailed)	0.001	<0.0005	<0.0005	<0.0005
No. of Children	Correlation Coefficient	-0.335*	-0.305*	-0.415*	-0.416$
	Sig. (2-tailed)	0.008	0.016	0.001	0.001

*There was moderately inverse correlation of parental age with total stress score.
#$ Child's age and number of children showed mild inverse correlation with total stress score

Table 4: Cluster analysis.

ANOVA test						
Category	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square			
A	226.6	1	4.7	60	48.2	0.000
B	63.6	1	6.5	60	9.8	0.003
C	156.8	1	3.3	60	47.0	0.000
Categories for segmentation						
PSS Categories	A: Lack of intimacy		B: Witnessing distress	C: Hospital environment		Total score
Cluster 1 (N = 21)	26(3) *		31(3) $	20(3) #		76(4)
Cluster 2 (N = 41)	30(3) *		32(3) $	23(2) #		83(6)

*,# The clusters differed mainly in Lack of intimacy and Watching the child in hospital environment.
$ All parents were stressed to witness the child's distress and that shows even in this clustering that the clusters showed lower difference in level of stress due to this category.

The median of standardized stress score due to hospital environmental factors (monitor alarms, nurses, doctors around baby, other sick children) was 3.7 (IQR = 0.5) and that due to lack of intimacy with child was 3.6 (IQR =0.4). Age of parent inversely correlated with the level of stress (r = -0.638) and parents of infants were more stressed (p = 0.005) (Table 3). Socioeconomic status did not affect the stress levels.

In Cluster Analysis cases were categorized in two groups

The Hierarchal clustering method was used with construction of a dendrogram which showed two clusters of parents based on their scores in different questionnaire categories

ANOVA test showed significant difference between the clusters based on all three categories i.e. Higher scores were observed for cluster 2 (Table 4). Higher F ratios were observed for Category A and C (Table 4).

Hence, we can undertake segmentation of parents based on the categories A and C. Hence, these two areas may be studied further to find means to reduce the amount of parental stress.

DISCUSSION

Parents feel very stressed when their child is sick and in Intensive care unit. All parents are susceptible to emotional distress. It gets more exaggerated due to uncertain outcome, painful procedures and Intensive care Unit environment having equipments, monitors, and tubing's around the child.

There are numerous studies from developed countries, which have emphasized the role of addressing parental stress and concerns in PICU in addition to routine care of patients. [3,4,6,7 ,14,18-21]

In India the studies on Parental stress from Mangalore by Kumar BS et al, and from Ludhiana, by Pooni et al, they found that there is significant stress among parents of children admitted in PICU.[5,11]

In the present study it is observed that the main cause of parental stress was to witness the child's sufferings i.e. unresponsiveness/pain, procedures, tubes and monitors around child.

Stress score due to hospital environmental factors i.e. monitor alarms, nurses, doctors around baby, other sick children was statically significant in our study, but stress was less than that due to witnessing the child's sufferings.

Factors relating to lack of intimacy with child i.e. not being able to regularly care, not being able to share baby with family and friends and not being able to protect baby from pain and painful procedures did contribute statically significantly to parental stress in our study. But stress was less compared to that due to child's sufferings and due to hospital environmental factors.

In a study on Parental stress from Mangalore, India by Kumar BS et al, all three categories resulted in extreme parental stress.

Parents of infants were more stressed in our study. Similar observations were found in the study at Punjab by Pooni et al, and study at Mangalore by Kumar BS et al.

We also noted age of parent inversely correlated with the level of stress resulting higher stress in younger parents. Similar observations were found by Pooni et al.

Number of children had mild inverse correlation with Parental stress.

Socioeconomic status did not contribute to overall parental stress. Parents from upper middle, lower middle and lower socioeconomic status were almost equally stressed. Though we did not have any parents belonging to upper Socioeconomic class. The study by Kumar BS et al revealed equal stress levels in the parents of all Socioeconomic classes.

CONCLUSION

There is significant stress among parents of children admitted to PICU. Segmentation of parents in category A and C may be studied further to find means to reduce the amount of parental stress. Provision of counsellors for parent counselling may help improving parental health and coping skills.

The limitations of this study include lack of follow up, authors did not analyze parents of those who got readmitted and those who expired within 24 hrs of admission during PICU/NICU stay.

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ANNEXURE 1

Questions in Parental Stress Scale

Category A: Personal-Family Lack of Intimacy with child

How stressful are the following experiences?

1. Being separated from your baby

2. Not being able to regularly care for your baby

3. Not having a chance to be alone with your baby

4. Not being able to share your baby with family and friends

5. Not being able to protect your baby from pain and painful procedures

6. Not being able to comfort/help your baby

7. The nurses and other staff seeming closer to the baby than you are

8. Not being able to hold your baby

Category B: Situational -Witnessing Child's distress

How stressed are you by the way your baby looks to you?

1. Seeing your baby with tubes or IV lines on him/her

2. Seeing your child in pain

3. Having your child look afraid, be upset or cry a lot

4. Seeing your baby look sad

5. Seeing a needle or tube put in your baby

6. Seeing your baby have problems breathing

7. Seeing your baby surrounded by machinery and having medical treatments

8. When your baby cannot respond to you

Category C: Environmental- Watching Child in Hospital Environment

How stressful are the things you might see or hear?

1. Monitors and equipment in the room

2. The sudden sound of monitor alarms

3. The other sick children in the room

4. Large number of nurses, doctors and other staff who work with your child staff who work with your child

5. When other children in the hospital have a crisis?

6. The needs of other parents in the hospital