



# Prevalence and Its Associated Factors of Maternal Stress among Mothers of Hospitalized Children Admitted to a Tertiary Health Care Center of Central Nepal

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## ABSTRACT

### Background

Stress is a universal phenomenon and all person experiences it. Experience of having a child hospitalized can be profoundly stressful for mothers, impacting their mental and emotional well-being. This research aimed to find the prevalence and factors associated of stress among mothers of hospitalized children.

### Methods

Analytical cross-sectional research was conducted among 131. Filled up questionnaires were checked for accuracy and completeness and coded, entered into computer system and analyzed using SPSS (version 18.0). Chi-square test was used to find out association between the variables.

### Results

Result showed that 80.9% (with 95% CI as 74.16% to 87.63%) mothers had moderate level of stress, while 19.1% (with 95% CI as 12.36% to 25.83%) had mild level of stress. The statistically significant factors associated with maternal stress were education level of mother, type of family, number of children and getting help from others to pay treatment cost.

### Conclusions

This research showed that significant proportion of mothers experience moderate levels of stress, with key contributing factors including lower education levels, nuclear family structures, a higher number of children, and lack of external financial support for treatment costs. These factors play a crucial role in determining the intensity of maternal stress, suggesting that targeted interventions to improve education, provide financial assistance, and strengthen family support systems could effectively reduce stress and improve the well-being of mothers.

**Keywords:** stress; factors associated with stress; mothers of hospitalized children.

## INTRODUCTION

According to Hans Selye, stress is “the non-specific response of the body to any demand for change”. It influenced by environmental, psychological, and social factors but uniquely perceived by the person and intensified in response when environmental changes or threat occurs internally or externally.<sup>1-3</sup> Hospitalization is always associated with tension, worry and pressure. It is due to poor resources, education, lack of appropriately provided information

about treatment, hospital protocols and economic issues.<sup>4,5,7-13</sup> The study was conducted in mothers of children admitted in pediatric ward through emergency department of Patan Hospital, Nepal from April 2018 to February 2019 which shows that out of a total of 90 mothers, 42 (46.7%) exhibited an extremely severe and 19 (21.1%) experienced severe stress. Factors contributing to this stress included uncertainty about the future of their child's illness, which affected 72 mothers (80%), the lack

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of access to hygienic drinking water facilities within the hospital, 66 mothers (73.3%) the high cost of treatment, 47 mothers (52.2%) inadequate explanations about medical procedures. The stress levels of the mothers were found to have a significant and positive correlation with factors related to their child's condition ( $r=0.562$ ) and the economic burden they faced ( $r=0.253$ ).<sup>15</sup>

## METHODS

An analytical cross-sectional study was conducted among 131 mothers of under 16 years children who were hospitalized for at least 3 days at College of Medical Sciences and Teaching hospital, Bharatpur, Chitwan. Non probability (convenience) sampling technique were used for data collection. Ethical approval was taken from Institutional Review Committee of College of Medical Sciences and Teaching Hospital (Ref. No COMSTH-IRC/2024-038). Parental stress scale developed by Berry & Jones -1995 were used to measure the level of stress experienced by parents was used to measure the stress. Written informed consent was taken from the mother before data collection. Confidentiality was maintained by not disclosing the information of mother except mention purpose. Collected data was check for completeness and then coded with serial number. Then data was entered in Excel and data was analyzed by using SPSS 18. Data was analyzed by using descriptive and inferential statistical tools. In the descriptive statistics for categorical variable frequency and percentage were used while in the inferential statistics to find the association between dependent variable (maternal stress) with selected sociodemographic variables Chi-square test were used. p-value <0.05 was considered as statistically significant.

## RESULTS

More than half of the mothers (56.5%) were in the age group 21-30 years, 35.1% in 31-40 years. In religion majority of them were (82.4%) hindu. Urban residency prevails among 65.6% of the respondents. In terms of education 40.5% completed secondary education while 25.2% could read and write.

Occupational distribution is led by the housewives at 67.2%. Regarding type of family (51.1%) were from nuclear family while 48.9% were in joint (48.9%) families. Financially, three-fourth (75.6%) of the respondents reported having sufficient monthly family income, while the rest 24.4% had insufficient income for fulfilling their family needs expenses. Lastly, half (49.6%) of the respondents had two children (Table 1).

| Variables                                   | Frequency (%) |
|---|---------------|
| <b>Age in years</b>                         |               |
| < 20  | 2(1.5)        |
| 21-30                                       | 74(56.5)      |
| 31-40                                       | 46(35.1)      |
| 41-50                                       | 9(6.9)        |
| <b>Religion</b>                             |               |
| Hindu                                       | 108(82.4)     |
| Buddhist                                    | 23(17.6)      |
| <b>Residence</b>                            |               |
| Rural                                       | 45(34.4)      |
| Urban                                       | 86(65.6)      |
| <b>Educational status</b>                   |               |
| Can not read and write                      | 12(9.2)       |
| Can read and write                          | 33(25.2)      |
| Basic Level (1-8 class)                     | 16(12.2)      |
| Secondary Level (9-12 class)                | 53(40.5)      |
| Bachelor Level or Above                     | 17(13)        |
| <b>Occupational status</b>                  |               |
| Housewife                                   | 88(67.2)      |
| Farming                                     | 12(9.2)       |
| Teaching                                    | 11(8.4)       |
| Business                                    | 14(10.7)      |
| Tailoring                                   | 6(4.6)        |
| <b>Type of family</b>                       |               |
| Nuclear                                     | 67(51.1)      |
| Joint                                       | 64(48.9)      |
| <b>Sufficiency of monthly family income</b> |               |
| Sufficient                                  | 99(75.6)      |
| Insufficient                                | 32(24.4)      |
| <b>Number of having children</b>            |               |
| 1   | 36(27.5)      |
| 2   | 65(49.6)      |
| > 2   | 30(18.3)      |

Regarding the birth order of hospitalized children 42.0% firstborns while 48.1% second-borns. on age distribution of children, 26.7% aged 1.1-3 years, 22.9% aged 3.1 - 6 years. Most children were male (60.3%).

Common diagnoses include systemic (46.6%), respiratory (26.7%), and gastro/uro conditions (22.9%), with smaller proportions for cardio/hematology (2.3%) and nervous issues (1.5%). Regarding hospitalization duration, 45% stayed one day while 30.5% stayed two days. Most children (78.6%) received combined

intravenous and oral medication. Optimism among mothers is reflected by a 97.7% positive outlook on prognosis. Financially, 72.5% received no external help for treatment costs, while 27.5% did. For similar illnesses, 77.9% reported no other affected children, and 22.1% reported yes. Occupational life was disrupted for 55.7% of respondents, while 44.3% managed to maintain it. Drug unavailability was not a major issue, with 80.9% reporting no problems, and 19.1% reporting issues (Table 2).

A majority (95.4%) expressed happiness in their parenting role, and nearly all (96.9%) reported feeling close to and enjoying time with their child(ren). Most mothers (98.5%) view their children as a significant source of affection, and 91.6% believe parenting offers a more optimistic outlook on the future. Commitment to their children's well-being is evident, with 82.4% strongly agreeing and 17.6% agreeing that they would do anything necessary for their child(ren). Additionally, 84.7% expressed overall satisfaction as parents, though 16.0% admitted feeling overwhelmed by the responsibilities of parenthood (Table 3).

| Variables  | Frequency (%) |
|--|---------------|
| <b>Birth order of hospitalized child</b>                       |               |
| First  | 55(42.0)      |
| Second   | 63(48.1)      |
| Third  | 9(6.9)        |
| Fourth   | 4(3.1)        |
| <b>Age of the hospitalized child (years)</b>                   |               |
| ≤1   | 28(21.4)      |
| 1.1-3  | 35(26.7)      |
| 3.1 - 6  | 30(22.9)      |
| 6.1 -12  | 28(21.4)      |
| 12.1 - 16  | 10(7.6)       |
| <b>Sex of the hospitalized child</b>                           |               |
| Male   | 79(60.3)      |
| Female   | 52(39.7)      |
| <b>Diagnosis of the child</b>                                  |               |
| Systemic   | 61(46.6)      |
| Respiratory  | 35(26.7)      |
| Gastro and Uro   | 30(22.9)      |
| Nervous  | 2(1.5)        |
| Cardio and Haematology   | 3(2.3)        |
| <b>Duration of hospitalization</b>                             |               |
| 1  | 59(45.0)      |
| 2  | 40(30.5)      |
| > 2  | 32(24.5)      |
| <b>Mode of medication</b>                                      |               |
| IV   | 28(21.4)      |
| Both   | 103(78.6)     |
| <b>Opinion about the prognosis of disease</b>                  |               |
| Improving  | 128(97.7)     |
| Deteriorating  | 3(2.3)        |
| <b>Got help from others to pay treatment cost</b>              |               |
| Yes  | 36(27.5)      |
| No   | 95(72.5)      |
| <b>Other children suffering from the same disease</b>          |               |
| Yes  | 29(22.1)      |
| No   | 102(77.9)     |
| <b>Able to maintain occupational life due to the ill child</b> |               |
| Yes  | 58(44.3)      |
| No   | 73(55.7)      |
| <b>Problems of drug unavailability</b>                         |               |
| Yes  | 25(19.1)      |
| No   | 106(80.9)     |

| Positive Statements  | SA          | A          | U | D       | SD |
|--|-------------|------------|---|---------|----|
| I am happy in my role as a parent  | 125 (95.4)  | 6 (4.6)    |   |         |    |
| There is little or nothing I wouldn't do for my children if it was necessary | 108 (82.4)  | 23 (17.6)  |   |         |    |
| I feel close to my children  | 127 (96.9)  | 4 (3.1)    |   |         |    |
| I enjoy spending time with my children                                       | 128 (97.7)  | 3 (2.3)    |   |         |    |
| I find my children enjoyable   | 127 (96.90) | 4 (3.10)   |   |         |    |
| My children is an important source of affection for me                       | 129 (98.5)  | 2 (1.50)   |   |         |    |
| Having a children gives me a more certain and optimistic view of the future  | 120 (91.60) | 10 (7.60)  |   | 1 (0.8) |    |
| I am satisfied as a parent   | 111 (84.70) | 20 (15.30) |   |         |    |
| I feel overwhelmed by the responsibility of being a parent                   | 110 (84.00) | 21 (16.00) |   |         |    |

SA=Strongly agree, A=Agree, U=Uncertain, D=Disagree, SD=Strongly disagree

Table 4 summarizes mothers' responses to negative statements about the challenges and stressors of parenting, particularly in the context of a hospitalized child. Caregiving demands were prominent, with 68.7% agreeing and 16.8% strongly agreeing that it often requires more time and energy than they can provide. Concerns about adequacy were widespread, as 69.5% agreed and 25.2% strongly agreed that they worry about doing enough for their children. Parenting stress is evident, with 60.3% identifying their children as a major source of stress and 49.6% agreeing, alongside 32.8% strongly agreeing, that having children limits time and flexibility. Financial strain was noted by 59.5% who agreed and 14.5% who strongly agreed about its burden. Balancing responsibilities proved difficult for 54.2% of mothers, and the behavior of their children was often a source of embarrassment or stress for an equal proportion. Notably, 65.6% expressed agreement that, given a choice, they might reconsider having children. Lastly, 51.9% struggled with balancing life choices and control, illustrating the multifaceted challenges of parenting a hospitalized child (Table 4).

Following table represent the prevalence of maternal stress among mothers of hospitalized children. Majority (80.9%) (with 95% CI as 74.16% to 87.63%) had moderate level of stress, while 19.1% (with 95% CI as

12.36% to 25.83%) had mild level of stress (Table 5).

**Table 5. Prevalence of maternal of stress among the respondents.**

| Level of Stress | Frequency (%) | 95 % CI |        |
|-----------------|---------------|---------|--------|
|                 |               | Lower   | Upper  |
| Mild            | 25(19.1)      | 12.36%  | 25.83% |
| Moderate        | 106(80.9)     | 74.16%  | 87.63% |
| Severe          | -             |         |        |

Table 6 reveals association of respondent's level of stress with socio-demographic variables. It shows that respondent's level of stress is statistically significant with educational status ( $\chi^2=20.321$ ,  $p < 0.001$ ), type of family ( $\chi^2=4.532$ ,  $p=0.033$ ) and number of having children ( $\chi^2=7.923$ ,  $p=0.019$ ) (Table 6).

It shows that respondent's level of stress is statistically significant with getting help from others to pay treatment cost ( $\chi^2=11.708$ ,  $p=0.001$ ) (Table 7).

**DISCUSSION**

Findings of this study shows that a nearly equal distribution is observed regarding the birth order of the hospitalized children with 42.0% being first-borns, 48.1% second-borns, and 6.9% third-borns. In contrary to this finding, Ayenew et al. (2020)<sup>19</sup> indicated 27.3% none, 5.3% first-borns, and 67% had second or more. The age distribution of hospitalized children in the present study shows a relatively even spread, with 26.7% falling within 1.1-3 years range,

**Table 4. Response on negative statement among mothers of hospitalized children. (n=131)**

| Negative Statements  | SA        | A         | U         | D         | SD        |
|--|-----------|-----------|-----------|-----------|-----------|
| Caring for my children sometimes takes more time and energy than I have to give        | 2(1.5)    | 17(13)    |           | 90(68.70) | 22(16.80) |
| I sometimes worry whether I am doing enough for my children                            |           | 6(4.60)   | 1(0.8)    | 91(69.50) | 33(25.20) |
| The major source of stress in my life is my children                                   | 30(22.90) | 79(60.30) | 4(3.10)   | 18(13.70) |           |
| Having a children leaves little time and flexibility in my life                        | 9(6.90)   | 65(49.60) | 14(10.70) | 43(32.80) |           |
| Having a children has been a financial burden  | 19(14.50) | 78(59.50) | 19(14.50) | 15(11.50) |           |
| It is difficult to balance different responsibilities because of my children           | 2(1.50)   | 54(41.20) |           | 71(54.20) |           |
| The behavior of my children is often embarrassing or stressful to me                   | 49(37.40) | 71(54.20) |           | 9(6.90)   |           |
| If I had it to do over again, I might decide not to have children                      | 12(9.20)  | 86(65.60) |           | 30(22.90) | 1(0.80)   |
| Having a children has meant having too few choices and too little control over my life | 6(4.60)   | 68(51.90) |           | 44(33.60) |           |

SA=Strongly agree, A=Agree, U=Uncertain, D=Disagree, SD=Strongly disagree

| <b>Table 6. Association of respondent's level of stress with socio-demographic variables.</b> |                        |                 |                     |                |
|---|------------------------|-----------------|---------------------|----------------|
| <b>Variables</b>  | <b>Level of stress</b> |                 | <b>Chi-sq Value</b> | <b>p-value</b> |
|   | <b>Mild</b>            | <b>Moderate</b> |                     |                |
| <b>Age in years</b>   |                        |                 |                     |                |
| <20   | 0(0)                   | 2(100)          | 2.786               | 0.426**        |
| 21-30   | 17(17)                 | 57(77)          |                     |                |
| 31-40   | 6(6)                   | 40(86)          |                     |                |
| 41-50   | 2(2)                   | 7(77)           |                     |                |
| <b>Religion</b>   |                        |                 |                     |                |
| Hindu   | 20(20)                 | 88(81)          | 0.127               | 0.771          |
| Buddhist  | 5(5)                   | 18(78)          |                     |                |
| <b>Residence</b>  |                        |                 |                     |                |
| Rural   | 7(7)                   | 38(84)          | 0.553               | 0.457          |
| Urban   | 18(18)                 | 68(79)          |                     |                |
| <b>Educational status</b>   |                        |                 |                     |                |
| Can not read and write  | 2(2)                   | 10(83)          | 20.321              | <0.001**       |
| Can read and write  | 2(2)                   | 31(93)          |                     |                |
| Basic Level (1-8 class)   | 0(0)                   | 16(100)         |                     |                |
| Secondary Level (9-12 class)  | 19(19)                 | 34(64)          |                     |                |
| Bachelor Level or Above   | 2(2)                   | 15(88)          |                     |                |
| <b>Occupational status</b>  |                        |                 |                     |                |
| Housewife   | 22(22)                 | 66(75)          | 9.242               | 0.055**        |
| Farming   | 1(1)                   | 11(91)          |                     |                |
| Teaching  | 0(0)                   | 11(100)         |                     |                |
| Business  | 1(1)                   | 13(92)          |                     |                |
| Tailoring   | 1(1)                   | 5(83)           |                     |                |
| <b>Type of family</b>   |                        |                 |                     |                |
| Nuclear   | 8(8)                   | 59(88)          | 4.532               | 0.033          |
| Joint   | 17(17)                 | 47(73)          |                     |                |
| <b>Sufficiency of monthly family income</b>   |                        |                 |                     |                |
| Sufficient  | 21(21)                 | 78(78)          | 1.189               | 0.276          |
| Insufficient  | 4(4)                   | 28(87)          |                     |                |
| <b>Number of having children</b>  |                        |                 |                     |                |
| 1   | 11(11)                 | 25(69)          | 7.923               | 0.019          |
| 2   | 13(13)                 | 52(80)          |                     |                |
| > 2   | 1(1)                   | 29(96)          |                     |                |

\*\* Likelihood ratio

followed by 22.9% in 3.1-6 years whereas, 21.4% of each had 6.1-12 years and 1 or below year and the rest 7.6% had 12.1-16 years. A more or less similar finding was reported by Shanthakumari (2019)<sup>29</sup> in which, highest percentage (40%) had 5-7 years followed by 8-10 years (30%) whereas, 26% had 2-4 years and the rest 4% had above 10 years age of hospitalized children in their study at Tamil Nadu, India. Majority of the children in this study were male (60.3%) whereas, 39.7% were female. In contrary to

this finding, Shanthakumari (2019)<sup>29</sup> showed 53% of female and 47% of male children. Duration of hospitalization varies within the respondents, with 45.0% staying for 1 day, 30.5% for 2 days, and 24.5% for more than 2 days. In contrary to this finding, Ayenew et al. (2020)<sup>19</sup> indicated that 48.5% of the participants in their study had less than 3 days of hospitalization whereas, 51.5% had 3 or more days. Result of this study further shows that about half (48.9%) of the hospitalized children has previous experience of hospitalization. A contradict finding by

| <b>Table 7. Association of respondent's level of stress with child related factors.</b> |                 |            |                  |         |
|---|-----------------|------------|------------------|---------|
| Variables   | Level of stress |            | Chi-square value | p-value |
|   | Mild            | Moderate   |                  |         |
| <b>Birth order of hospitalized child</b>  |                 |            |                  |         |
| First   | 13(23.63)       | 42(76.36)  | 2.924            | 0.403** |
| Second  | 11(17.46)       | 52(82.54)  |                  |         |
| Third   | 1(11.11)        | 8(88.89)   |                  |         |
| Fourth  | -               | 4(100.00)  |                  |         |
| <b>Age of the hospitalized child</b>  |                 |            |                  |         |
| Below 1 and 1 year  | 5(17.85)        | 23(82.14)  | 5.137            | 0.274   |
| 1.1-3 years   | 7(20)           | 28(80.00)  |                  |         |
| 3.1 - 6 years   | 9(30)           | 21(70.00)  |                  |         |
| 6.1 -12 years   | 4(14.28)        | 24(85.71)  |                  |         |
| 12.1 - 16 years   | -               | 10(100.00) |                  |         |
| <b>Sex of the hospitalized child</b>  |                 |            |                  |         |
| Male  | 17(21.51)       | 62(78.48)  | 0.764            | 0.382   |
| Female  | 8(15.38)        | 44(84.62)  |                  |         |
| <b>Duration of hospitalization</b>  |                 |            |                  |         |
| 1   | 13(22.03)       | 46(77.97)  | 2.588            | 0.274   |
| 2   | 9(22.5)         | 31(77.50)  |                  |         |
| > 2   | 3(9.375)        | 29(90.63)  |                  |         |
| <b>Mode of medication</b>   |                 |            |                  |         |
| IV  | 6(21.42)        | 22(78.57)  | 0.127            | 0.722   |
| Both IV and Oral  | 19(18.44)       | 84(81.55)  |                  |         |
| <b>Opinion about the prognosis of disease</b>   |                 |            |                  |         |
| Improving   | 24(18.75)       | 104(81.25) | 0.404            | 0.473*  |
| Deteriorating   | 1(33.33)        | 2(66.67)   |                  |         |
| <b>Got help from others to pay treatment cost</b>                                       |                 |            |                  |         |
| Yes   | -               | 36(100.00) | 11.708           | 0.001   |
| No  | 25(26.31)       | 70(73.68)  |                  |         |
| <b>Other children suffering from the same disease</b>                                   |                 |            |                  |         |
| Yes   | 5(17.24)        | 24(82.76)  | 0.082            | 0.775   |
| No  | 20(19.60)       | 82(80.39)  |                  |         |
| <b>Able to maintain occupational life due to the ill child</b>                          |                 |            |                  |         |
| Yes   | 9(15.51)        | 49(84.48)  | 0.857            | 0.354   |
| No  | 16(21.91)       | 57(78.08)  |                  |         |
| <b>Problems of drug unavailability</b>  |                 |            |                  |         |
| Yes   | 5(20)           | 20(80.00)  | 0.017            | 1.000*  |
| No  | 20(18.86)       | 86(81.13)  |                  |         |

\*\* Likelihood ratio

Ayenu et al. (2020)<sup>19</sup> indicated that 23.2% of the participants in their study in a hospital of Gondar, Ethiopia had children with previous experience of hospitalization. The results of the present study reveal that a substantial proportion of the respondents (80.9%) experienced moderate level of stress, while 19.1% reported mild level of stress. Notably, no

respondents indicated severe stress. To contextualize these findings, a comparison with the studies of Basnet (2019)<sup>15</sup> and Shanthakumari (2019)<sup>29</sup> provides valuable insights. In the study by Basnet, the distribution of stress levels showed that 11.1% reported normal stress, 11.1% mild, 10% moderate, 21.1% severe, and 42% extremely severe stress. On the other hand, Shanthakumari reported no participants

with mild stress, half (51%) with moderate stress, and 41% with high stress. The variation in stress levels across these studies may be attributed to differences in sample characteristics, cultural factors, or variations in stress measurement tools. The absence of severe stress in the present study suggests a comparatively lower level of stress among the respondents. While examining the association of respondents' stress with various variables in our study, the results indicate that level of stress is statistically not significant with age in years ( $p=0.426$ ), occupational status ( $p= 0.055$ ), age of the hospitalized child ( $p= 0.274$ ), and duration of hospitalization ( $p= 0.274$ ). This suggests that these factors did not significantly contribute to variations in the stress levels reported by the respondents. In contrast, Mohamed and Mohamed (2014)<sup>5</sup> reported a significant relationship between stress and maternal age, mother's occupation, child's age, duration of hospitalization, types of admission, and insurance

coverage ( $p<0.01$ ).

## CONCLUSIONS

The finding indicates that over two-thirds of mothers experienced moderate stress, while one-third had mild stress, suggesting a substantial burden on many mothers. Statistically significant factors associated with maternal stress included the mother's education level, type of family, number of children, and receiving help to pay treatment costs. Lower education levels, nuclear family structures, having more children, and lack of external financial support for treatment were linked to higher stress levels, highlighting the impact of socio-economic and family dynamics on maternal well-being. Addressing these factors, such as improving education and providing financial assistance, could help reduce maternal stress.

**Conflict of interest:** None

**Funding:** None

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**Citation:** Dahal N, Dhimal S, Upadhyay HP. Prevalence and Its Associated Factors of Maternal Stress among Mothers of Hospitalized Children Admitted to a Tertiary Health Care Center of Central Nepal. *JCMS Nepal*. 2024; 20(4): 337-044.