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## Factors associated with stress among mothers of hospitalized children admitted through emergency department

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### Abstract

**Introductions:** Hospitalization of a child is stressful for mothers, affects child care and has long-term negative effects on both mother and child. This study aims in identify stress level and associated factors on mothers of a hospitalized child admitted through emergency department.

**Methods:** A cross sectional analytical study was conducted in mothers of children admitted in pediatric ward through emergency department of Patan Hospital, Patan Academy of Health Sciences, Nepal, from April 2018 to February 2019. Purposive sampling was used to interview mothers using validated Nepali version Dass 21 to find out the stress level and related factors (child, hospital environment, economic burden and hospital staffs). The SPSS was used for data analysis.

**Results:** Among 90 mothers, 42 (46.7%) showed extremely severe stress and 19 (21.1%) in severe stress. Uncertainty of future of child's illness 72 (80%), facilities of hygienic drinking water 66 (73.3%) in hospital, cost of treatment 47 (52.2%), and inadequate explanation by nursing staffs about procedures 39 (40%) were related factors of stress. Mothers stress significantly and positively correlated with child related factor ( $r=0.562$ ) and economic burden ( $r=0.253$ ).

**Conclusions:** Mothers of hospitalized children were stressed with child related factors of uncertainty of illness and economic burden of cost of treatment.

**Keywords:** emergency department, factors, hospitalized children, mothers, stress

## Introductions

Parental stress during a child's hospitalization affects involvement in a child's care causing negative long-term adjustment problems. Stress among parents are often associated with lack of information, uncertainty, unfriendly staff.<sup>1</sup>

Study shows parents in Greece had mild to moderate level of stress on child's hospitalization.<sup>2</sup> In India, 70% had moderate and 30% had severe level of stress.<sup>3</sup> In Nepal 47.1% and 34.3% of parents had moderate and severe level of stress respectively.<sup>4</sup>

Department of health Service Nepal shows 16.8% of patients receiving emergency services were admitted in hospital.<sup>5</sup> In the same year, out of 41,700 emergency patients, 15% were pediatric admissions in Patan Hospital.<sup>6</sup>

Studies on potentially modifiable factors causing stress which influences stress in mothers in general pediatric wards is scarce. Aim of this study was to assess the stress level and associated factors among mothers of hospitalized children admitted through emergency department.

## Methods

A cross-sectional study was conducted from Aug 2018 to Sep 2018 in the pediatric ward of Patan Hospital, Lalitpur, Nepal. Purposive sampling was done. Sample size was calculated using Cochran's formula on the prevalence of stress level of 47.1%.<sup>4</sup> After using correction formula the final sample size was calculated to be 90. Mothers who were not willing to participate in the study, whose children were admitted through Out Patient Department (OPD) or transferred from other wards, and admitted for less than 24 hours or more than 3 days were excluded from the study. This exclusion was based on literatures showing less than 24 hours or more than 3 days in PICU, NICU or critical care already have high stress

level. Ethical approval was obtained from the Institutional Review Committee (IRC) of PAHS.

Data collection instrument consisted 3-parts: Part A- Identification of stress level of respondents using stress subscale of DASS 21<sup>7</sup> (depression, anxiety, stress) tool. The level of stress was categorized on the score, Normal = 0-14, Mild = 15-18, Moderate = 19 -25, Severe = 26 - 33, Extremely Severe = 34+.

Part B- and part C- questions related to factors of stress among mothers which was retrieved from a study on 'Effects of stress on mothers of hospitalized children in a hospital in Iran'.<sup>8</sup> Factors of stress were categorized on Likert scale 1-5 (1 = normal no stress, 2 = low level, 3 = average, 4 = high, 5 = very high).

Nepali version of DASS 21 is validated, with internal consistency of 0.82 for DASS-S (stress subscale).<sup>7</sup> On pre-testing the tool Cronbach's alpha was 0.80. On Questionnaire regarding factors associated with stress Cronbach alpha was >0.8 on each domain.<sup>8</sup> On pretesting, after modification and removal of items, the child related factor alpha was 0.80, hospital environment 0.77, hospital staffs 0.84, and economic burden related factor 0.77.

Objective of the study was briefed to the mothers prior to the interview and written consent was taken. Privacy was maintained by taking into the separate room available at corner of the ward with permission of ward in-charge and each day 3-5 respondents were interviewed, 20-30 minutes each.

Collected data were entered, coded and analyzed (descriptive and inferential statistics) using SPSS 16.

## Results

Out of total 90 mothers interviewed, 42 (46.7%) had extremely severe stress and 19 (21.1 %) severe stress, Table 1. In factor analysis categorized on 5-point Likert scale, there were no respondents on no stress and so it was merged with 'low level', and also there

was not much difference on high and very high level on analysis, so it was merged as 'high level', the final category being low, average, high, Table 2-4. Child related factors were uncertainty of medical condition in 72 (80%), irritability 69 (76.7%) and pain 66 (73.3%), Table 2. Economic factor was cost of treatment in 47 (52.2%), failure to provide time to other children/family and being away from work and living place 45 (50%), Table 2. Hospital environment factors of stress due to doubts on

facilities and hygienic drinking water in 66 (73.3%), unavailability of entertainment facilities for children 64 (71.1%), Table 3. Hospital staffs related factors of low level of stress due to responsibility for monitoring IV fluids and oral medications was seen in 48 (53.3%). Similarly, 44 (48.9%) mothers had low level of stress due to inadequate communication of doctors/nurses with child on rounds and procedures, Table 4.

**Table 1. Level of stress among mothers of hospitalized children admitted through emergency department, n=90**

Level of Stress	N	%	Mean $\pm$ SD	Median
Normal	10	11.1		
Mild	10	11.1		
Moderate	9	10.0	29.2 $\pm$ 10.2	32.0
Severe	19	21.1		
Extremely severe	42	46.7		

**Table 2. Child and economic related factors of stress among mothers of hospitalized children admitted through emergency department, n=90**

	Low*		Average*		High*	
	n	%	N	%	N	%
<b>Child related factors</b>						
Fear of Prolongation of hospitalization	18	20	16	17.8	56	62.3
Child's pain	9	10	15	16.7	66	73.3
Uncertainty of child's future medical condition	9	10	9	10	72	80
Irritability of child	10	11.1	11	12.2	69	76.7
Concern about IV fluid and different tubes on child	20	22.2	14	15.6	56	62.3
<b>Economic burden related factors</b>						
Failure to provide time to other children/ family	34	37.8	11	12.2	45	50
cost of treatment	29	32.2	14	15.6	47	52.2
Being away from work and living place	34	37.8	11	12.2	45	50

\*Originally the factors of stress were categorized on Likert scale 1-5 (1 = normal no stress, 2 = low level, 3 = average, 4 = high, 5 = very high). Since there were no respondents on no stress it was merged with 'low level', and also there was not much difference on high and very high level on analysis, so it was merged as 'high level', finally three categories low, average, high.

**Table 3. Hospital environment related factors of stress among mothers of hospitalized children admitted through emergency department, n=90**

	Low		Average		High	
	n	%	N	%	N	%
Noise pollution	19	21.1	28	31.1	43	47.8
Crowded room with many children	25	27.8	27	30	38	42.2
Uncomfortable beds	36	40	19	21.1	35	38.9
Unpleasant odour	23	25.6	23	25.6	44	48.4
Unfamiliar environment	67	74.4	9	10	14	15.5
Sanitation of ward	26	28.9	25	27.8	39	43.3
Unavailability of entertainment facilities for children	12	13.3	14	15.6	64	71.1
Facilities for hygienic drinking water	13	14.4	11	12.2	66	73.3
Unavailability of blankets and linens	21	23.3	16	17.8	53	58.9

**Table 4. Hospital staffs related factors of stress among mothers of hospitalized children admitted through emergency department, n=90**

	Low N %	Average N %	High N %
Explanation about the illness from doctors /nurses	31 (34.4)	31 (34.4)	28 (31.1)
Large numbers of doctors /nurses around the child (on round and procedures)	37 (41.1)	29 (32.2)	24 (26.7)
Explanation by nursing staff about procedures (e.g. finding veins)	35 (38.9)	19 (21.1)	39 (40)
Giving the responsibility for monitoring Serum IV fluids and oral medications	48 (53.3)	12 (13.3)	30 (33.4)
Communication of doctors /nurses with child on rounds and procedures	44 (48.9)	19 (21.1)	27 (30)
Attitude and concerns of doctors/nurses about problems verbalized by mothers	36 (40.0)	23 (25.6)	31 (34.5)

**Table 5. Spearman's Correlation between stress and factors related to stress among mothers of hospitalized children admitted through emergency department, n=90**

	Stress	Child related factor	Environmental Factor	Hospital staff related factor	Economic factor
Stress	1.00	0.56**	0.05	0.16	0.25*
Child related factor	0.56**	1.00	0.15	0.19	0.18
Environmental factor	0.05	0.15	1.00	0.41**	0.07
Hospital staff related factor	0.16	0.19	0.41**	1.00	0.04
Economic burden	0.25*	0.18	0.07	0.04	1.00

\*Correlation is significant at the 0.05 level (2-tailed), \*\*Correlation is significant at the 0.01 level (2-tailed).

Stress was significantly and positively correlated with child related factor ( $r=0.562$ ) and economic factor ( $r=0.253$ ), and not with environmental and hospital staff related factor, Table 5.

## Discussions

In present study, 46.7% of mother of hospitalized children admitted through emergency were in extremely severe level of stress, and 21.1% were in severe. Contradictory to these findings, a study conducted in Kanti Children Hospital, Nepal, revealed that almost half of the respondents (47.1%) had moderate level of stress followed by 34.3% with severe stress and 18.6% respondents with mild stress during hospitalization of their child. This difference could be due to expectations of mothers regarding care provided to the patient, lack of recreational facilities for children and sanitation and infrastructures factors.

In present study only 41.1% of mothers had least stress with presence of too many health

professional around baby; whereas, study from India shows 85% of mothers were stressed.<sup>3</sup> This difference could be because mothers in present study believed that more the health professionals visit the child more they are concerned towards the health of the child. In the Indian study, majority of mothers feared for their child's recovery (85%) and felt the guilt over the condition of the baby (65%).<sup>3</sup> Consistent with these findings, the present study shows majority of mothers were in stress for uncertainty about future of the child's medical condition (80%), irritability (76.7%) and pain (73.3%).

A study conducted in Iran showed that in child related stressors, 'fear for death' was major concern (84%). This was not seen in present study. Mothers had least level of concern about tubes connected to the child, Both, in 17.3% in Iranian and 22.2% in present study.

In present study finding in hospital staff related stressors 40% were concerned with inadequate explanation about medical procedures such as inserting IV lines, similar to other reported study.<sup>8</sup>

The study was limited to mothers whose children were admitted through emergency department and purposive sampling was used, which may not be a representative for generalizability. Also, the age and diagnosis of children was not included in the analysis in present study.

### Conclusions

Nearly half of the mothers of children admitted through emergency department were found in extremely severe level of stress, followed by one-fifth in severe stress. There was moderate positive correlation between child related factors and stress among mothers whereas, there was weak positive correlation between economic burden related factors and stress.

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### Conflicts of Interests

None

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