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Correlation of anxiety and depression with socio-economic status among caregivers of children admitted at Dhulikhel Hospital: A cross-sectional study

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Abstract

Introduction: The paediatric ward is a highly stressful environment affecting economic and social productivity of caregivers. Evaluating anxiety and depression among caregivers, along with their socioeconomic status, is vital for early detection of psychiatric morbidity. This study aimed to assess anxiety, depression, and socioeconomic status, and examine their correlation among caregivers of hospitalized children.

Method: A cross-sectional study was conducted at Dhulikhel Hospital, Nepal, in paediatric wards, PICU, and PHDU from Jun 2023 to Jan 2024. Adult primary caregivers aged 18–60 years, having children aged 6 weeks to 16 years hospitalized for ≥7 days were recruited. Data collection tools included HADS Nepali and Modified Kuppuswamy Socioeconomic Scale. Ethical approval was obtained from IRC. Data were analysed using SPSS version 27 with Pearson correlation test, and $p<0.05$ was considered significant.

Result: Out of a total of 78 caregivers, mean age was 31.35±7.39 years; 60(77%) were female. Anxiety was present in 40(51%) and depression in 23(30%) participants. Socioeconomic status showed 46(59%) from middle and 30(38%) from lower class. Correlation between anxiety, depression, and socioeconomic status was not statistically significant (r=-0.138, p=0.227).

Conclusion: Anxiety and depression were prevalent among caregivers of hospitalized children. A negative correlation with socioeconomic status was observed, which is clinically meaningful despite lack of statistical significance. Early screening and psychological support for at-risk caregivers is recommended.

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Introduction

Hospitalization of children often leads to a significant shift in roles and responsibilities for parents.[1,2] The primary caregiver, who makes daily decisions and remains closest to the child, can become emotionally overwhelmed.[3] Anxiety is a common response during this time and is usually felt intensely at the bedside. The child's illness may also place a heavy emotional and financial burden on families, particularly those with limited resources.[4]

The paediatric ward is a highly stressful environment,[5] especially for caregivers with low socioeconomic status, which may intensify worries about the child's illness.[6] Studies indicate that parental stress can lead to the use of harsh and ineffective parenting strategies, potentially disrupting medical follow-ups and proper care, resulting in severe complications for the child's health.[7] Nepal, a low middle-income country, has the second-highest psychiatric morbidity (301 per 1,000) in South Asia.[8] Understanding the mental health status of caregivers in these settings is crucial, as they play an integral role in supporting hospitalized children and directly influence patient outcomes and recovery.[9]

However, the variations in anxiety and depression levels by socioeconomic status and the specific struggles of caregivers in Nepal remain unclear. Therefore, this study aimed to assess anxiety and depression levels, evaluate socioeconomic status, and explore their correlation among caregivers of hospitalized children.

Method

A cross-sectional study was conducted in paediatric wards, Paediatric Intensive Care Unit (PICU) and Paediatric High Dependency Unit (PHDU) at Dhulikhel Hospital, Nepal, from Jun 2023 to Jan 2024. Ethical approval was obtained from Kathmandu University School of Medical Sciences, Institutional Review Committee (IRC-KUSMS 93/32). Prior permission for the Nepali version of the Hospital Anxiety and Depression Scale (HADS Nepali) and Modified Kuppuswamy's socioeconomic scale in the context of Nepal was obtained from the respective authors. Approval from the Department of Paediatrics was secured.

All caregivers of hospitalized children were screened for eligibility criteria. Eligible participants were primary caregivers aged 18–60 years having children in the age group of 6 weeks to 16 years hospitalized for at least seven days, capable of reading and writing Nepali language. Exclusion criteria included unwilling participants and pre-diagnosed cases of anxiety and depression. A total of 78 participants met eligibility criteria and were recruited using a convenience sampling technique.

All participants were explained the objective of the study, benefits, and confidentiality. Written informed consent was obtained from all participants, following which data collection was done in a separate quiet area near the paediatric ward. Each participant completed an information sheet. The administration of the Hospital Anxiety and Depression Scale (HADS) and the Kuppuswamy Socioeconomic Status (SES) scale took approximately 5 to 10 minutes. The instruments demonstrate high internal consistency and excellent construct and concurrent validity.[10]

After completion of data collection, data were entered into Microsoft Excel, and statistical analysis was conducted using SPSS version 27. Descriptive statistics were presented as frequency (percentage) and mean±standard deviation. Normality was assessed using skewness and kurtosis. Pearson correlation test was used to examine the relationship between variables. A p-value <0.05 was considered statistically significant.

Result

A total of 78 participants were included in this study. The demographic information is presented in Table 1.

The mean age of the participants was 31.81±7.39 years, where the majority were females 60(77%). Most participants were

educated 76(97%) and belonged to nuclear families 63(81%). Brahmin ethnicity 33(42%) was most common. The mean age of hospitalized children was 48.74±45.05 months, with male children 44(56%) predominating. Government health insurance was available for 54(69%) participants, Table 1.

The prevalence of anxiety among participants was 40(51%), while borderline anxiety was found in 24(31%) participants. For depression, 23(30%) participants had valid cases and 29(37%) had borderline levels, Table 2.

According to the Kuppuswamy Socioeconomic Status Scale, 46(59%) participants belonged to the middle class, whereas 30(38%) and 2(3%) were classified as lower and upper class, respectively, Table 3.

The skewness and kurtosis z-values were 0.9, 3.3, -0.24, and -0.05. These values fell between -1.96 and +1.96, showing a normal distribution of data, permitting parametric tests.

The Pearson correlation for the HADS-A score and the Kuppuswamy SES score was -0.177, indicating a negative correlation. The significance level for this correlation was p=0.122, which was not statistically significant. In contrast, the Pearson correlation for the HADS-D score and the Kuppuswamy SES score was 0.015, suggesting a positive correlation. The significance level for this correlation was p=0.898, also not statistically significant.

The Pearson correlation between the total score of the Hospital Anxiety and Depression Scale (HADS) and the Kuppuswamy Socioeconomic Status (SES) score was -0.138, indicating a negative direction and strength of correlation, Table 4 and Figure 1. The significance level for this correlation was p=0.227. Additionally, the Pearson correlation between the HADS-Anxiety (HADS-A) score and the education score from the Kuppuswamy SES score was -0.171, with a significance level of p=0.134.

Table 1. Demographic characteristics of caregivers of hospitalized children, n=78

Variables	Category	Mean±SD / n(%)
Age (years)		31.81±7.39
Gender	Male	18(23)
	Female	60(77)
Education	Educated	76(97)
	Uneducated	2(3)
Type of family	Nuclear family	63(81)
	Joint family	15(19)
Ethnicity	Chettri	18(23)
	Brahmin	33(42)
	Newar	19(24)
	Tamang	5(6)
	Others	3(4)
Age of children (months)		48.74±45.05
Gender of children	Male	44(56)
	Female	34(44)
Government health insurance	Yes	54(69)
	No	24(31)

Table 2. Distribution of anxiety and depression among caregivers using HADS scale, n=78

HADS sub-scale	Thresholds (Score)	n(%)
HADS-A	No case (0-7)	14(18)
	Borderline (8-10)	24(31)
	Valid (≥11)	40(51)
HADS-D	No case (0-7)	26(33)
	Borderline (8-10)	29(37)
	Valid (≥11)	23(30)

Table 3. Socioeconomic status distribution of caregivers using Kuppuswamy SES scale, n=78

Kuppuswamy SES Scale	n(%)
Upper class (26-29)	2(3)
Middle class (11-25)	46(59)
Lower class (0-10)	30(38)

Table 4. Correlation between HADS score and Kuppuswamy SES score among caregivers, n=78

Variables	r-value	p-value
HADS-A and Kuppuswamy SES score	-0.177	0.122
HADS-D and Kuppuswamy SES score	0.015	0.898
HADS total score and Kuppuswamy SES score	-0.138	0.227

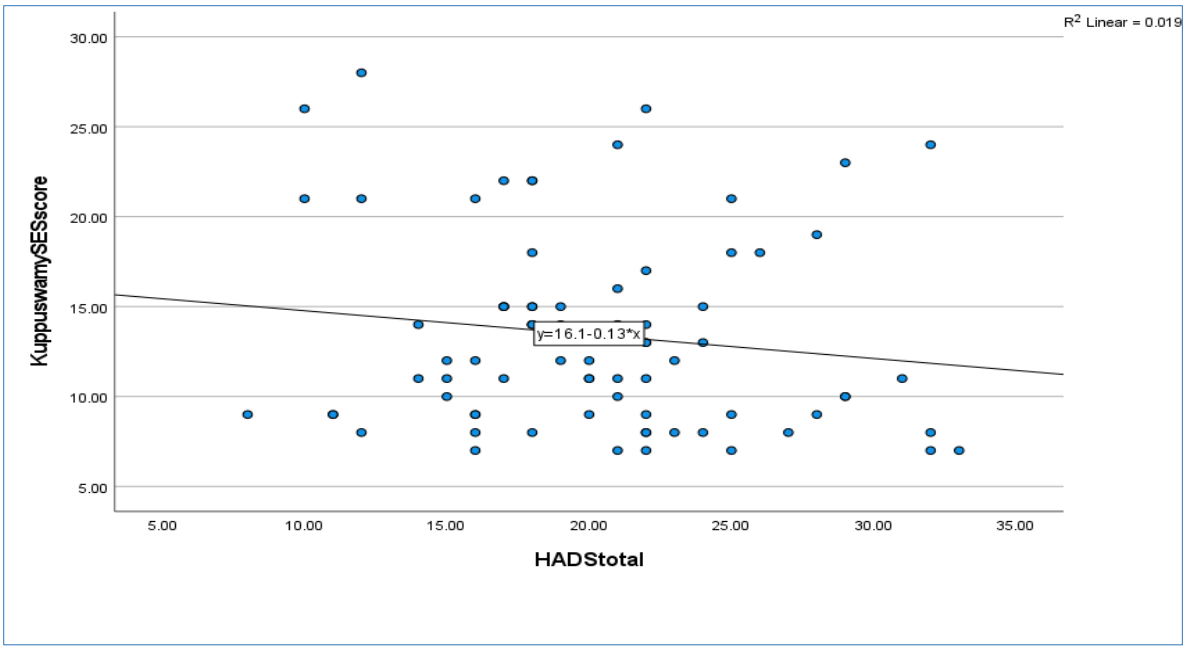

Figure 1. Scatter plot showing negative correlation between Kuppuswamy SES score and HADS total score among caregivers (r=-0.138, p=0.227)

Discussion

Our study found that 51% of caregivers of hospitalized children had anxiety and 30% had depression, with the majority belonging to middle (59%) and lower (38%) socioeconomic classes. Although the correlation between anxiety, depression, and socioeconomic status was not statistically significant (r=-0.138, p=0.227), a negative trend was observed.

These findings are consistent with a previous study conducted in Nepal, which reported a 22.7% prevalence of anxiety and 11.7% depression among caregivers.[11] Similarly, a study by Pandey and colleagues found that 33%

of caregivers of children had clinically significant symptoms of anxiety, while 24.6% had symptoms of depression.[12] In the Nepalese context, the elevated prevalence of psychological distress may be influenced by culturally specific factors such as limited mental health awareness, stigma, and insufficient caregiver support systems within hospital environments.[13] This may be because parents in hospital environments believe they do not adequately perform their job.[14,15] They may have to shift their role from being parents of healthy children to parents of sick children, which can be very challenging. The sense of inadequacy or fear of not fulfilling parental responsibilities adequately while navigating complex hospital procedures and uncertainties can elevate anxiety and depressive symptoms.[16] Globally, studies demonstrate significant psychological health differences between caregivers and non-caregivers, leading to caregiver vulnerability, anxiety, and depression.[17]

Our results showed that low socioeconomic status was associated with higher levels of anxiety among caregivers, though not statistically significant. This may be associated with additional socioeconomic pressure and family-related stressors among caregivers in a low socioeconomic country like Nepal, that intensifies psychological symptoms. Additionally, family socioeconomic status and low family functioning is found to be associated with high levels of anxiety for caregivers.[18,19] Families with limited financial resources may face additional pressures, including difficulty affording medical expenses, reduced access to supportive services, and limited social networks, which aggravate stress and hinder their ability to cope with caregiving demands. This may be attributed to the limited resources and support, less adaptability to care demands, and a diminished ability to effectively advocate for their child's needs. These factors could affect the caregiver's mental health as well as the child's care continuity.[20] The persistent demands of caregiving, when combined with economic hardship and social disadvantage, can lead to chronic stress and feelings of isolation.[21] Over time, these burdens may take a significant toll on their mental well-being, increasing vulnerability to conditions such as anxiety, depression, and emotional exhaustion.[22]

A study similarly demonstrated high levels of stress and anxiety among caregivers of hospitalized children and the score of stress and anxiety significantly increased with increase in duration of hospital stay (>5 days).[23] This result is also consistent with the present study where the hospital stay of participants was more than 7 days which may attribute to increased psychological distress. Supporting this, various studies indicated the elevated level of parental stress related to uncertainty about the child's prognosis and care demand. Similarly, a study emphasized that hospitals with limited support systems and prolonged treatment durations create an environment of chronic stress for caregivers, compounding mental health challenges in resource-constrained settings.[24] Additionally, extended hospital stays often lead to more severe illnesses, which innately increase caregiver responsibilities. This may overwhelm caregivers' coping mechanisms, especially in contexts where mental health resources are limited, as commonly reported in Nepal.[25] Moreover, prolonged hospital stays can hinder caregivers' earning, leading to aggravated stress due to rising medical expenses and loss of income.[26]

Similarly, our study showed a negative correlation between anxiety and level of education, which means the higher the education level, the lower the anxiety level and vice versa. This coincided with the study conducted by Pandey and colleagues where caregivers with higher levels of education were less burdened than those with lower level of education.[11] The study by Badini and colleagues found that shared environmental influences on child emotional symptoms were greater at lower levels of parents' education.[27] Also, parents with higher levels of education may have better coping strategies, better economic stability, and access to resources.[25]

This study has several limitations that should be considered. It was conducted at a single center with a relatively small sample size, which may

limit generalizability of findings to other settings. The cross-sectional design precludes establishing causal relationships between socioeconomic status and psychological outcomes. Additionally, self-report measures may be subject to social desirability bias, potentially influencing the accuracy of reported anxiety and depression levels. Future research with larger, multi-center samples and longitudinal designs would help validate and extend these findings. Our findings were not statistically significant but have social and clinical implications, demonstrating a negative correlation between anxiety, depression, and socioeconomic status.

Conclusion

This study demonstrated a negative correlation between anxiety, depression and socioeconomic status among caregivers of hospitalized children, though not statistically significant. Different clinico-demographic factors influenced stress, anxiety and depression in different cultural contexts and backgrounds. Consideration of this might contribute in the field of paediatric caregivers' psychology thus, the early detection and prevention of psychiatric morbidity.

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Conflict of interest

None

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Author contribution

Conceptualization: AP, SK; Data curation: SK; Formal analysis: AP, SK; Investigation: SK; Methodology: AP, SK; Writing – original draft: SK; Writing – review & editing: AP; Final approval: AP; Accountability: AP

Supplementary material

Data and supplementary material that support the findings of this study are available from the corresponding author upon reasonable request.

References

1. Lam LW, Chang AM, Morrissey J. Parents' experiences of participation in the care of hospitalized children: a qualitative study. Int J Nurs Stud. 2006;43(5):535-45. DOI: 10.1016/j.ijnurstu.2005.07.009 PubMed Google Scholar Full Text
2. Paparrigopoulos T, Melissaki A, Efthymiou A, Tzavellas E, Karaiskos D, Ilias I, et al. Short-term psychological impact on family members of intensive care unit patients. J Psychosom Res. 2006;61(6):719-22. DOI: 10.1016/j.jpsychores.2006.05.013 PubMed Google Scholar Full Text
3. Maridal HK, Bjørgaas HM, Hagen K, Jonsbu E, Mahat P, Malakar S, et al. Psychological distress among caregivers of children with neurodevelopmental disorders in Nepal. Int J Environ Res Public Health. 2021;18(5):2460. DOI: 10.3390/ijerph18052460 PubMed Google Scholar Full Text
4. Franck LS, Cox S, Allen A, Winter I. Measuring neonatal intensive care unit-related parental stress. J Adv Nurs. 2005;49(6):608-15. DOI: 10.1111/j.1365-2648.2004.03336.x PubMed Google Scholar Full Text
5. Diaz-Caneja A, Gledhill J, Weaver T, Nadel S, Garralda E. A child's admission to hospital: a qualitative study examining the experiences of parents. Intensive Care Med. 2005;31:1248-54. DOI: 10.1007/s00134-005-2728-8 PubMed Google Scholar Full Text
6. Liu Z, Heffernan C, Tan J. Caregiver burden: a concept analysis. Int J Nurs Sci. 2020;7(4):438-45. DOI: 10.1016/j.ijnss.2020.07.012 PubMed Google Scholar Full Text
7. Hsiao YJ. Parental stress in families of children with disabilities. Interv Sch Clin. 2018;53(4):201-5. Google Scholar: scholar.google.com/scholar?q=Parental+stress+in+families+of+children+with+disabilities+Hsiao Full Text
8. Bhatta DK, Budhathoki K, Paudel K, Paudel S, Marhatta SB, Mahat S, et al. The burden of depressive and anxiety disorders in Nepal, 1990-2017: an analysis of Global Burden of Disease data. J Karnali Acad Health Sci. 2022;5(1):66-73. Google Scholar: scholar.google.com/scholar?q=The+burden+of+depressive+and+anxiety+disorders+in+Nepal+1990-2017+an+analysis+of+Global+Burden+of+Disease+data Full Text
9. Beck AF, Solan LG, Brunswick SA, Sauers-Ford H, Simmons JM, Shah S, et al. Socioeconomic

status influences the toll paediatric hospitalisations take on families: a qualitative study. BMJ Qual Saf. 2017;26(4):304-11. DOI: 10.1136/bmjqs-2016-005421 PubMed Google Scholar Full Text

10. Risal A, Manandhar K, Linde M, Koju R, Steiner TJ, Holen A. Reliability and validity of a Nepali-language version of the Hospital Anxiety and Depression Scale (HADS). Kathmandu Univ Med J (KUMJ). 2015;13(2):115-24. PubMed: pubmed.ncbi.nlm.nih.gov/26657079 Google Scholar Full Text
11. Risal A, Manandhar K, Linde M, Steiner TJ, Holen A. Anxiety and depression in Nepal: prevalence, comorbidity and associations. BMC Psychiatry. 2016;16:102. DOI: 10.1186/s12888-016-0810-0 PubMed Google Scholar Full Text
12. Pandey S, Sharma D, Shrestha M, Dhungana M, Basnet S. Perceived burden in caregivers of children with autism spectrum disorder. J Nepal Health Res Counc. 2018;16(39):192-7. PubMed: pubmed.ncbi.nlm.nih.gov/29983435 Google Scholar Full Text
13. Gurung D, Poudyal A, Wang YL, Neupane M, Bhattarai K, Wahid SS, et al. Stigma against mental health disorders in Nepal conceptualised with a 'what matters most' framework: a scoping review. Epidemiol Psychiatr Sci. 2022;31:e11. DOI: 10.1017/s2045796021000809 PubMed Google Scholar Full Text
14. Ryan-Wenger NA, Sharrer VW, Campbell KK. Changes in children's stressors over the past 30 years. Pediatr Nurs. 2005;31:282-8,291. PubMed: pubmed.ncbi.nlm.nih.gov/16229124 Google Scholar Full Text
15. Hill C, Knafl KA, Santacroce SJ. Family-centered care from the perspective of parents of children cared for in a pediatric intensive care unit: an integrative review. J Pediatr Nurs. 2017;41:22-33. DOI: 10.1097/njh.0000000000000335 PubMed Google Scholar Full Text
16. Shaik AR. Relationship between physical, mental fitness and associated factors: a cross-sectional study on parents of children suffering from cerebral palsy. Eur Rev Med Pharmacol Sci. 2023;27(1):74-80. DOI: 10.26355/eurrev_202301_30854 PubMed Google Scholar Full Text
17. Pinquart M, Sörensen S. Differences between caregivers and noncaregivers in psychological health and physical health: a meta-analysis. Psychol Aging. 2003;18(2):250-67. DOI: 10.1037/0882-7974.18.2.250 PubMed Google Scholar Full Text
18. Pérez-Cruz M, Parra-Anguita L, López-Martínez C, Moreno-Cámara S, del-Pino-Casado R. Burden and anxiety in family caregivers in the hospital that debut in caregiving. Int J Environ Res Public Health. 2019;16(20):3977. DOI: 10.3390/ijerph16203977 PubMed Google Scholar Full Text
19. Vaz LE, Jungbauer RM, Jenisch C, Austin JP, Wagner DV, Everist SJ, et al. Caregiver experiences in pediatric hospitalizations: challenges and opportunities for improvement. Hosp Pediatr. 2022;12(12):1073-80. DOI: 10.1542/hpeds.2022-006645 PubMed Google Scholar Full Text
20. Vaz LE, Wagner DV, Ramsey KL, Jenisch C, Austin JP, Jungbauer RM, et al. Identification of caregiver-reported social risk factors in hospitalized children. Hosp Pediatr. 2020;10(1):20-8. DOI: 10.1542/hpeds.2019-0206 PubMed Google Scholar Full Text
21. Seliner B, Latal B, Spirig R. When children with profound multiple disabilities are hospitalized: a cross-sectional survey of parental burden of care, quality of life of parents and their hospitalized children, and satisfaction with family-centered care. J Spec Pediatr Nurs. 2016;21(3):147-57. DOI: 10.1111/jspn.12150 PubMed Google Scholar Full Text
22. Muscara F, McCarthy MC, Woolf C, Hearps SJ, Burke K, Anderson VA. Early psychological reactions in parents of children with a life-threatening illness within a pediatric hospital setting. Eur Psychiatry. 2015;30(5):555-61. DOI: 10.1016/j.eurpsy.2014.12.008 PubMed Google Scholar Full Text
23. Commodari E. Children staying in hospital: research on psychological stress of caregivers. Ital J Pediatr. 2010;36:40. DOI: 10.1186/1824-7288-36-40 PubMed Google Scholar Full Text
24. Kortz TB, Nielsen KR, Mediratta RP, Reeves H, O'Brien NF, Lee JH, et al. The burden of critical illness in hospitalized children in low- and middle-income countries: protocol for a systematic review and meta-analysis. Front Pediatr. 2022;10:756643. DOI: 10.3389/fped.2022.756643 PubMed Google Scholar Full Text
25. Lempp H, Abayneh S, Gurung D, Kola L, Abdulmalik J, Evans-Lacko S, et al. Service user and caregiver involvement in mental health system strengthening in low- and middle-income countries: a cross-country qualitative study. Epidemiol Psychiatr Sci. 2018;27(1):29-39. DOI: 10.1017/s2045796017000634 PubMed Google Scholar Full Text

26. Thapa P, Lama S, Rai G, Sapkota N, Pradhan N, Thapa R, et al. Family caregiver experience of caring COVID-19 patients admitted in COVID-19 hospital of a tertiary care hospital in Nepal. PLoS One. 2024;19(1):e0295395. DOI: 10.1371/journal.pone.0295395 PubMed Google Scholar Full Text
27. Badini I, Ahmadzadeh Y, Wechsler DL, Lyngstad TH, Rayner C, Eilertsen EM, et al. Socioeconomic status and risk for child psychopathology: exploring gene-environment interaction in the presence of gene-environment correlation using extended families in the Norwegian Mother, Father and Child Birth Cohort Study. J Child Psychol Psychiatry. 2024;65(2):176-87. DOI: 10.1111/jcpp.13872 PubMed Google Scholar Full Text