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Role of Social Support, Psychological Well-being and Satisfaction of Life among Patients suffering from Neuro-traumatic diseases

Salbia Abbas
salbia.abbas1992@gmail.com
PhD Scholar, University of Gujrat, Pakistan

Dr. Iram Naz
Iram.naz@uog.edu.pk
Assistant Professor, University of Gujrat, Pakistan
Corresponding Author: * Salbia Abbas salbia.abbas1992@gmail.com

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ABSTRACT

Patients with neuro-traumatic diseases often experience reduced psychological well-being and life satisfaction due to physical and emotional challenges. Neurological diseases refer to conditions affecting the central and peripheral nervous systems, arising from structural, biochemical, or electrical abnormalities in the brain, spinal cord, cranial and peripheral nerves, or autonomic nervous system. Current research is a cross sectional research with qunatitative research methodology. Sample of (N=120) patients suffering from Neurotraumatic diseases was recruited through purposive sampling technique. Both male and female from diverse background of rural and urban areas were included except children. Results of pearsons product moment correlation explained psychological wellbeing (r=0.72, p<0.001), Social support (r=0.63,p<0.001) and satisfaction with life (r=0.61), these results highlights strong positive correlations among model variables. In sum, current research communicates that individuals experiencing higher level of social support exhibits higher levels of psychological well being and satisfaction with life. Hence, social support acts as a mediator between psychological well being and satisfaction with life in patients suffering from neurotraumatic diseases. Another major finding of current research is relevant to the inclusion of demographic factors such as family system which affects the level of social support. Current research paves the way for mental health practitioners, policy makers and rehabilition therapists to enhance the social support services for psychological well being of the individuals suffering from Neurological diseases.

***Keywords**: Neurotraumatic diseases, TBI, psychological well being, social support, satisfaction with life, path analysis*

INTRODUCTION

Patients with neuro-traumatic diseases often experience reduced psychological well-being and life satisfaction due to physical and emotional challenges. Neurological diseases refer to conditions affecting the central and peripheral nervous systems, arising from structural, biochemical, or electrical abnormalities in the brain, spinal cord, cranial and peripheral nerves, or autonomic nervous system. These disorders manifest through various symptoms, including sensory loss, confusion, poor coordination, altered consciousness, and seizures (World Health Organization, 2006). Neurological disorders can be categorized into neurotraumatic (e.g., stroke, spinal cord injury, traumatic brain injury, epilepsy), neurodegenerative (e.g., Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, multiple sclerosis), and neuropsychological (e.g., depression, dementia, schizophrenia, bipolar disorder) conditions (Kumar et al., 2012). Stroke, spinal cord trauma, and traumatic brain injury result from metabolic and mechanical damage to the brain and spinal cord (Feigin et al., 2017). Conversely, neurodegenerative

diseases are driven by factors such as protein aggregation due to abnormal misfolding, oxidative stress, and neuro-inflammation, leading to progressive neuron loss, particularly with aging (Hou et al., 2019).

Neuro-traumatic Diseases

Neuro-traumatic diseases, including traumatic brain injury, spinal cord injury, and other neurological impairments, significantly impact patients' physical, emotional, and social functioning (Bryant et al., 2010). These conditions often result in long-term disabilities, reduced quality of life, and heightened psychological distress (Silver et al., 2009). For individuals suffering from such conditions, the interplay of social support, psychological well-being, and life satisfaction becomes critically important in mitigating the adverse effects of the disease and fostering a pathway toward recovery and adaptation (King et al., 2019). Traumatic brain injury (TBI) refers to brain damage caused by an external force, often resulting from a sudden or violent impact to the head. This injury can occur through mechanisms such as an object penetrating the skull or a blow that severely injures the brain. In contrast, non-traumatic brain injuries do not result from external forces but can cause widespread damage to the brain, often affecting brain cells and leading to oxygen deprivation. TBI can range from mild to severe and is associated with an increased risk of mental health conditions, including depression, anxiety, and sleep disturbances (Milders et al., 2017; Dikmen et al., 2010). The severity and impact of TBI on mental health and quality of life are significant, as they can cause persistent psychological symptoms and impair overall functioning (Abbas et al., 2022). Another major typr of Traumatic neurological diseases is Spinal cord injury (SCI) that is a serious medical condition results from trauma to the spinal cord, leading to partial or complete loss of motor, sensory, and autonomic functions below the level of injury. SCI can occur due to various causes, including accidents, falls, violence, and sports-related injuries, and it often leads to lifelong disabilities. The severity of SCI is determined by the level of the injury (e.g., cervical, thoracic, lumbar) and the extent of the damage to the spinal cord. The consequences of SCI can include paralysis, loss of sensation, and impaired respiratory and cardiovascular function, which can severely affect a person's quality of life (Lange et al., 2015; National Spinal Cord Injury Statistical Center, 2020). Effective rehabilitation and early interventions are essential in improving outcomes for individuals with SCI, promoting independence, and enhancing quality of life (Ahuja et al., 2017). The psychological and emotional impact of SCI is also significant, with individuals often experiencing depression, anxiety, and changes in self-esteem, which can further affect their mental well-being and life satisfaction (Frei et al., 2016).

Social Support

Social support refers to the emotional, instrumental, and informational assistance received from one's social network, including family, friends, and healthcare providers (Cohen & Wills, 1985). For neuro-traumatic patients, social support is essential in helping them navigate the challenges posed by their condition (King et al., 2019). Emotional support, such as empathy and understanding, provides comfort, while instrumental support, such as assistance with daily tasks and medical care, helps patients manage the functional limitations of their disease (Gottlieb & Bergen, 2010). Informational support, such as guidance on treatment and coping strategies, empowers patients to make informed decisions (House et al., 1988). Research has consistently shown that higher levels of perceived social support are associated with reduced stress, improved coping, and better psychological outcomes in patients with chronic and neuro-traumatic conditions (Thoits, 2011).

Psychological Well-Being

Psychological well-being encompasses an individual's emotional health, life satisfaction, and sense of purpose (Ryff, 1989). Neuro-traumatic diseases often lead to emotional distress, including anxiety, depression, and feelings of helplessness, stemming from physical disabilities and changes in life

circumstances (Silver et al., 2009). The psychological burden can be further exacerbated by social isolation and reduced functional independence (Feigin et al., 2017). However, social support plays a crucial role in promoting psychological well-being by providing a sense of belonging, reducing feelings of loneliness, and enhancing patients' ability to cope with their condition (Cohen & Wills, 1985). Furthermore, interventions aimed at improving psychological well-being, such as counseling and support groups, have been shown to enhance recovery and adaptation among neuro-traumatic patients (King et al., 2019).

Life Satisfaction

Life satisfaction is a subjective evaluation of one's overall quality of life based on personal goals and expectations (Diener et al., 1999). For patients with neuro-traumatic diseases, life satisfaction often diminishes due to physical limitations, reduced social roles, and financial challenges (Silver et al., 2009). However, the availability of a strong support system can buffer the negative impact of the disease by fostering optimism, resilience, and a sense of control over one's circumstances (Cohen & Wills, 1985). Social support not only aids in meeting practical needs but also contributes to emotional stability, which directly influences an individual's perception of life satisfaction (Myers & Diener, 1995; Ryff & Keyes, 1995). Studies have also shown that life satisfaction can be improved through interventions that address both physical and psychological needs, reinforcing the critical role of holistic support systems in enhancing quality of life (Shmotkin et al., 2003).

Interconnection of Social Support, Psychological Well-Being, and Life Satisfaction

The relationship between social support, psychological well-being, and life satisfaction is well-documented in the context of chronic and neuro-traumatic conditions (Cohen & Wills, 1985; Thoits, 2011). Social support acts as a protective factor, reducing the psychological and emotional burdens of the disease while promoting adaptive coping strategies (King et al., 2019). Enhanced psychological well-being, in turn, improves life satisfaction by fostering positive emotions, a sense of purpose, and the ability to enjoy life despite physical and emotional challenges (Ryff & Keyes, 1995; Shmotkin et al., 2003). Understanding this interconnectedness is crucial for designing interventions that address the holistic needs of neuro-traumatic patients, ultimately enhancing their quality of life and overall health outcomes (Silver et al., 2009). This is crucial to understand the role of social support in enhancing psychological well-being and life satisfaction among patients with neuro-traumatic diseases, as it is critical for developing effective psychosocial interventions (Myers & Diener, 1995). Current research will provide valuable insights into the factors that promote resilience and adaptability, paving the way for improved care strategies and better quality of life for these patients (Feigin et al., 2017).

Theoretical Framework

Social Support Theory (Cohen & Wills, 1985)

Social support theory is conceptualized as emotional, informational, and instrumental assistance from one’s social network. This theory suggests that individuals with adequate social support experience less psychological distress and better health outcomes (Cohen & Wills, 1985). In the context of neuro-traumatic diseases, social support can buffer the negative effects of the disease, enhance emotional well-being, and promote adaptive coping (Thoits, 1995)

Self-Determination Theory (Deci & Ryan, 2000)

This theory focuses on intrinsic motivation and psychological needs for autonomy, competence, and relatedness. For neuro-traumatic patients, fulfilling these basic psychological needs can foster better mental health and life satisfaction. Social support can assist in meeting these needs by providing resources, encouragement, and a sense of belonging (Deci & Ryan, 2000; Ryan & Deci, 2002).

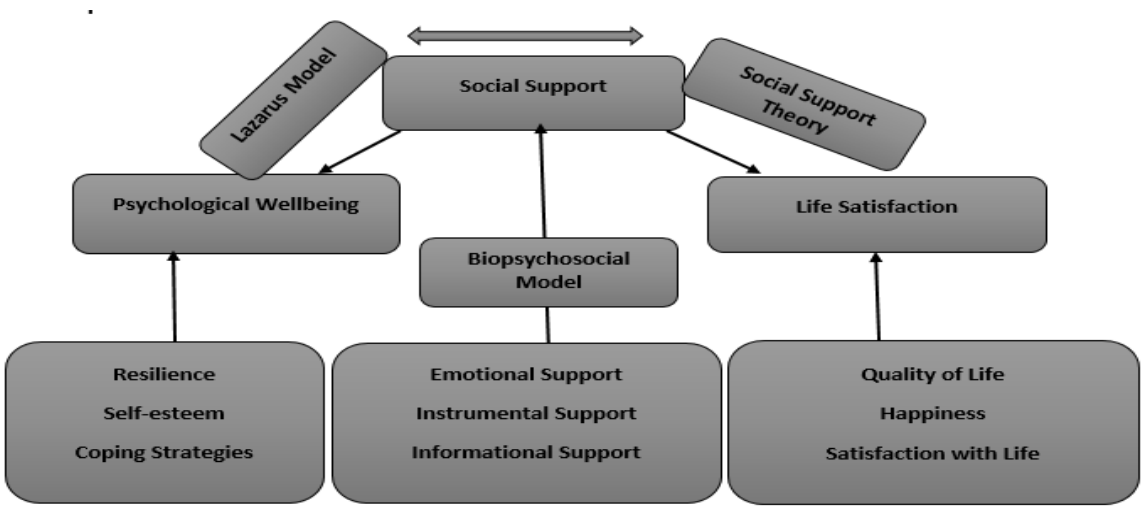
Coping Theory (Lazarus & Folkman, 1984)

The role of social support is critical in the coping process. This theory outlines how individuals manage stress through either problem-focused or emotion-focused coping strategies. Social support can enhance emotional well-being by helping individuals with neuro-traumatic diseases adapt and cope with the emotional and functional challenges of their condition (Lazarus & Folkman, 1984; Folkman & Moskowitz, 2004).

Biopsychosocial Model (Engel, 1977)

This model posits that biological, psychological, and social factors interact to influence health and well-being. For patients with neuro-traumatic diseases, the biological aspect (i.e., the injury itself), psychological well-being (e.g., coping with depression, anxiety), and social aspects (e.g., support systems, relationships) all contribute to overall life satisfaction and health outcomes (Engel, 1977; Berkman & Glass, 2000). The interaction of these factors highlights the importance of a holistic approach to treatment, focusing not only on the physical injury but also on mental health and social support.

CONCEPTUAL FRAME WORK



The conceptual framework for examining the role of Social Support, Psychological Well-Being, and Life Satisfaction among patients suffering from neuro-traumatic diseases integrates several theoretical perspectives that highlight the interconnections between these factors. Social Support Theory (Cohen & Wills, 1985) suggests that emotional, informational, and instrumental support from one's social network can significantly reduce psychological distress, enhance emotional well-being, and promote better health outcomes. In the context of neuro-traumatic diseases, social support is especially crucial as it buffers the negative effects of the disease, offering a sense of belonging, and helping individuals cope with the emotional and functional challenges they face. This support, in turn, directly influences Psychological Well-Being, which refers to emotional stability, resilience, and mental health. The Self-Determination Theory (Deci & Ryan, 2000) further underscores this connection by asserting that fulfilling basic psychological needs for autonomy, competence, and relatedness can promote better mental health and life satisfaction. As patients receive social support, these needs are more likely to be met, fostering a sense of well-being that positively impacts their overall life satisfaction. The relationship between Psychological Well-Being and

Life Satisfaction is another important aspect of the framework. Psychological well-being, which includes emotional resilience and the ability to manage stress, is positively correlated with life satisfaction. Coping Theory (Lazarus & Folkman, 1984) suggests that individuals use various coping strategies—either problem-focused or emotion-focused—to manage stress. Social support plays a critical role in this process by assisting neuro-traumatic patients in adopting more adaptive coping strategies, which in turn improves both their emotional health and life satisfaction. Furthermore, Biopsychosocial Model (Engel, 1977) emphasizes the interplay of biological, psychological, and social factors in determining health outcomes. For neuro-traumatic patients, this model highlights that their physical condition (the biological aspect), mental health (psychological aspect), and social relationships (social support) all work together to affect life satisfaction.

Current research proposed that social support serves as fundamental element for the psychological well-being and life satisfaction. Social support alleviates emotional distress, encourages adaptive coping mechanisms, and fosters a sense of belonging, all of which are crucial for improving psychological health. Moreover, the integration of biological, psychological, and social factors through the Biopsychosocial Model emphasizes the need for a holistic approach to the care of patients with neuro-traumatic diseases, one that addresses not only the physical injury but also the emotional and social dimensions of health. This comprehensive framework provides valuable insights into how social support can mitigate the negative impacts of neuro-traumatic diseases and promote overall well-being and life satisfaction.

Problem Statement

The role of social support in enhancing psychological well-being and life satisfaction among neuro-traumatic patients has gained significant attention in global research. International studies highlight the critical function of emotional, instrumental, and informational support in mitigating the adverse effects of neuro-traumatic conditions (Cohen & Wills, 1985). Research conducted in high-income countries such as the United States, Canada, and European nations emphasizes the integration of comprehensive rehabilitation programs, psychosocial interventions, and community-based support systems that significantly improve patient outcomes (Turner et al., 2019). These nations employ multidisciplinary approaches rooted in the Biopsychosocial Model (Engel, 1977), which underscores the interplay between biological, psychological, and social factors in determining health and well-being. Additionally, self-determination frameworks (Deci & Ryan, 2000) suggest that when patients' autonomy, competence, and relatedness needs are met through robust social support systems, their psychological well-being and life satisfaction improve substantially. Contrastingly, in many low- and middle-income countries (LMICs), including Pakistan, the healthcare infrastructure and social support mechanisms remain inadequate in addressing the holistic needs of neuro-traumatic patients. Studies indicate that limited access to specialized rehabilitation services, financial constraints, cultural stigmas surrounding mental health, and a lack of structured social support networks hinder patient recovery and overall well-being (Khan et al., 2021). In Pakistan, where familial and community ties are deeply embedded in societal norms, informal caregiving plays a significant role in patient support. However, the absence of formalized psychological and social care systems often places excessive burden on families, leading to caregiver burnout and suboptimal patient outcomes. Additionally, the coping mechanisms available to neuro-traumatic patients in Pakistan are often limited by sociocultural constraints, reducing their ability to develop adaptive strategies to manage their condition effectively (Lazarus & Folkman, 1984). Given these disparities, there is a critical need to explore the effectiveness of social support in improving psychological well-being and life satisfaction among neuro-traumatic patients in Pakistan. This study seeks to examine how existing support structures influence health outcomes within the local sociocultural and economic context. By comparing international best practices with the current national framework, this research aims to propose evidence-based interventions that can

enhance psychological and social well-being among neuro-traumatic patients in Pakistan, ensuring a more holistic approach to patient care.

METHODOLOGY

Research Design

Cross-sectional research was employed by using quantitative research methodology.

Participants

120 patients with neurotraumatic diseases were recruited through purposive sampling technique. Both male and female patients with neurotraumatic issues were obtained except children. Sample was from both rural and urban areas of Sialkot. Private and Govt. Hospitals were accessed for the collection of sample.

Measurements

Social Support

Social support will be measured using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). This 12-item scale assesses perceived social support from family, friends, and significant others on a 7-point Likert scale. Urdu version of this scale was utilized to measure social support.

Psychological Well-Being Scale

Psychological well-being was assessed using Ryff's Psychological Well-Being Scale (Ryff, 1989). This measure consists of six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, and purpose in life, and self-acceptance, rated on a 6-point Likert scale. Urdu version of this scale was used by the researcher translated by Jibeen and Khalid 2012.

Satisfaction with Life Scale

Life satisfaction was measured using the Satisfaction with Life Scale (SWLS; Diener et al., 1985). This 5-item scale evaluates individuals' global cognitive judgments of their life satisfaction using a 7-point Likert scale. Urdu version of satisfaction with life scale was utilized to measure the Life satisfaction developed by (Butt, M. 2023)

Procedure

Institution permission from Govt. and Private Hospitals of Sialkot was attained to ensure the ethical compliance for data collection. Patients suffering from Neuro-traumatic diseases were considered as sample excluding children. Sample was approached through purposive sampling technique. Both verbal and written informed consent was attained from the participants. Before participation, all individuals were provided with detailed information regarding the study's objectives, ensuring transparency and ethical considerations. Confidentiality was strictly followed throughout the research procedure. Researcher was

continuously provided her services for enhancing the understandability of the participants. The collected responses were then compiled and systematically organized for subsequent data analysis.

Ethical Considerations

This study was conducted with the approval of the institutional ethical review committee, which ensured adherence to all APA ethical standards throughout the planning, data collection, and reporting phases.

RESULTS

Table 1.1 Frequency distribution and percentage of demographic variables

Categories	N	%age
Gender		
Male	95	70
Female	25	30
Age range		
Early Adolescence	40	32
Middle Adolescence	45	37
Adulthood (Early-late)	35	29
Family System		
Joint	90	75
Nuclear	30	25
Education status		
Primary	25	10
Middle	20	17
Matric	40	80
Intermediate & above	35	30

Table 1.1 describes the categories, frequencies and percentage of the demographic variables. Available analysis presents that 70% (N=95) were male and 30% (N=30) were females. Stats in the table depicts that 32% (N=40) were early adolescents, 37% (N=45) were middle adolescents, 29% (N=35) participants were of early-late adulthood. 75 %(N=90) belongs to joint family system while 25% (N=30) persons were from nuclear family system. Moreover, education level of the participants was mixed almost 80 %(40) of the participants belong to metric level of education.

Table 1.2 Type of Neurotraumatic disease, frequencies and percentage

Category	N	%age
Type of NTD		
TBI	80	67
SI	20	17
Other injuries	20	17

Table 1.2 defines the type of neurotraumatic diseases, frequencies and percentage. Such as the number of patients was N=80 suffering from Traumatic brain injury which is 67% of available sample. N=20 patients

were of spinal cord injury that is 17% of available sample. Patients suffering from other injuries were N=20 that is also 17% of the sample population.

Hypothesis 1 There are significant differences in social support, psychological well-being, and life satisfaction based on demographic factors such as age, gender, and socioeconomic status.

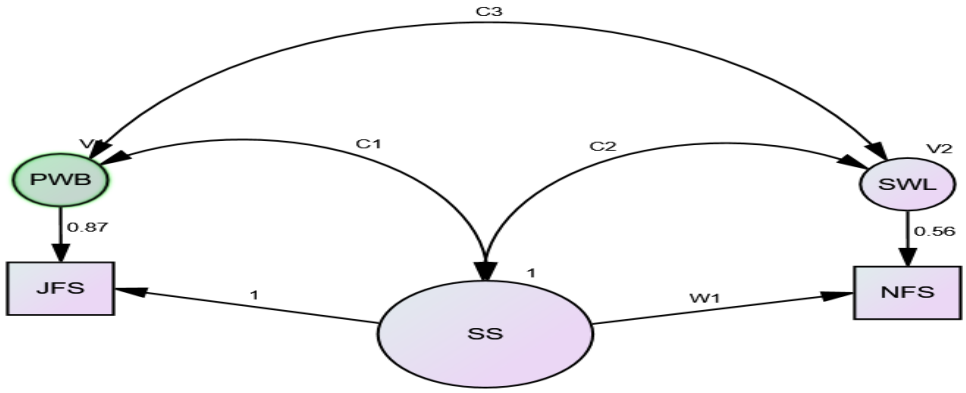


Fig. 1.1 Path Analysis of PWB, SS, SWL among individuals in joint and nuclear family systems

Fig 1.1 depicts Path Analysis (PA) model illustrates the relationships between Psychological Well-Being (PWB), Satisfaction with Life (SWL), Social Support (SS), Joint family system (JFS), and Nuclear family system(NFS). The model suggests that PWB is a strong predictor of JFS, with a standardized path coefficient of 0.87, indicating that individuals in joint family system experience higher levels of psychological well-being than the individuals with nuclear system with neurotraumatic diseases. Similarly, SWL significantly predicts Nuclear family system ($\beta = 0.56$), suggesting that individuals with Nuclear family system experience more life satisfaction than individuals in Joint family system. Social Support (SS) serves as a central latent construct in the model, receiving direct influences from both PWB and SWL (paths C1 and C2), suggesting that psychological well-being and life satisfaction contribute to stronger social support systems. Additionally, SS fully mediates the relationship between JFS and NFS (path W1), indicating that job and financial security indirectly influence need fulfillment satisfaction through social support. The presence of C3 (covariance link) between PWB and SWL suggests a strong positive correlation between these two psychological constructs, reinforcing the idea that psychological well-being and life satisfaction are interrelated dimensions of overall mental health. In sum, this model highlights the interdependent nature of psychological well-being, life satisfaction, social support among participants of joint and nuclear family systems, emphasizing the mediating role of social support in shaping life satisfaction and well-being outcomes.

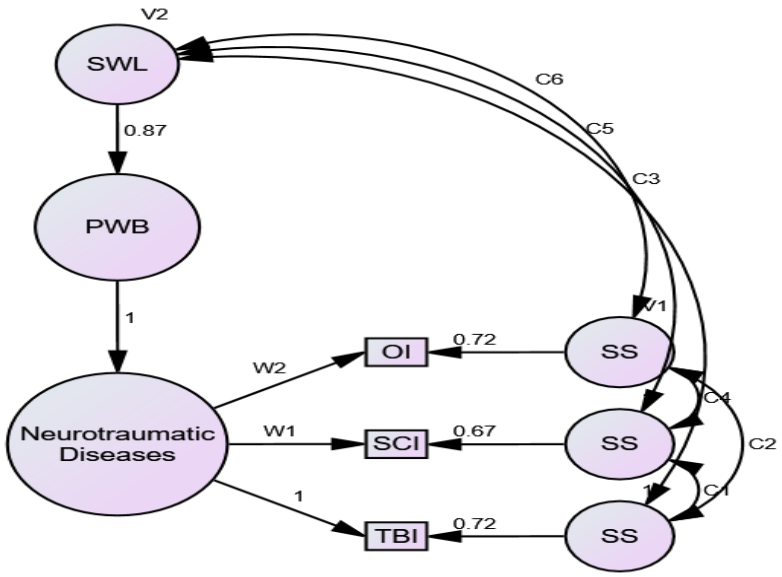


Fig. 1.2 Path analysis of Types of Neurotraumatic diseases (NTD)

Figure 1.2 illustrates Path Analysis (PA) framework exploring the relationships between neurotraumatic diseases, psychological well-being (PWB), satisfaction with life (SWL), and social support (SS). The primary latent construct, Neurotraumatic Diseases, consists of three observed variables: Traumatic Brain Injury (TBI), Spinal Cord Injury (SCI), and Other Injuries (OI). Each of these observed variables contributes significantly to the latent construct, with standardized regression weights of (r=1.0, r=0.67, and r=0.72, respectively. Psychological well-being (PWB) is directly influenced by neurotraumatic diseases, indicating a strong association ($\beta = 1.0$). Furthermore, satisfaction with life (SWL) significantly predicts PWB ($\beta = 0.87$), establishing its role as a key determinant of psychological well-being. The model also examines the effect of social support (SS) as a latent construct, which is measured through multiple observed indicators. Neurotraumatic diseases impact SS through their respective injury categories (TBI, SCI, and OI), with notable path coefficients (TBI → SS = 0.72, SCI → SS = 0.67, and OI → SS = 0.72). The interrelationships among SS indicators are represented by covariance pathways (C1-C6), suggesting strong correlations among them. Additionally, SWL influences SS indirectly, as indicated by the curved covariance pathways linking it to the social support indicators. This suggests that individuals with high level of social support predicts better life satisfaction which in turn could mitigate the negative impact of neurotraumatic diseases on psychological well-being

Hypothesis 2: There is a significant positive relationship between social support, life satisfaction and psychological well-being among patients with neuro-traumatic diseases.

Table 2

Pearson product moment coefficient of correlation analysis for model variables among patients with neuro-traumatic diseases (N=120)

Variables	1	2	3

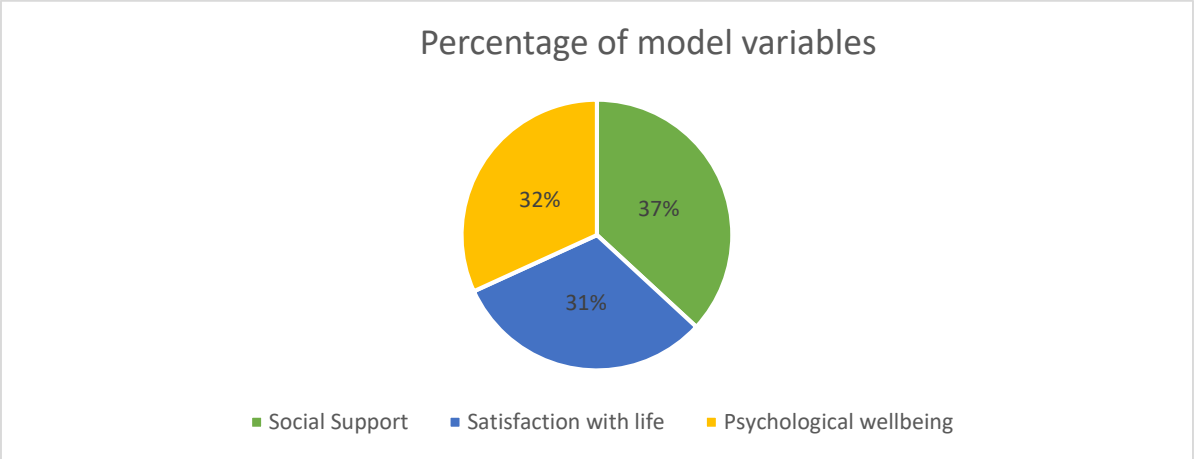
SWLS	-	.61	.72
PSSS	-	-	. 63
PWB	-	-	-

Note: ** p < 0.01

The Pearson product-moment correlation analysis for the model variables among patients with neuro-traumatic disease (N = 120) is presented in the table. Analysis explores the relationship among Satisfaction with Life (SWL), Perceived Social support (PSSS) and Psychological Well-being (PWB). The correlation between social support and Satisfaction with Life (SWL) is (r=.61, p < 0.01), indicating a moderate positive relationship. This suggests that asocial support increases satisfaction with life also increases in this population. The correlation between Social support and Psychological Well-being (PWB) is (r=.72 p < 0.01), showing a high relationship. With an increase in social support, psychological wellbeing also increases that is a depiction of healthy life style in the form of psychological wellbeing. This correlation is also statistically significant, confirming that the relationship is meaningful.

Summary

The Pearson correlation analysis reveals significant positive relationships between satisfaction with life, social support and psychological well-being among patients with neuro-traumatic diseases. All correlations are statistically significant (p < 0.01), providing strong evidence for these positive associations in the study population.



Pie Chart 1 The pie chart illustrates the proportionate contributions of Social Support (37%), Psychological Well-Being (32%), and Satisfaction with Life (31%) in the study. While the chart visually represents the distribution of these factors, it does not directly convey correlation values.

Table 2.1 ***Regression analysis summary for SWL, PSS, and PWB (N=120)***

Variables	B	95% CI	B	T	P
Constant	8.50	(5.41, 11.58)		5.46	.000
SWL	5.46	(.15, .26)	.61	7.45	.000
Constant	99.54	(81.42, 117.66)		10.90	.000
PWB	.98	(.65, 1.30)	.72	5.96	.000

Table 1.2 presents regression analysis to examine the predictive relationship between Satisfaction with Life (SWL), Psychological Well-Being (PWB), and Social Support (PSS).

At first the regression model explained Satisfaction with Life (SWL) as a predictor, was found to be statistically significant, $t(118) = 7.45$, $p < .001$. The unstandardized regression coefficient (B = 5.46, 95% CI .15, .26) indicates that for each unit increase in SWL, psychological well-being increases by approximately 5.46 units. The beta coefficient ($\beta = .61$) suggests a strong positive predictive relationship between SWL and psychological well-being. Moreover, the regression model, assessed Psychological Well-Being (PWB) as a predictor, was also statistically significant, $t(118) = 5.96$, $p < .001$. The unstandardized coefficient (B = .98, 95% CI .65, 1.30) demonstrates that for each unit increase in PWB, the dependent variable increases by .98 units. The beta coefficient ($\beta = .72$) suggests a strong positive relationship between PWB and the dependent variable.

Model Significance

The constant terms represent the baseline levels of Social Support when both SWL and PWB are at zero. These constants were found to be statistically significant, with p-values of **< .001, ** indicating that the model effectively predicts Social Support. The 95% confidence intervals for the coefficients provide a plausible range of values, ensuring that the relationships identified in the study are robust and reliable.

Summary

Overall, these findings suggest that higher levels of Satisfaction with Life and Psychological Well-Being are significant predictors of greater Social Support**,** emphasizing the importance of mental and emotional factors in shaping social connections and perceived support.

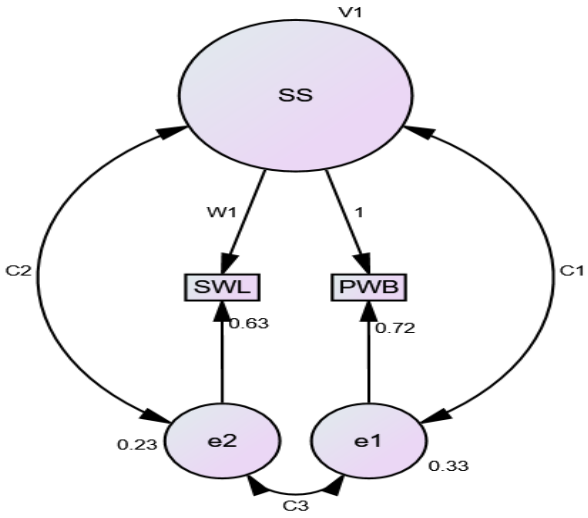
Hypothesis 3: Social Support mediates the relationship between psychological wellbeing and satisfaction with life among patients suffering from neuro-traumatic diseases.

Table 3 *Social support as a mediator between Social support, psychological wellbeing and satisfaction with life* (N=120)

							95% CI	
Variable			**Est**	**S.E**	**Z value**	**P**	**CL**	**CU**
SS	→	PWB	0.33	0.05	6.17	.001	0.23	0.43
SS	→	SWL	0.23	0.005	2.63	.001	0.21	0.33

Note. SS=Social support, PWB=Psychological wellbeing, SWL =Satisfaction with life p<.05, p<.01 and p<.00

The mediation analysis examined the role of Psychological Well-Being (PWB) in the relationship between Social Support (SS) and Satisfaction with Life (SWL) among patients with neuro-traumatic diseases. The results indicate that Social Support significantly predicts Psychological Well-Being (B = 0.33, SE = 0.05, Z = 6.17, p = .001, 95% CI 0.23, 0.43), suggesting that individuals with higher levels of social support experience greater psychological well-being. Furthermore, Social Support also has a direct effect on Satisfaction with Life (B = 0.23, SE = 0.005, Z = 2.63, p = .001, 95% CI 0.21, 0.33), indicating that individuals receiving social support tend to report higher life satisfaction. The strong effect size of the mediation pathway further emphasizes the importance of psychological well-being in facilitating the positive influence of social support on overall life satisfaction. These results align with previous research emphasizing the biopsychosocial model**,** which posits that psychological and social factors play a crucial role in shaping well-being outcomes. In conclusion, the study highlights the critical role of social support in improving life satisfaction, both directly and through the enhancement of psychological well-being**,** underscoring the need for social interventions aimed at fostering psychological resilience among patients suffering from neuro-traumatic diseases.



FFig 1.1 Mediation model of Social support with Psychological wellbeing and satisfaction with life among patients with neurotraumatic diseases

Figure 1.1 depicts the structural equation model (SEM) presented in the figure illustrates the relationship between social support (SS), satisfaction with life (SWL), and psychological well-being (PWB), incorporating associated error terms. The latent variable, SS, represents an unobserved construct that influences the observed variables SWL and PWB. Arrows extending from SS to these variables indicate direct effects, with standardized path coefficients of 0.63 and 0.72, respectively, suggesting a significant positive relationship between social support and both life satisfaction & psychological well-being. Additionally, an unstandardized path coefficient of 1 from SS to PWB may indicate a fully mediated or standardized effect. Error terms (e1 and e2) account for unexplained variance in PWB and SWL, with error variances of 0.33 and 0.23, respectively. Curved double-headed arrows labeled C1, C2, and C3 suggest correlations among variables or error terms. Overall, the model supports the hypothesis that social support significantly contributes to well-being outcomes, consistent with existing psychological and sociological theories on the positive effects of social support on life satisfaction.

DISCUSSION

The findings of the present study contribute to the growing body of literature on the relationship between social support, psychological well-being, and life satisfaction among individuals with neurotraumatic diseases. The first hypothesis, which proposed significant differences in social support, psychological well-being, and life satisfaction based on demographic factors such as age, gender, and socioeconomic status, was supported. The path analysis model illustrated that individuals in joint family systems (JFS) experience higher psychological well-being as compared to those in nuclear family systems (NFS), with a standardized path coefficient of 0.87. This finding aligns with previous research suggesting that extended family structures provide greater emotional and instrumental support, leading to improved mental health outcomes (Haque et al., 2021). Conversely, life satisfaction was more strongly associated with the nuclear family system (B = 0.56), indicating that individuals in nuclear family settings may experience a greater sense of autonomy and personal fulfillment, which has been linked to higher life satisfaction (Singh & Kiran, 2020). Moreover, social support emerged as a central latent construct influencing both psychological well-being and life satisfaction, highlighting its mediating role in familial and financial security. This result is consistent with the social support theory, which posits that strong social networks buffer the negative effects of stress and contribute to enhanced psychological resilience (Cohen & Wills, 1985). Additionally, the strong correlation between psychological well-being and life satisfaction (C3 covariance link) reinforces the argument that these two constructs are interrelated dimensions of overall mental health, consistent with Diener et al.'s (2017) conceptualization of subjective well-being. The second hypothesis, which examined the positive relationship between social support, psychological well-being, and life satisfaction among patients with neurotraumatic diseases, was also supported. Pearson correlation analysis revealed a significant relationship between social support and satisfaction with life ($r = .61$, $p < .01$) and between social support and psychological well-being ($r = .72$, $p < .01$). These findings corroborate previous studies that have found social support to be a crucial determinant of psychological well-being, particularly among individuals with chronic illnesses (Turner & Brown, 2018). Social support has been shown to facilitate coping mechanisms, reduce perceived stress, and improve mental health outcomes, particularly for patients with long-term health conditions such as traumatic brain injury and spinal cord injury (Simpson & Tate, 2019). The significant positive relationship between social support and psychological well-being also aligns with the biopsychosocial model, which emphasizes the interaction of biological, psychological, and social factors in determining health outcomes (Engel, 1977). Regression analysis further confirmed the predictive power of social support and psychological well-being in determining life satisfaction. The model revealed that satisfaction with life was a significant predictor of psychological well-being (B = 5.46, 95% CI .15, .26, $p < .001$), supporting the notion that individuals who perceive their lives as fulfilling tend to experience greater emotional stability and mental health (Lyubomirsky et al., 2005). Similarly, psychological well-being was a strong predictor of social support (B = 0.98, 95% CI .65, 1.30, $p < .001$), underscoring the reciprocal nature of these variables. These results highlight the importance of fostering supportive environments for individuals with neurotraumatic diseases, as social integration and emotional support have been consistently linked to better health outcomes (Holt-Lunstad et al., 2010). The third hypothesis tested the mediating role of social support in the relationship between psychological well-being and life satisfaction. Mediation analysis indicated that social support significantly predicted psychological well-being (B = 0.33, SE = 0.05, Z = 6.17, $p = .001$, 95% CI 0.23, 0.43) and life satisfaction (B = 0.23, SE = 0.005, Z = 2.63, $p = .001$, 95% CI 0.21, 0.33), suggesting that social support acts as a crucial pathway through which psychological well-being enhances life satisfaction. This finding aligns with previous research emphasizing the importance of social connectedness in shaping mental health outcomes (Thoits, 2011). The structural equation model further supported this mediation effect, indicating that social support significantly contributes to both life satisfaction and psychological well-being. These findings have important implications for psychological interventions aimed at improving the well-being of individuals with neurotraumatic diseases. Given the strong impact of social support on mental health, healthcare

providers should prioritize social integration strategies, including family involvement in care, peer support programs, and community engagement initiatives. Additionally, the findings highlights the need for policies that promote financial and job security for individuals with chronic illnesses, as these factors indirectly influence life satisfaction through social support mechanisms. Future research should explore longitudinal data to establish causal relationships and examine potential moderating factors such as cultural differences, coping styles, and resilience levels in shaping psychological well-being among neurotrauma patients.

CONCLUSION

In Sum, the present study examined the relationships between psychological well-being, social support, and life satisfaction among individuals with neurotraumatic diseases, considering the influence of demographic factors and family structures. The findings provide compelling evidence that psychological well-being and satisfaction with life are significantly associated with social support. Specifically, individuals in joint family systems exhibited higher levels of psychological well-being, while those in nuclear family systems reported greater life satisfaction. Additionally, the mediation analysis confirmed that social support serves as a crucial factor in enhancing both psychological well-being and life satisfaction, further reinforcing the interconnectedness of these variables. The path analysis models provided strong statistical support for these relationships, demonstrating the importance of social factors in shaping mental health outcomes for individuals with neurotraumatic conditions.

STUDY IMPLICATIONS

Theoretical Implications

Current findings contributes to the existing body of literature on health psychology by integrating the biopsychosocial model and positive psychology perspectives. The findings support the notion that social support serves as a protective factor against the negative psychological consequences of neurotraumatic diseases, aligning with previous research indicating that strong social networks enhance resilience and well-being (Cohen & Wills, 1985; Uchino, 2006). Moreover, the results explained the interdependence between psychological well-being and life satisfaction, reinforcing theoretical frameworks such as Diener's (1984) subjective well-being model, which posits that life satisfaction and emotional well-being are fundamental components of overall mental health. By demonstrating that social support mediates the relationship between psychological well-being and life satisfaction, the study provides empirical support for Lazarus and Folkman's (1984) stress and coping theory, which highlights the role of social resources in managing psychological distress.

Practical Implications

Present study highlights the necessity of social interventions aimed at enhancing psychological well-being among individuals with neurotraumatic diseases. Healthcare professionals, including psychologists and rehabilitation specialists, should prioritize fostering social support networks to improve patient outcomes. This can be achieved through structured social support programs, peer counseling groups, and family involvement in rehabilitation processes. Additionally, policymakers should recognize the role of social determinants in mental health and implement community-based interventions that strengthen social ties for individuals with chronic illnesses. Furthermore, the findings emphasize the importance of tailored psychological interventions that address both individual and social factors contributing to well-being. Cognitive-behavioral therapy (CBT) and other therapeutic approaches that incorporate social support mechanisms may prove particularly effective in enhancing psychological resilience among neurotrauma

patients (Anderson et al., 2011). Moreover, given the differences observed between joint and nuclear family systems, culturally sensitive interventions should be developed to accommodate diverse family structures, ensuring that individuals receive appropriate support based on their social contexts. In conclusion, the study provides valuable insights into the role of social support in promoting psychological well-being and life satisfaction among individuals with neurotraumatic diseases. By bridging theoretical perspectives with practical applications, these findings offer a foundation for future research and interventions aimed at improving the quality of life for this vulnerable population.

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