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Perceived Social Support and Psychological Well-being in Caregivers of Traumatic Brain Injury Patients: A Descriptive Study

Malathi Dhakshnamoorthy[1], Shankar Shanmugam Rajendran[2], Duraikannu Anandhi[3], Kannan Kasinathan[4], Athya Farheen Mohammed Sulthan[5], Padmavathy Murugan[6]

[1, 5, 6]Post Graduate, [2]Principal, [3, 4]Assistant Professor,
[1, 2, 3, 4, 5, 6]College of Nursing, Madras Medical College, Chennai-03 (Affiliated to the Tamilnadu Dr. MGR Medical University, Chennai)

Corresponding Author: Dr. R. Shankar Shanmugam

Abstract

Background: Traumatic brain injury (TBI) presents a growing global public health challenge. Caregivers of TBI patients often experience significant psychological strain and emotional distress. Perceived social support is crucial in mitigating these challenges and promoting better psychological well-being and caregiver outcomes.

Objectives: The study's main objectiveswereto assess the levels of perceived social support and psychological well-being among caregivers of TBI patients, examine their correlation, and identify associations with demographic variables.

Materials and Methods: A non-experimental descriptive study was used in the Neurotrauma ward of Rajiv Gandhi Government General Hospital in Chennai. Twenty-five carers were selected by a non-probability convenience selection technique. Data were gathered through structured interviews and validated instruments: the Multidimensional Scale of Perceived Social Support (MSPSS) and the General Health Questionnaire (GHQ). The statistical analysis comprised descriptive statistics, correlation analysis, and chi-square tests, with significance established at $p < 0.05$

Results: Most caregivers reported moderate perceived social support (76%) and psychological well-being (80%). Perceived social support and psychological well-being were strongly correlated ($r = 0.74$, $p = 0.001$).Gender ($p = 0.011$) and education level ($p = 0.022$) significantly influenced social support.

Conclusion: Caregivers of TBI patients face moderate social support and psychological well-being, emphasising the need for targeted interventions. Addressing demographic disparities and enhancing support systems can improve caregiver and patient outcomes.

Keywords: Traumatic Brain Injury, Caregivers, Perceived Social Support, Psychological Well-being, Mental Health, Social Support Systems

Introduction:

Traumatic brain injury (TBI) remains a significant public health issue, with increasing incidence rates globally. The World Health Organization (2021) estimates that TBI affects approximately 69 million people each year, leading to substantial long-term disabilities [1]. As medical advancements improve survival rates among TBI patients, the number of individuals requiring long-term care has risen dramatically. As a result, family members frequently take on the responsibility of primary carers, which can be incredibly taxing emotionally and psychologically[2].

Recent studies highlight the profound impact of caregiving on mental health. A systematic review found that 40% to 61% of caregivers experience moderate to high levels of burden, with significant correlations between caregiver strain and psychological distress [3]. Moreover, caregivers of TBI patients report elevated rates of anxiety and depression, with studies indicating that nearly 50% exhibit clinically significant symptoms [4].

Perceived social support is crucial in mitigating these negative outcomes. Research indicates that caregivers who feel supported by their social networks are more likely to report better mental health and lower levels of stress [5]. A recent study found that caregivers with strong emotional and social support systems experienced significantly less caregiver burden and improved life satisfaction [6]. In contrast, those lacking adequate support reported feelings of isolation and helplessness, which can exacerbate their psychological distress [7].

The need for targeted interventions addressing caregivers' psychological well-being is increasingly recognized. A randomised controlled trial assessing the effectiveness of the Brain Injury Family Intervention (BIFI) program demonstrated promising results in reducing caregiver emotional distress and improving life satisfaction [8].

Similarly, qualitative research has provided insights into the lived experiences of caregivers following TBI. A qualitative study revealed that caregivers often grapple with feelings of inadequacy and stress due to the unpredictability of TBI recovery trajectories [9]. The emotional burden is compounded by financial strains and social isolation, emphasising the need for comprehensive support systems tailored to caregivers' unique challenges.

The increasing recognition of caregiver burden necessitates further research into effective support mechanisms and intervention strategies. By prioritising the psychological needs of caregivers, healthcare systems can enhance caregiver well-being and patient recovery outcomes. This study aims to assess Perceived Social Support and Well-being, contributing valuable insights into improving care for TBI patients and their caregivers.

Materials and Methods:

A non-experimental descriptive research design was chosen to describe and analyse the levels of perceived social support and psychological well-being among caregivers without manipulating any variables. The study was conducted in the Neurotrauma ward of Rajiv Gandhi Government General Hospital (RGGGH), Chennai-03. The data collection took place over four weeks. The study focused on caregivers of TBI patients admitted to this ward. The target population included all caregivers of TBI patients with high perceived social support and psychological well-being, while the accessible population comprised caregivers meeting the inclusion criteria and available during the study period.

Sample size:

A total of 25 caregivers of TBI patients were recruited for the study. The sample size was calculated based on previous research by Ebrahim et al. (2020), using statistical methods to ensure representativeness. The formula used for sample size determination was:

$$N=\frac{Z^2\sigma^2}{\xi(\mu)}$$

where Z represents the confidence limit (1.96), σ is the standard deviation (1.42), and ξ is the relative precision (0.60). A non-probability convenience sampling technique was employed to recruit participants. Caregivers aged 18 years or older, serving as primary caregivers to TBI patients, willing to participate, and able to read or understand Tamil or English were included in the study. Exclusion criteria included caregivers responsible for patients with conditions other than TBI, those with cognitive impairments, and individuals participating in other research studies.

Data were collected using socio-demographic data, the Multidimensional Scale of Perceived Social Support (MSPSS) and General Health Questionnaire (GHQ). Content validity was established by experts in neurology and nursing, who suggested minor modifications to enhance the tool’s applicability. Reliability was assessed using the Cronbach alpha method, yielding a coefficient of 0.87, which indicated high reliability.

Ethical Consideration:

Ethical approval was obtained from the Institutional Ethical Committee of Madras Medical College, Chennai (No. IEC-MMC/Approval/66042024), and the Neurology Department granted authorisation. Participants were informed about the study's goal, and informed consent was secured. The confidentiality of participants' data was upheld consistently, and their choice to withdraw from the study at any moment was acknowledged.

Data Collection Procedure and statistical analysis:

The data-gathering procedure includesconducting interviews with participants, each lasting roughly 10–15 minutes. The data were evaluated utilising descriptive statistics (mean, standard deviation) and inferential statistics, encompassing correlation and regression analysis. A p-value of <0.05 was accepted as statistically significant for assessing links and disparities in perceived social support and psychological well-being.

Results:

Demographic Characteristics of Caregivers

The mean age of the caregivers was approximately 40.6 years ± 11.69 years. The majority of caregivers were female (60%). Most caregivers were married (64%), with secondary education (28%) being the highest educational level attained by the largest group. Most were engaged in private employment (36%), and medium-income (48%) earners were most common. A significant proportion of caregivers resided in urban areas (56%) and identified as Hindu (64%). The most common family structure was nuclear families (48%); most reported being non-smokers and non-drinkers (64%).

Perceived Social Support Levels

Most participants (76%) reported moderate levels of perceived social support, while 24% reported low levels. None of the caregivers reported high levels of perceived social support (Table 1). The results highlight that most caregivers experience moderate levels of social support during their caregiving journey.

TABLE 1: LEVEL OF PERCEIVED SOCIAL SUPPORT SCORE

Perceived Social Support Level	Frequency	Percentage (%)
Low level of support	6	24%
Moderate level of support	19	76%
High level of support	0	0%

Psychological Well-being Levels

A majority (80%) exhibited moderate psychological well-being, while 20% had low psychological well-being. Similar to perceived social support, none of the caregivers demonstrated high levels of psychological well-being (Table 2). These findings suggest a pressing need to enhance the mental health resources available to caregivers.

TABLE 2: LEVEL OF PSYCHOLOGICAL WELL-BEING SCORE

Psychological Wellbeing Level	Frequency	Percentage (%)
Low	5	20%
Moderate	20	80%
High	0	0%

Correlation between Perceived Social Support and Psychological Well-being

A strong positive correlation ($r = 0.74$, $p = 0.001$) was observed, indicating that higher levels of perceived social support are significantly associated with better psychological well-being among caregivers. This statistically significant result underscores the importance of social support systems in improving caregivers' mental health.

Association with Demographic Variables

The association between perceived social support and selected demographic variables was analysed using the chi-square test. Significant associations were found between perceived social support and gender ($p = 0.011$) and educational level ($p = 0.022$). Female caregivers and those with higher education levels reported higher perceived social support. Other demographic variables, such as age, income, and employment status, did not show statistically significant associations.

Discussion:

The findings of this study provide significant insights into the perceived social support, psychological well-being, and their correlations among caregivers of patients with traumatic brain injury (TBI).

Perceived Social Support

The present study showed that most caregivers (76%) reported moderate levels of perceived social support, while 24% had low support. No caregivers reported high levels of social support, suggesting a substantial gap in support systems. These findings are consistent with the study by Choustikova et al. (2020), which reported inadequate support from healthcare professionals in key areas such as symptom management, guidance, and service access for TBI caregivers [10]. Similarly, Siripituphum D et al. (2020) found that increased social support was negatively correlated with patient disability, emphasising the critical role of social support in TBI patients' recovery and caregivers' well-being [11]. These results underscore the need for improved caregiver-focused programs that provide practical guidance, emotional support, and enhanced access to services.

Psychological Well-being

Caregivers' psychological well-being was moderate in 80% of participants, with 20% reporting low levels. None of the caregivers reported high psychological well-being, highlighting the emotional and mental strain associated with caregiving. Omar et al. (2024) highlighted the effectiveness of targeted interventions, such as the Brain Injury Family Intervention (BIFI), in improving caregiver psychological well-being through structured support [12]. This study’s findings align with the need for such targeted programs, particularly those that address caregivers' emotional distress while providing opportunities for mental health improvement.

Correlation between Perceived Social Support and Psychological Well-being

The current study identified a strong positive correlation ($r = 0.74$, $p < 0.001$) between perceived social support and psychological well-being. This indicates that caregivers with higher social support experience better psychological well-being, reaffirming findings from Lindlof et al. (2024). This highlights the importance of sustained and adaptive social support systems to ensure long-term mental health stability for caregivers [13].

Association with Demographic Variables

The results found that gender and educational level significantly influenced perceived social support and psychological well-being. Female caregivers and those with higher education levels reported higher social support. These findings are consistent with Sabella et al. (2019), which revealed that weaker social support was more prevalent among younger, less-educated, and predominantly male populations. Their study emphasised the role of social support in reducing functional limitations, chronic pain, and mental health issues such as PTSD, depression, and anxiety, all of which affect caregivers' capacity to provide optimal care [14].

Conclusion:

Caregivers of traumatic brain injury patients face significant challenges, with moderate levels of perceived social support and psychological well-being being prevalent. The strong correlation between social support and well-being highlights the need for targeted interventions addressing demographic disparities. Enhancing caregiver support systems can improve their mental health, ultimately benefiting caregivers and patients in recovery and rehabilitation.

Conflict of interests: Nil

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