

A Cross-Sectional Study on Resilience and Its Associated Predictive Factors among Nurses in Peripheral Healthcare Centers

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ABSTRACT

Background: Nurses are the core strength of every healthcare team. During many circumstances of direct patient care, they come across difficult situations that need a high level of resilience. The nurses working in peripheral health care centres, with minimum technical facilities need to have strong resilient behavior.

Methods: It is a descriptive cross-sectional study, conducted among a sample of 88 Nurses working in peripheral health care centres of Bagalkot, selected by a non-probability convenient sampling technique. The data regarding predictive factors and socio-demographic factors was collected by structured questionnaire and a resilience scale was used to assess data regarding psychological resilience. Chi-square test, ANOVA and Logistic regression analysis were used to associate psychological resilience with predictive factors.

Results: 25% of nurses had a low level of resilience. Professional experience was found to be a good predictor of resilience ($p < 0.048$; $\alpha = 5\%$).

Conclusion: The findings reveal that nurses working in peripheral health care centres have a moderate level of resilience. These nurses had come across many psychological and stress-filled obstacles. Hence resilience development programmes are necessary for them.

Key-words: Mid-level health care providers. Nurses, Peripheral health care centres, Predictive factors, Resilience

INTRODUCTION

Among healthcare team members, Nurses are the ones who spend maximum time with patients ^[1] and come across many psychological challenges encountered during their service ^[2]. Nurses being a core of the health care team, need to be highly resilient and competent ^[3]. The present study aimed to assess the resilience and their predictive factors among nurses working in peripheral health care centres of Bagalkot.

The healthcare service provided during the outbreak of COVID-19 infection has demonstrated the selfless service delivered by nurses all over the world. Nurses serve in various setups like industries, schools, railway stations, ports etc. though the requirement at every setup ranges from basic health to critical care, but the behaviour of health care servers differs from one set-up to another setup. Nurses have to have resilient behaviour, especially in the case of patient care ^[4].

It has been noted that nurses in all healthcare areas experience some degree of stress due to failure to handle the demands of the patient and their relatives. The problems could be the allocation of more patients or the challenge of reaching prospective patients in remote areas for health promotion and disease prevention. The failure to handle stressful situations can be a prominent

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risk factor for the occurrence of non-communicable diseases and errors in prompt patient care.^[5]

As per the results of a cross-sectional study conducted in a hospital, Mumbai Maharashtra, it was found that neuroticism (the behaviors including emotional instability, anxiety, irritability etc as a response to stressful events) was found to be high among nurses.^[6] many courses have been conducted on resilience improvement among nursing officers and the outcome of these programmes has shown that the quality of patient care is improved with the improvement of resilient behaviour among nurses.^[7]

59% of the health care force is contributed by nurses. Nurses play an important role in direct or indirect patient care. The role of nurses is not only restricted to curative care services but also a large proportion of services concentrate on health promotion, disease prevention and rehabilitation. During adaptation to these challenges experience burnout and stress which harms their psychological functioning.^[8]

Strengthening the stress-handling capacity of the nurses should be the priority in any skill-building programs for health care professionals. Several strategies can be adapted for improving resilience among nurses. There is a need to determine the factors that can improve resilience among nursing professionals. Programs like life skill training, role-playing personality development etc. can be used to strengthen their mental abilities.^[9] The consequences of high levels of stress related to patient care have always been assessed in many research studies.^[10] The peripheral health care centres in India are designed to serve the rural community. The provision of health care is very simple when the population is aware of the importance of health care. However, the health care professionals in rural India face more challenges as people are more reluctant to approach health care and accept consequences. There are enormous healthcare programs offered by the Indian government and state government but the major challenge is to make these facilities reach the needy. Hence these aspects make the working environment more challenging for nurses.

Many studies focus on resilience building among nursing students but there are no studies that focus on resilience building among Nurses. The skills like decision-making, problem-solving, coping with stress, appropriate communication, etc must be enhanced in nurses to strengthen their stress-handling capacity.^[11] It is

necessary to assess the level of resilience of nurses working in peripheral health care centres to know their capacity to deal with daily work-related challenges.

MATERIALS AND METHODS

Study design- It was a cross-sectional study among nurses working in peripheral health care centres.

Participants and setting of the study- The sample comprised 88 Nurses working in peripheral health care centres of Bagalkot, selected by the Convenient Sampling technique. There are 9 Taluks in the Bagalkot District. Based on the convenience of the researcher the Bagalkot Taluka and Badami Taluka were selected as accessible populations of the study. A sampling frame was prepared considering all the mid-level health care providers (MLHP) working in sub-centres and Nursing officers working in selected Community health centre and Primary health centres.

The researcher approached all the nurses working in selected CHCs, PHCs and SCs and explained the purpose of the study and at last enrolled 88 nurses who satisfied the sample selection criteria.

Criteria for selection of sample

Inclusion criteria- The study includes the nurses;

- working in Community health centre/Primary Health centre/Sub centre.
- Able to understand, read and write Kannada or English.

Exclusive criteria

The study excludes the nurses who are;

- Involved in any research study for the improvement of resilience
- Sick and not able to provide data

Sample Size Estimation- The sample size for the present study was estimated using the following formula based on results obtained from previous research studies.

$$\text{Sample size} = \frac{Z^2 \times SD^2}{D^2}$$

Where, Z= The critical value at 5% level of significance is; Z = 1.96; SD= Standard deviation = 0.228; d= margin of error (i.e. 5%) = 0.005

$$\text{Sample size (n)} = (1.96)^2 \times (0.228)^2 / (0.05)^2$$

Hence,

Sample size (n) = 80, considering 10% possibility of attritions in data, the Sample Size for the present study was finalized to 88 Nurses.

Description of data collection instruments

Part-I: Structured questionnaire- To collect data regarding predictive factors and Socio-demographic characteristics. It consisted of 16 items.

Part-II: Resilience assessment scale- It consists of 25 items to assess resilience among nurses.

Scoring of Resilience assessment scale- Each item had five options and each option was given a score from 1 to 5. Score 1: not true at all, score 2: Rarely true, Score 3: Sometimes true, Score 4: Often true and Score 5: True nearly all the time. Table 1 depicts the categorization of resilience according to the obtained scores.

The interpretation of resilience scores was divided into 3 categories based on quartile scores.

Table 1: Level of resilience interpretation score.

Level of Resilience	Quartile range score
Low	below 64
Moderate	65 to 95
High	above 95

Procedure of Data collection- Formal permission was obtained from District Health and Family Welfare Officer, Bagalkot. The data was collected from 04/07/2022 to 27/07/2022. The researcher approached the nurses and explained the purpose and their role in the study. A written consent was obtained and data was collected from them.

Statistical Analysis- Data was analyzed using SPSS 18. Data obtained from the sample was entered into an MS Excel sheet and then transferred to SPSS. The data was organized and explained using frequency and percentage distribution, arithmetic mean, and standard deviation. Logistic Regression analysis and Chi-square test were used to determine the association between predictive factors and resilience among Nurses.

Ethical clearance- The study was presented to the institutional ethical committee and the ethical clearance certificate was obtained. Ref No: BVVS/SIONS/IEC-2021-22/564.

RESULTS

55% of the respondents were working as MLHP and 45% were Nursing officers. 72.80% of the respondents had Less than 5 years of Professional Experience and 9% had 11 to 15 years of experience. 42% of nurses had Post. Basic. BSc Nursing degree qualification, 30.70% had Basic B Sc Nursing, qualification 17% were General Nursing and Midwifery and 10.20% were with post-graduation qualification of M.Sc Nursing. 74.40% of the respondents were residing in rural areas 84% respondents said that they were satisfied with their jobs 90.90% were employed on a contract/ temporary basis and only 9.10% of respondents had permanent employment status 50% of the respondents were employed in PHC, 45.50% in Sub centres, and only 4.50% of respondents in community health centres.

The mean resilience score of Nurses working in peripheral health care centres was 78.02±17.93. The minimum resilience score was 40 and the maximum score was 112. Table 2, depicts the distribution of nurses according to their resilience score. Most of the nurses had a moderate (53.4%) level of resilience, whereas only 19 (21.6%) nurses had a high level of resilience.

The nurses were divided into 3 categories based on their resilience scores (Table 2). Among 88 53.4 % (47) depicted a moderate level of resilience, 21.6 % (19) had a high level of resilience and 25% (22) had a low level of resilience.

Table: 2: Level of Resilience among Nurses working at peripheral health care centres

Level of Resilience	Frequency	Percentage
Low	22	25.0
Moderate	47	53.4
High	19	21.6
Total	88	100.0

Max score = 125

Table 3 depicts the predictive factors associated with resilience among nurses. Logistic regression analysis revealed that a significant association was found between resilience among nurses and predictive factors, Age ($p < 0.005$) (OR: 1.67 CI 95%, 1.171-2.375), Job satisfaction ($p < 0.020$) (OR: 0.058 CI 95%, 0.005-.640),

Family type ($p < 0.005$), (OR: .036 CI 95%, .000-3.190) Attending any life skill development programs ($p < 0.026$, (OR: 11.225, CI 95%, 1.34-94.044), and attending Personality development programs ($p < 0.023$), (OR: 0.023, CI 95%, 0.001-0.406).

Table 3: Predictors of resilience

Predictive Factor	S.E.	Wald	Sig.	OR	95.0% C.I. for	
					Lower	Upper
Age	0.18	8.04	0.005*	1.67	1.171	2.38
Sex	1.00	2.30	0.129	0.217	0.030	1.56
Professional Experience	0.186	0.83	0.362	0.844	0.586	1.22
Basic Education	2.26	2.09	0.148	0.038	0.000	3.19
Job satisfaction	1.23	5.40	0.020*	0.058	0.005	0.640
Family type	1.17	8.00	0.005*	0.036	0.004	0.362
Designation	1.23	1.85	0.173	5.30	0.480	58.59
Attended any life skill development programme	1.09	4.97	.026*	11.23	1.34	94.04
Attended any personality development programme	1.46	6.64	0.010*	0.023	0.001	0.406

$\alpha = 0.05$, *Significant, Abbreviation: S.E: Standard error, OR: Odds ratio

Table 4 depicts the association of resilience among nurses with their socio-demographic factors. Bivariate analysis was done to determine the association between resilience among nurses working in peripheral health care centres and socio-demographic factors that are categorical in measurement. The chi-square results obtained at 5% level of significance suggest that there

was a significant association between resilience among nurses and their socio-demographic factors; educational status ($p < 0.001$), Job satisfaction ($p < 0.001$), Type of Family ($p < 0.002$), marital status ($p < 0.004$), Designation ($p < 0.001$), attending personality development programs ($p < 0.003$), and living with family or alone ($p < 0.000$).

Table 4: Association between socio-demographic factors and Resilience among Nurses working in peripheral health care centres

Socio Demographic Characteristics	Chi-Square	DF	p-value
Sex	1.208	2	0.547
Educational status	21.782	6	0.001*
Place of Residence	.669	2	0.716
Job Satisfaction	6.585	2	0.001*
Type of family	12.282	2	0.002*
Marital status	15.625	4	0.004*
Designation	19.479	4	0.001*
Employment type	4.784	2	0.091

Attended any personality development programme	11.310	2	0.003*
Attended any life skill development programme	1.181	2	0.554
Are you living with family?	15.429	2	0.000*

$\alpha = 0.05^*$, Significant, Abbreviation, DF= Degree of freedom.

DISCUSSION

The mean resilience score among nurses working in peripheral health care centres was 78.02 ± 17.93 . In a similar study conducted by Afshari *et al.* [12]. The mean resilience score was 61.18 ± 14.8 , in a study published by Setiawati *et al.* [13]. The mean resilience score was 69 ± 15.823 , in a study conducted by Gerami *et al.* [14]. The mean resilience score was 60.31 ± 20.39 and study by Lin *et al.* [15] the mean resilience score was 52.13 ± 7.53 .

Findings regarding resilience among nurses depicted that 88 53.4 % (47) had having moderate level of resilience, 21.6 % (19) had a high level of resilience and 25% (22) had a low level of resilience. A study conducted by Chitbi *et al.* [16] ended with the result that 81% of healthcare professionals had low resilience, 16% had shown moderate and only 3% had good resilience. A similar study conducted by Boitshwarelo *et al.* [17] revealed that 14.3% of nurse managers presented low resilience, 59.2% moderate resilience and 26.5% presented high resilience.

There was a significant association between resilience among nurses and their socio-demographic factors; a significant association was found between resilience with educational status ($p < 0.001$) and job satisfaction ($p < 0.001$). A similar study was conducted by Incedag *et al.* [18] in which a significant association of resilience was found with educational status ($p = 0.018$) job satisfaction ($p = 0.000$) and type of family ($p < 0.002$), marital status ($p < 0.004$), designation ($p < 0.001$), attending personality development programme ($p < 0.003$), and living with family or alone ($p < 0.000$). A study conducted by Parizad *et al.* [19] showed that resilient nurses were better educated [(b=0.094. 95% confidence interval [CI]: 0.038, 0.162)].

CONCLUSIONS

As per the results of the present study low level of resilience was found among 25% of nurses and a high level of resilience was demonstrated by very few nurses. The level of resilience increased with better education and job satisfaction. It is also learnt that Personality

development programs also contribute to building resilient behaviour. Once nurses complete their education, they are presented with very few opportunities to strengthen their mental abilities. The study recommends conducting life skill development programs to enhance the mental abilities in dealing with work-concerned difficulties among nurses, who are working in peripheral health care centres. Many professional skill development training programs are conducted for nurses that improve their capacity to reduce errors in their work but simultaneously there should be some regular interventions that could improve the stress-handling capacity of nurses. There is a need for interventional research that could test the effectiveness of interventions that can strengthen the resilience among nurses.

CONTRIBUTION OF AUTHORS

Research concept- Manjunath Ganiger, Utalbasha N Dhandargi

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