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LEVEL OF RESILIENCE AND ASSOCIATED FACTORS AMONG NURSES WORKING IN A PUBLIC TERTIARY CARE HOSPITAL IN PAKISTAN

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ABSTRACT

Background: *The nursing profession faces significant challenges globally, with work-related adversities increasingly affecting nurses' mental health and performance. Failure to adapt and cope with challenges like increased workload, staff shortages, lack of appreciation, and workplace abuse can result in mental health problems among nurses. The World Health Organization has identified job-related stress as a major global concern affecting individuals' mental wellbeing. Resilience plays a protective role in maintaining nurses' mental health and mitigating the effects of work-associated stress. While nurses in Pakistan face similar challenges as their global counterparts, limited research exists on resilience levels and associated factors in this context.*

Purpose: *This study aimed to determine the level of resilience and identify factors associated with resilience among nurses working in a public tertiary care hospital in Islamabad, Pakistan. The research sought to understand both the current state of nurses' resilience and the key factors that influence it within the Pakistani healthcare context.*

Methodology: *An analytical cross-sectional study design was employed at a public tertiary care hospital in Islamabad with 854 registered nurses. Data was collected from 323 nurses through simple random sampling, achieving a 94% response rate. The study utilized two validated instruments: the Connor Davidson Resilience Scale (CD RISC-25) to measure resilience and the Perceived Stress Scale (PSS-10) to assess stress levels. The CD RISC-25 measured resilience across seven domains: hardiness, coping, flexibility, purpose, optimism, self-efficacy, and regulation of emotions. Content validity was established through expert panel review, with both instruments showing high validity indices. Data analysis included descriptive statistics and ordinal logistic regression to identify factors associated with resilience.*

Results: *The study revealed that the majority of nurses demonstrated moderate levels of resilience (47.7%), while 26.3% showed low resilience and 26% exhibited high resilience. The mean perceived stress score was 20.3 (±5.7), indicating moderate stress levels. Significant associations were found between resilience and several key factors: perceived stress ($p<0.001$), physical abuse at the workplace ($p=0.025$), social support from family*

and friends (p=0.005), mental health status (p<0.001), and support for household chores (p=0.04). The regression model demonstrated good fit and explained 23.7% of the variance in resilience levels. The study also identified concerning rates of workplace abuse, with 39% of participants reporting various forms of abuse including verbal (35.9%), psychological (32.2%), and physical (13.3%) from patients, their families, and colleagues.

Conclusion: *The findings highlight that nurses' resilience is significantly influenced by both workplace factors and psychosocial support systems. The predominance of moderate resilience levels suggests room for improvement through targeted interventions. The study underscores the importance of creating safe working environments and providing organizational support to enhance nurses' resilience. Mental health support through resilience training programs and education appears crucial for improving nurses' adaptive capabilities.*

Implications: *Healthcare organizations need to implement comprehensive support systems that address workplace stress and safety while promoting mental wellbeing among nurses. This includes developing clear policies for handling workplace conflicts, ensuring adequate staffing levels, and establishing formal mentoring programs. The findings suggest that enhancing social support systems and addressing work-life balance could significantly improve nurses' resilience. Future research should explore these relationships through longitudinal and multi-center studies to better understand causality and develop effective interventions.*

Strengths and Limitations:*The study's strengths include its novel contribution to understanding resilience in Pakistan's healthcare context, high response rate, and use of internationally validated tools. However, the single-study setting may limit generalizability, and self-reported data may be subject to reporting bias. Despite these limitations, the findings provide valuable insights for improving nurses' resilience in healthcare settings.*

Keywords: *resilience, nurses' resilience, workplace stress, mental health, healthcare workers, Pakistan healthcare system*

INTRODUCTION

Nursing is an integral component of the healthcare delivery system globally. The unique characteristics of the nursing profession make it a highly stressful job, as nurses regularly witness debilitating injuries and pain while facing complex working conditions (1,2). These conditions include staff shortages, extended shifts, insufficient resources, ambiguous organizational policies and procedures, and high demands for patient care (3).

These demanding circumstances can result in constant fatigue and exhaustion, moral suffering, burnout and compassion fatigue among nurses, which in turn affect their standards of professional conduct and lead to unsatisfied patient care, rescue failure, and higher patient mortality (4-8). Nursing professionals develop mental health problems due to disruptions in interpersonal relationships, lack of social support, as well as professional dissatisfaction (7).

Mental health problems lead to impaired performance and judgment, and a negative attitude towards work (9). The World Health Organization (WHO) has highlighted the importance of healthcare workers' mental well-being and addressed the role of job-related stress as a significant global concern affecting individuals' mental health (10). As a result of job-related stress, nurses' performance gets affected and they provide inadequate patient care (11).

Increased level of stress and inability to cope with daily stressors results in a decreased drive to work, intention to quit the profession, exhaustion and poor quality of care delivered by nurses (12,13). Besides this, organizational factors such as workload, lack of support, shortage of staff, low income or high nurse-patient ratio lead to burnout among nurses (6-8,14,15). Burnout is related to physical and mental exhaustion as a result of unsuccessful coping against adversities, but it can be prevented by increasing resilience, which acts

as a protector against burnout (16-18). Resilience has a positive relationship with quality of work life, reduces burnout and improves job satisfaction (19).

An employee's job satisfaction depends on how well they approach work tasks and accomplish them in a collaborative manner, as well as how they achieve a sense of success (11). Resilience improves the ability to face realities and adversities with a positive outcome by sustaining healthy engagement to work (20). Resilience strengthens the adaptive abilities of nurses to serve well and provide quality nursing care to patients (21). Having a higher level of resilience provides the capability to adapt and modify accordingly to ill events and their occurrences in the future (6,22).

Resilience is defined by the American Psychological Association as a "process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands." It is a dynamic and active progression which helps people to cope with the hardships of life and promotes a rapid recovery (23,24). It also helps to survive emotional tiredness and psychological stress (25,26). Similarly, it establishes a successful comeback from disruptive events while maintaining physical, psychological, and spiritual equilibrium (27). In general, resilience is a composite of skills and expertise to adjust in a progressive manner after experiencing challenging situations (28).

Nurses in Pakistan face the same challenges as those in other parts of the world (7). Along with these challenges, they are fighting with the distress of less recognition and support from society (29). Furthermore, they are exposed to workplace bullying, which affects their job performance, and they develop mental health problems (30). Some studies in Pakistan have explored factors related to job burnout and job satisfaction (13,31,32), but very few studies have investigated the important aspect of resilience (33,34). Factors affecting the level of resilience among nurses still remain unexplored in the context of Pakistan.

This study aims to assess the level of resilience and associated factors among nurses working in a public hospital in Pakistan. As this is a novel study to be conducted in the Pakistani context about nurses' resilience, it will provide basic knowledge about resilience levels among nurses working in tertiary care hospitals in Pakistan. The study may also highlight positive and negative factors associated with resilience. Based on the study findings, strategies can be devised to improve the mental health of nurses.

The purpose of this study is to determine the level of resilience and identify factors associated with resilience among nurses working in a public hospital in Islamabad, Pakistan. The study aims to answer two key research questions: 1) What is the level of resilience among nurses working in a public sector tertiary care hospital in Islamabad? and 2) What are the factors associated with the level of resilience among nurses working in a public sector tertiary care hospital in Islamabad?

Literature Review

The concept of resilience first appeared in English literature in the early 17th century, derived from the Latin word "resilire" meaning to rebound or recoil (1). The conceptualization of resilience began in the 1970s through the work of Norm Garmezy, who suggested that resilience should not be equated with positive psychology or competency alone (2).

Defining Resilience

Resilience emerges in the literature as a multidimensional and complex concept encompassing adaptability, determination, positive coping, and problem-solving attitudes (3-6). Recent research describes resilience as a dynamic process involving successful coping through modification of thought processes and reasoning (7). The ongoing scholarly debate centers on whether resilience represents an innate ability or a learned process of coping (8-11). Evidence suggests that resilience develops through personal characteristics and responses to stressful events, while some researchers propose that resilience is a trait that can be developed by modifying behaviors, actions, and thoughts regarding traumatic situations (6,12,13).

Key Components of Resilience

The literature identifies several essential elements that characterize resilience. Adversity serves as the initiating factor that triggers the resilience process (14). Confidence, manifesting as self-belief and willpower, helps individuals withstand challenges (3,15). Self-control enables individuals to tackle harmful situations while maintaining composure (16-18). Optimism enhances adaptation chances and minimizes burnout risk (13,16,19). Flexibility allows for behavioral modification in response to difficult situations (20), while the ability to recuperate enables individuals to regain their normal state after problematic events (3).

Resilience in Nursing Practice

Research consistently shows that resilience serves as a significant resource for nurses, helping them rebound and maintain normal functioning after traumatic experiences (21,22). Despite facing various challenges, resilient nurses demonstrate remarkable intelligence, confidence, ingenuity, and flexibility (19,23-25). Studies indicate that frequent exposure to problematic situations and stress can lead to exhaustion and burnout among nurses (16,26,27). However, resilience helps improve coping abilities, maintain quality of life, and sustain health (6,28,29).

Contributing Factors to Nurse Resilience

The literature identifies multiple factors affecting nurses' resilience levels. Personal characteristics such as age, education, experience, and nationality influence resilience levels (30-33). Studies have found significant positive associations between age and resilience, though some research disputes this connection (34). Higher education levels and increased years of experience generally correlate with higher resilience levels (35,36).

Professional and organizational factors significantly impact resilience. Workplace environment, increased workload, lengthy shifts, lack of organizational support, and staff shortages can negatively affect resilience (37). Studies have demonstrated that job-related stressors can lead to mental health problems including stress, anxiety, depression, burnout, fatigue, and post-traumatic stress disorder (16,21,26,38-40).

Social support emerges as a crucial factor, with studies showing that support from family, friends, and colleagues enables nurses to cope better with work-related problems (41-44). The literature emphasizes that close relationships help nurses maintain stability and positive engagement in their practical lives.

Strategies for Building Resilience

Research identifies various strategies that nurses employ to build resilience, including psychological firmness, detachment, support, cognitive reframing, integration, self-control, and critical analysis of situations (14,20,27). Studies show that nurses develop psychological firmness and cognitive reframing through modification after repeated experiences with unfavorable conditions. Social support from family, friends, and colleagues enables better coping with work-related problems, though the exact mechanism remains unclear (41,45,46).

Gaps in Current Research

While extensive research exists on resilience in developed countries, limited literature addresses resilience among nurses in developing countries like Pakistan. Several studies have highlighted issues faced by nurses in Pakistan including workload, burnout, and poor work environments (47-50). However, research investigating coping strengths and resilience factors among Pakistani nurses remains scarce (51,52). This gap in the literature provides impetus for exploring resilience levels and associated factors among nurses working in Pakistan's healthcare system.

The reviewed literature demonstrates that resilience is crucial for nurses' wellbeing and professional performance. Understanding the factors that influence resilience, particularly in understudied contexts like Pakistan, can inform interventions to support nurses' mental health and improve healthcare delivery. Future research should focus on developing and evaluating specific interventions aimed at enhancing nurses' resilience in various healthcare settings.

Methodology

Study Design and Objectives

An analytical cross-sectional study design was employed as it allows data collection at one point in time and enables determination of associations between variables. The study aimed to determine the level of resilience and identify factors associated with resilience among nurses working in a public hospital in Islamabad, Pakistan.

Study Setting and Population

The study was conducted in a public tertiary care hospital in Islamabad with a bed capacity of 592 and 854 registered nurses. This setting provides both therapeutic and diagnostic services to Pakistan's federal area and accepts referral patients from other provinces. The accessible study population consisted of registered nurses providing direct patient care and performing managerial tasks across different departments including intensive care units (ICU), wards, operating rooms (OR), Emergency and outpatient departments (OPDs).

Eligibility Criteria

The inclusion criteria specified registered nurses with more than one year of experience who were providing direct patient care or performing managerial tasks in patient care areas. Nurses with acute physical problems (such as COVID-19 or accidental trauma) and those under treatment for diagnosed mental illness were excluded from the study.

Sample Size and Sampling Technique

The sample size was calculated using the formula:

$n = (Z^2\sigma^2)/E^2$

Where Z = 1.96 for 95% confidence level, σ = standard deviation from a previous Iranian study (7.11), and E = desired margin of error. The calculated sample size was 312, which was adjusted for a 10% non-response rate to reach 343 participants. Simple random sampling was used to recruit participants. A sampling frame was obtained from nursing administration, from which the desired sample was selected using computer-generated random numbers.

Data Collection Tools

Two standardized instruments were used:

1. Connor Davidson Resilience Scale (CD-RISC-25):

This globally adopted tool measures resilience across seven domains: hardiness, coping, flexibility, purpose, optimism, self-efficacy and regulation of emotions. The 25-item scale uses a 5-point Likert scale (0 = not true at all to 4 = true nearly all the time). Scores range from 0-100, with higher scores reflecting greater resilience. The scale has been validated in Pakistan with adequate reliability (Cronbach's alpha 0.84).

2. Perceived Stress Scale (PSS-10):

This self-report scale measures individuals' stress levels through 10 items rated on a five-point scale from never (0) to very often (4). Scores range from 0-40, with higher scores indicating higher perceived stress. The scale demonstrates good psychometric properties with Cronbach's alpha ranging from 0.70 to 0.89 across nations.

Validity and Reliability

Content validity was established through a panel of five experts including two mental health education experts, two mental health nursing experts, and one psychologist. The CD RISC-25 showed an Item-level Content Validity Index (I-CVI) of 0.97 while PSS-10 showed an I-CVI of 1.0. The Scale-level Content Validity Index (S-CVI) was 1.0 for both instruments. Pilot testing was conducted on 5% of the sample size (18 participants) with no major issues identified.

Data Collection Process

Following institutional review board approval, computer-generated random sampling was used to select participants. Department nursing heads were approached to identify selected participants' locations and timing. Participants were contacted during convenient times (tea breaks, off-duty hours) for written consent and questionnaire completion. Each questionnaire took 30-35 minutes to complete. Of 343 selected participants, 323 completed the questionnaires (94% response rate).

Data Analysis

Data was analyzed using SPSS version 22 in two steps:

1. Descriptive Analysis:

All categorical variables were analyzed as frequency counts and percentages.

2. Inferential Analysis:

Resilience levels were categorized as low, moderate and high based on Inter Quartile Range (IQR). Ordinal logistic regression analysis was conducted to determine factors associated with resilience after checking assumptions. Multiple models were run to check associations between independent and dependent variables. Variables demonstrating interaction were included in the final model regardless of significance.

Ethical Considerations

The study received IRB approval (IRB#0103-22) and permission from department heads. Written informed consent was obtained from all participants. Confidentiality was maintained through coding of participants and secure storage of data. No potential risks were identified beyond time commitment for data collection.

This methodology enabled systematic investigation of resilience levels and associated factors among nurses while maintaining scientific rigor and ethical standards. The use of validated tools, random sampling, and appropriate statistical analyses strengthened the study's internal and external validity.

RESULTS

Demographic Characteristics

The study achieved a high response rate of 94%, with 323 complete responses received from 342 distributed questionnaires. The demographic profile revealed that the majority of participants were females (79.4%) and nearly half (45%) were aged between 31-40 years. Most participants (80%) were married. In terms of educational qualifications, 39.3% had completed intermediate education, while professionally 39% held a diploma in nursing. A significant proportion (55.8%) had undergraduate nursing degrees, comprising 44% with Post RN BScN and 11.8% with BSN degrees. A small percentage (5%) had achieved master's degrees in nursing.

Socioeconomic Status and Family Structure

The socioeconomic analysis showed that most participants (57.3%) had employed spouses and reported family income above 100,000 PKR (39.9%). Among married participants, approximately 57% had three or fewer children. Family dependency patterns indicated that nearly 80% of participants had four or fewer dependents. The majority of participants (65.9%) identified as Punjabi ethnically, and 40.6% owned their residences.

Professional Profile and Work Environment

In terms of professional roles, approximately 75% of participants worked as registered nurses providing direct patient care. The department distribution showed varied placement across the hospital, with 24% working in Intensive Care Units, 15.8% in Operating Rooms, 13.3% in Emergency and Accident Center, 41.5% in inpatient departments, and 5.6% in outpatient departments. Employment status revealed that the

majority (84.5%) were regular employees, and a significant portion (31.6%) had accumulated more than 16 years of experience.

Table 1: *Demographic Characteristics of Participants*

Demographics	Frequency (n)	Percentages (%)
Age of Participants		
20-30 years	77	23.8
31-40	143	44.3
41-50	85	26.3
51-60	18	5.6
Gender		
Male	81	25.1
Female	242	74.9
Marital Status		
Single	68	21.1
Married	242	74.9
Divorced	9	2.8
Other(widowed/separated	4	1.2
Academic Qualification		
Matriculation	78	24.1
F. A/F. Sc	127	39.3
B.A/B. Sc	98	30.3
M.A/MSc	20	6.2
Professional Qualification		
Diploma in Nursing	126	39.0
Post RN BSc N	142	44.0
BSN	38	11.8
MSN	11	3.4
Other(e.g MPH)	6	1.9
Spouse Employment Status		
Not Applicable	67	20.7
Employed	185	57.3
Unemployed	23	7.1
Other (Pvt bussiness)	46	14.2
Average Family Income		
40,000-50,000	28	8.7
60,000-70,000	69	21.4
80,000-100,000	96	29.7
Above100,000	129	39.9
Number of Children		
No kids	48	14.9
1	44	13.6
2	80	24.8
3	45	13.9
4	38	11.8
5	1	.3
Not Applicable	67	20.7
Number of Dependent		
0	49	15.2
1	16	5.0

2	68	21.1
3	58	18.0
4	61	18.9
5	36	11.1
≥6	34	10.4
Ethnicity		
Others	15	4.6
Punjabi	213	65.9
Sindhi	40	12.4
Pukhtoon	55	17.0
Residential Status		
Personal	131	40.6
Rented	76	23.5
Hired	101	31.3
Allotted	15	4.6
Participant Working as		
RN	242	74.9
Nurse In charge	49	15.2
Head Nurse	32	9.9
Working Department		
ICU	77	23.8
OR	51	15.8
EAC	43	13.3
WARD	134	41.5
OPD	18	5.6
Type of Employment		
Regular	273	84.5
Contract	29	9.0
Deputation	9	2.8
Other	12	3.7
Job Experience		
1-5 years	94	29.1
6-10 years	45	13.9
11-15 years	82	25.4
>16 years	102	31.6

Note :> means greater

Health and Lifestyle Patterns

The health and lifestyle assessment revealed that a high proportion (87.6%) reported an active nature of daily living, though only 34% exercised occasionally. Sleep patterns showed that nearly half (48%) reported getting 8 hours of sleep daily. Health status evaluation indicated that most participants (72.1%) reported adequate physical and mental health. The most prevalent comorbidities were hypertension (9.6%) and diabetes (7.7%). A noteworthy finding was that about 40% reported using non-prescribed medicines during illness.

Table 2: *Health and Lifestyle Variables*

Variables	Frequency (n)	Percentage (%)
Nature of Daily Activity		
Active	283	87.6
Sedentary	40	12.4

Exercise Routine		
Daily	69	21.4
Weekly	65	20.1
Occasionally	111	34.4
Never	78	24.1
Sleeping Hours		
>8 hours	52	16.1
8 hours	155	48.0
6 hours	94	29.1
< 6 hours	22	6.8
Leisure Time		
Always	33	10.2
Often	129	39.9
Never	161	49.8
Physical Health		
Adequate	233	72.1
Moderate	80	24.8
Poor	10	3.1
Mental Health		
Adequate	233	72.1
Moderate	71	22.0
Poor	19	5.9
Any Co-morbidity		
None	240	74.3
Hypertension	31	9.6
Diabetes	25	7.7
Others	3	.9
Use of Non-Prescribed Medicines	4	1.2
Yes	1	.3
No	4	1.2
Active	9	2.8
Sedentary		
Exercise routine	129	39.9
Daily	194	60.1

Workplace Challenges and Support Systems

The analysis of workplace dynamics revealed that while 82.4% enjoyed working in their organization, they faced significant challenges. Workplace abuse was reported by 39% of participants, manifesting as verbal abuse (35.9%), psychological abuse (32.2%), physical abuse (13.3%), and sexual abuse (2.8%). The sources of abuse were identified as patient families (31%), patients (28.8%), and co-workers (22.3%). Regarding workload, 28% reported nurse-patient ratios between 1:6 to 1:10, with some (5.6%) handling more than 30 patients.

Table 3: *Social Support Variables*

Spouse Support for job	**Frequency (n)**	**Percentage (%)**
Not applicable	59	18.3
Yes	222	68.7
No	42	13.0
Support from Family/friends		

Yes	271	83.9
No	51	15.8
Support for Households		
Yes	227	70.3
No	96	29.7
Support for Childcare		
Not Applicable	66	20.4
Yes	182	56.3
No	75	23.2

Resilience and Stress Analysis

The assessment of resilience levels using the Connor-Davidson Resilience Scale revealed a distribution across three categories: low resilience (0-62 scores) at 26.3%, moderate resilience (63-82 scores) at 47.7%, and high resilience (83-100 scores) at 26%. The mean perceived stress score was 20.3 (±5.7), indicating moderate stress levels among participants.

Table 4: ***Perceived Stress***

Variable	Mean	St. Deviation
Perceived stress	20.3	±5.7

Regression Analysis Findings

The ordinal regression analysis identified significant associations between resilience and several key factors. Perceived stress ($p < 0.001$), physical abuse ($p = 0.025$), family and friends support ($p = 0.005$), mental health status ($p < 0.001$), and support for household chores ($p = 0.04$) emerged as significant predictors of resilience. The model demonstrated good fit (Pearson $\chi^2 = 423.635$, $p = 0.210$; Deviance $\chi^2 = 411.393$, $p = 0.349$) and explained 23.7% of the variance in resilience levels. The Test of Parallel Lines was non-significant ($p > 0.05$), confirming the consistency of relationships between thresholds.

Table 5: *Ordinal Regression Model*

			95% Confidence Interval	
Variables	Estimate	Sig.	Lower Bound	Upper Bound
Perceived Stress	0.071	0.000	0.031	0.110
Physical Abuse	-0.729	0.025	-1.365	-0.094
Family and Friends Support	0.962	0.005	1.637	0.286
Mental Health Status	1.088	0.000	1.537	0.639
Support for the Household Chore	0.540	0.040	1.056	0.024

DISCUSSION

This study provides novel insights into the resilience levels and associated factors among nurses working in a tertiary care hospital in Pakistan. The findings reveal several important patterns and relationships that warrant detailed discussion.

Resilience Levels

The study found that almost half of the participants (48.8%) demonstrated moderate resilience under IQR (Interquartile range 63-82%), aligning with findings from recent studies (1-4). This moderate resilience level is particularly noteworthy given that the study population had already experienced the COVID-19 pandemic, which may have strengthened their resilience capabilities. These findings align with global studies conducted during the pandemic period (5). However, the results contrast with findings from neighboring India, where nurses reported predominantly high resilience levels ranging between 80-100 (6).

Demographic Factors and Resilience

Contrary to previous research (7-10), this study found no significant relationship between resilience and participants' age. Furthermore, the study did not identify significant associations between resilience and factors such as gender, marital status, job experience, education, higher average income, or exercise routine. These findings align with Cooper et al.'s literature review (11), though they contrast with Ang et al.'s findings (8) of significant associations between experience, marital status, and resilience. These inconsistencies in the literature might be attributed to cultural or contextual differences (12).

Psychosocial Factors

The study revealed significant associations between nurses' perceptions of their mental health, perceived stress, and resilience levels. A notable finding was the prevalence of workplace violence, with participants reporting abuse from patients (28.8%), patient's family members (31%), and colleagues (22.3%). These findings align with previous evidence linking workplace abuse to mental health problems like depression, anxiety, and post-traumatic stress disorder (13).

The study found verbal abuse (36%) to be the most frequent form of workplace violence, while 33% of nurses reported physical abuse. This prevalence is lower than reported in U.S. studies, where physical abuse rates reached 75.4% (14). These findings correspond with Edward et al.'s literature review highlighting verbal abuse as the most frequent form of workplace violence against nurses (15).

Mental Health and Support Systems

The study identified a positive relationship between mental health and resilience, supporting Dehvan's findings (16). This relationship suggests that resilient nurses may be better equipped to use positive emotions strategically in response to stressors (17). Interestingly, the study found a weak positive association between perceived stress and resilience, contrary to most studies reporting negative associations (18-20). This finding might be explained by the curvilinear relationship between stress and resilience, where initial stress increases may trigger coping mechanisms and boost resilience, while prolonged stress eventually diminishes resilience (21).

Social Support and Organizational Factors

Social support from family and friends emerged as a significant positive factor for nurses' resilience, consistent with previous research (22-25). This finding aligns with cultural contexts where social and family support plays a crucial role in coping with life stressors. The study also found that support for household chores was associated with resilience, a novel finding not previously reported in the literature. This may be attributed to the reduced psychological and physical burden allowing nurses to better cope with job-related challenges.

Conclusion

This research has provided valuable insights into the resilience levels of nurses working in Pakistan's public healthcare system and identified key factors influencing their resilience. The findings reveal a noteworthy relationship between nurses' mental health and their resilience levels in public tertiary hospitals. Interestingly, unlike previous research, this study found that nurses demonstrated moderate levels of perceived stress that correlated positively with resilience. The research also uncovered concerning reports of physical abuse that

negatively impacted nurses' resilience and mental wellbeing. The evidence suggests that nurses' resilience can be enhanced through multiple mechanisms, including providing secure working environments, ensuring robust organizational support systems, and facilitating strong social support networks through family and friends. These findings emphasize the critical need for structured resilience training programs and educational initiatives to support nurses' mental health.

Limitations

Several important limitations must be considered when interpreting the study's findings. The single-setting nature of the research, conducted in one tertiary care hospital, potentially limits the generalizability of results to other healthcare contexts within Pakistan. Different hospitals may present varying organizational cultures, resource availability, and challenges that could significantly impact nurses' resilience levels. Additionally, the reliance on self-reported data through questionnaires introduces potential reporting bias, which could lead to over or underestimation of findings, though this was partially mitigated through the use of standardized assessment tools. The cross-sectional design provides only a snapshot of resilience levels at a specific point in time, making it impossible to establish causal relationships between variables or track changes in resilience over time.

Recommendations

Based on the study's findings, several comprehensive recommendations emerge for improving nurses' resilience in healthcare settings. Healthcare organizations should implement robust support systems that focus on maintaining work environments that minimize job-related stress, develop clear policies for handling workplace conflicts, ensure adequate staffing levels, and establish formal mentoring programs. A critical priority should be creating protective work environments where nurses feel safe from abuse and violence, implemented through strict security protocols, clear reporting mechanisms, de-escalation training, and support systems for affected staff. Mental health support should be prioritized through regular screenings, counseling services, stress management programs, and peer support groups.

Future research directions should include multi-center studies across both public and private healthcare settings to compare resilience levels and investigate regional variations. Longitudinal studies are needed to observe causal associations between variables, track changes in resilience over time, and evaluate the effectiveness of interventions. Educational institutions should incorporate resilience training into basic nursing education and develop continuing education programs focused on building resilience and stress management techniques. Healthcare organizations should offer regular workshops on building resilience, provide training on coping strategies, and support ongoing professional development.

At the policy level, healthcare institutions should develop clear guidelines for workplace violence prevention, protocols for addressing workplace stress, and mechanisms for regular assessment of nurses' wellbeing. National healthcare authorities should establish standards for nurse-patient ratios, develop comprehensive workplace safety guidelines, and implement policies to prevent workplace violence. By implementing these recommendations, healthcare organizations can work toward creating more supportive environments that foster resilience among nursing staff, ultimately leading to improved patient care outcomes and greater job satisfaction among nurses.

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