



Original Article

Do Low Self-Esteem and High Stress Lead to Burnout Among Health-Care Workers? Evidence From a Tertiary Hospital in Bangalore, India



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ABSTRACT

Background: Low self-esteem can be an issue among health-care workers due to the hierarchical medical system. Health-care workers are also in a high pressure environment that can lead to stress and burnout. This study was conducted to estimate the proportion of health-care workers with low self-esteem, high stress, and burnout and the factors associated with these in a private hospital in Bangalore city.

Methods: This cross-sectional study included a random sample of health-care workers of various cadres – doctors, nurses, nursing aides, technicians, and workers in ancillary departments such as laundry, dietary, central sterile supply department, and pharmacy, with probability proportional to size. Rosenberg Scale for Self-esteem, Cohen's Perceived Stress Scale, and Shirom–Melamed Burnout Measure were used as study tools.

Results: Among the 306 health-care workers, there were high levels of low self-esteem (48.4%), stress (38.6%), and burnout (48.7%), with the lowest levels being among doctors. Those aged younger than 30 years had significantly lower self-esteem and greater stress.

Conclusions: Health-care workers with low self-esteem were nearly thrice more likely to suffer high stress, Odds Ratio (OR) = 2.84 (1.36–5.92), and those who were stressed had more than three times higher chance of experiencing burnout, OR = 3.6 (2.02–6.55). Path analysis showed that low self-esteem among health-care workers had a direct effect on burnout, as well as an indirect effect through stress (mediator variable). This study indicates the need for screening and counseling for low self-esteem, stress, and burnout as part of a periodic medical examination of all cadres of health workers.

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1. Introduction

Health-care workers are constantly in an environment that predisposes to stress and burnout, and depending on one's job description and position in the “medical hierarchy”, even low self-esteem can be an issue. The medical profession is in the paradoxical position of needing as much support as any other group of professionals, if not more, but is generally getting much less. Burnout among health-care workers can happen, given the high-pressure environment in which they must make potentially life-saving, and almost always life-altering, choices on a constant basis [1].

Self-esteem refers to the confidence in one's own worth or abilities [2]. A high level of self-esteem is linked to trusting one's thinking and judgment and decision-making. It helps to create

more effective interpersonal and work relationships and contributes to improving the work environment [3]. Poor self-esteem leads to overly compliant or rebellious behavior, making the work environment unpleasant and decreasing productivity, further leading to mental health issues [4].

Stress in the workplace is defined as “the response people have when presented with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope” [5]. Some amount of pressure at the workplace is unavoidable due to the demands of the contemporary work environment. However, when that pressure becomes excessive or otherwise unmanageable, it leads to stress. Stress can damage an employee's health and work performance.

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Burnout is characterized by emotional exhaustion, feelings of detachment (depersonalization), and a sense of low personal accomplishment. Exposure to patients with poor prognosis, high workload, poor interpersonal relationships, and role ambiguity can lead to burnout [6]. Burnout among health-care workers has garnered significant attention because of the negative impact it renders on patient care [7]. High burnout levels among health-care workers may result in medical errors, job attrition, lack of professionalism, and even substance abuse [8].

Low self-esteem and high stress levels can be predictors of burnout at the workplace and employees therefore need to be screened for all three, in an effort to improve productivity at work [9].

Most of the research in the area of self-esteem, stress, and burnout among health-care workers has been carried out among doctors and nurses in developed and Western countries. There is a paucity of data from Asian and developing countries, as well as data from other cadre of health-care workers such as nursing aides, technicians, and employees in ancillary departments. Considering the sheer number of patients and the immense workload in India, this study was conducted to estimate the proportion of health-care workers with low self-esteem, stress, and burnout and the associated risk factors in a private hospital in Bangalore city. This would help design targeted interventions at the workplace to address these issues, thereby improving productivity and patient care.

2. Materials and methods

This was a cross-sectional study carried out in a large tertiary private missionary hospital in Bangalore city, in the south of India, with 1350 in-patient beds and an average of 2500 outpatient consultations per day. Institutional Ethics Committee approval was obtained before the commencement of the study. The study participants included health-care workers of various cadres, that is, doctors, nurses, nursing aides, technicians, and workers in ancillary departments such as laundry, dietary, central sterile supply department, and pharmacy. A sample size of 303 was calculated with 5% absolute precision and 95% confidence limits, based on a previous study among health-care workers in Jordan [10], which found a 27% prevalence of high stress. The prevalence of stress was considered for sample size calculation, as it gave the largest sample size as compared with using self-esteem or burnout. A list of all health-care workers in the hospital was obtained and using probability proportional to size, the required sample in each cadre was determined and selected randomly using a random number table. This list did not include interns, postgraduate medical students, student nurses, and student technicians.

Only health-care workers aged between 18 to 60 years who had completed at least one year of service in the hospital were included in the study. Those unwilling to participate and those who were not contactable even after 3 attempts were excluded from the study and a new participant was randomly selected as a replacement from the same cadre of workers. Written informed consent was obtained from the study participants before inclusion in the study.

Study participants were asked to complete a self-administered questionnaire which included sociodemographic, family, and employment details, as well as the following standardized scales:

Rosenberg Scale to assess self-esteem [11]

This is a 10-item questionnaire that assesses self-esteem. Each item is scored on a 4-point scale, with responses ranging from “strongly agree” (0) to “strongly disagree” (3). Positively worded items are reverse scored. Total scores are dichotomized, with scores

Table 1

Various cadre of health-care workers included in the study N = 306

No.	Cadre of health-care workers	Total N (%)
1	Doctors	89 (29.1)
2	Nurses	113 (36.9)
3	Lab technicians	19 (6.2)
4	Nursing aides	62 (20.3)
5	Ancillary departments	
	Central sterile supply department	2 (0.7)
	Laundry	5 (1.7)
	Dietary	4 (1.2)
	Pharmacy	9 (2.9)
	Medicosocial work	3 (1.0)

less than 15 suggesting low self-esteem and scores of 15 and more suggesting high self-esteem.

Cohen's Perceived Stress Scale to assess stress [12,13]

This is a 10-item scale assessing perceived stress over the last one month. Each item is scored on a 5-point scale, with responses ranging from “never” (0) to “almost always” (4). Positively worded items are reverse scored. A participant with a score of 21 or more is considered to have high stress.

Shirom–Melamed Burnout Measure to assess burnout [14]

This is a 14-item scale assessing burnout at the workplace. Each item is scored on a 7-point scale, with responses ranging from “never/almost never” (1) to “always/almost always” (7). It assesses three dimensions of burnout namely physical fatigue (6 questions), emotional exhaustion (5 questions), and cognitive weariness (3 questions). The higher the total score, the greater is the level of burnout.

The questionnaire was translated and back translated into the local language to enable the various cadre of health-care workers to read and understand the questions and to participate in the study. Participants were given a choice to answer either the English or the Kannada version. The questionnaire was found to have acceptable internal reliability with a Cronbach α coefficient of 0.78.

The data collected were entered in Microsoft Excel and analyzed using (SPSS, IBM Statistical Package for Social Sciences, NY, USA, version 16). Sociodemographic, employment, and family data were analyzed using frequencies, proportions, means and standard deviation, and median. The outcome variables of self-esteem, stress, and burnout were studied for their association with various sociodemographic, employment, and family factors using the Chi-square test and Fischer exact test where applicable, as well as the Mann–Whitney *U* test and Kruskal–Wallis test for difference between median scores of the outcome variables. A *p*-value of <0.05 was considered as statistically significant. Significant factors were entered into a multiple logistic regression model to look at the various determinants of self-esteem, stress, and burnout. Path analysis was performed to check the hypothesis that low self-esteem leads to high stress, which in turn leads to burnout.

3. Results

Because data collection was performed simultaneously by three data collectors, the final sample of 306 slightly exceeded the required sample of 303, and it was decided to retain the data of the extra participants. Of the 306 subjects, 89 (29.1%) were doctors (junior residents and teaching faculty), 113 (36.9%) staff nurses, and 104 (34%) were nursing aides, technicians, and employees in ancillary departments – laundry, dietary, central sterile supply

Table 2 Association of various sociodemographic and economic factors with self-esteem, stress, and burnout among health-care workers

Variable	Total N = 306		Self-esteem		High stress		Burnout		p value
	High 158 (51.6)	Low 148 (48.4)	Absent 188 (61.4)	Present 118 (38.6)	High stress 118 (38.6)	Low stress 188 (61.4)	Median (IQR)	p value	
Age (in years)	246 (80.4)	118 (47.9)	142 (57.7)	104 (42.3)	104 (42.3)	24 (14-34.5)	0.18†		
≤30	41 (13.4)	26 (63.4)	29 (70.7)	12 (29.3)	12 (29.3)	23 (13-31)			
31-50	19 (6.2)	14 (73.7)	17 (89.5)	2 (10.5)	2 (10.5)	16 (9-33)			
>50	58 (18.9)	28 (48.3)	32 (55.2)	26 (44.8)	26 (44.8)	23 (9-29)	0.04‡		
Education	46 (15.1)	19 (41.3)	25 (56.5)	21 (43.5)	21 (43.5)	24.5 (15-39)			
Up to PUC	26 (8.5)	10 (38.5)	18 (69.2)	8 (30.8)	8 (30.8)	23 (9-29)			
General/lab degree	87 (28.4)	38 (43.7)	46 (52.9)	41 (47.1)	41 (47.1)	26 (16-38)			
Diploma nursing	22 (7.2)	15 (68.2)	14 (63.6)	8 (36.4)	8 (36.4)	21 (14-31)			
BSc Nursing	67 (21.9)	48 (71.6)	53 (79.1)	14 (20.9)	14 (20.9)	21 (11-31)			
MBBS	89 (29.1)	63 (70.8)	67 (75.3)	22 (24.7)	22 (24.7)	21 (13-31)	0.03‡		
MD/MS	113 (36.9)	48 (42.4)	64 (56.6)	49 (43.4)	49 (43.4)	25 (15.5-37)			
Doctors	104 (34.0)	47 (45.2)	57 (54.8)	47 (45.2)	47 (45.2)	24 (12-31)			
Nurses	306	102	143	114 (71-246)	114 (71-246)	Correlation coefficient r = -0.02	0.73§		
Others	(100)	(85-565)	(72-477)						
Socioeconomic status	168 (54.9)	98 (58.3)	108 (64.3)	60 (35.7)	60 (35.7)	23 (11-32)	0.08†		
Median per capita monthly income in USD (IQR)	138 (45.1)	90 (43.5)	86 (58.0)	58 (42.0)	58 (42.0)	24 (15-35)			
Marital status									
Married									
Unmarried									

The numbers in parentheses are row percentages, except in the total column where they are column percentages. PUC= Pre-university college; MBBS= Bachelor of Medicine & Bachelor of Surgery; MD= Doctorate in Medicine; MS= Masters in Surgery. Bold = statistically significant at p<0.05.

* Chi-square test.
 † Mann-Whitney U test.
 ‡ Kruskal-Wallis test.
 § Spearman's Rank correlation.

Table 3 Association of high stress with low self-esteem

Variable	Category	Total N = 306	High stress		p value
			Yes 118 (38.6)	No 188 (61.4)	
Low self-esteem	Yes	148 (48.4)	82 (55.4)	66 (44.6)	<0.001*
	No	158 (51.6)	36 (22.8)	122 (77.2)	

The numbers in parentheses are row percentages, except in the total column where they are column percentages. Bold = statistically significant at p<0.05.
 * Chi-square test.

department, and pharmacy (Table 1). Among the study participants, 73 (23.8%) were men and 233 (76.2%) women. The mean age of the health-care workers was 31.87 (standard deviation ± 9.53, range = 18–60 years). Majority of the study participants (80.4%) aged younger than 30 years. One hundred sixty-eight participants (54.9%) were married, of whom 57.9% were married within the last 3 years. The median number of children among the health-care workers was 2 (Inter-quartile range (IQR) = 0–2). There were 168 (54.9%) Christians, 124 (40.5%) Hindus, and 14 (4.6%) belonged to other faiths. Twenty-five respondents (8.2%) reported death of a family member (spouse, child, parent or sibling) within the last one year and 2 (0.7%) reported marital separation or divorce in the last one year.

Among the health-care workers in the study, 148 (48.4%) had low self-esteem, 118 (38.6%) were found to have stress, and 149 (48.7%) had burnout (Table 2). Those aged older than 50 years had significantly higher self-esteem than younger health-care workers. Self-esteem was significantly higher among doctors and among those with a postgraduate medical degree compared with other education degrees. Participants with high self-esteem were significantly more likely to be married. Stress was significantly lower among those aged 50 years and older as compared with other age-groups. Stress was significantly lower among doctors as compared with the other cadre of workers. Stress was also significantly lower among those with a postgraduate medical degree, that is, MD/MS. Health-care workers with stress had a significantly lower median monthly per capita income than those who did not have stress. Doctors had significantly lower levels of burnout as compared with other cadre of health workers.

We found no significant association between stress, self-esteem, or burnout and other factors such as total duration of employment, duration of employment at the current hospital, religion, gender, duration of married life, number of children, death of a close family member within the last one year, or marital separation within the last one year.

When the significantly associated variables were entered into a multivariate logistic regression model, none of the sociodemographic and economic factors remained significant.

Low self-esteem was significantly associated with high stress (Table 3). Health-care workers with low self-esteem were nearly three more likely to suffer high stress [OR = 2.84 (1.36–5.92) p < 0.001]. Low self-esteem and/or stress were significantly associated with burnout (Table 4). Health-care workers with high stress were more than thrice likely to suffer burnout [OR = 3.6 (2.02–6.55) p < 0.001]. Path analysis was conducted to check the hypothesis that low self-esteem leads to high stress which in turn leads to burnout. Fig. 1 indicates that low self-esteem has a direct effect on burnout, and it also has an indirect effect on burnout through the mediator variable, that is, stress. This was found to be statistically significant (p = 0.007) (Table 5).

Table 4
Association of burnout with self-esteem and/or high stress

Variable	Category	Total N = 306	Burnout		p value
			Yes 149 (48.7)	No 157 (51.3)	
Low self-esteem	Yes	148 (48.4)	89 (60.1)	59 (39.9)	<0.001*
	No	158 (51.6)	60 (38.0)	98 (62.0)	
High stress	Yes	118 (38.6)	84 (71.2)	34 (28.8)	<0.001*
	No	188 (61.4)	65 (34.6)	123 (65.4)	
Low self-esteem and high stress	Yes	82 (26.8)	61 (74.4)	21 (25.6)	<0.001*
	No	224 (73.2)	88 (39.3)	136 (60.7)	

The numbers in parentheses are row percentages, except in the total column where they are column percentages. Bold = statistically significant at $p < 0.05$.

* Chi-square test.

4. Discussion

This study found that among health-care workers in a private tertiary hospital, there were high levels of stress (38.6%), low self-esteem (48.4%), and burnout (48.7%). This finding has implications for the care of patients because health-care workers who feel stressed about their jobs also tend to feel burned out and defeated by the health-care system, leading to less motivation to improve conditions, both for themselves and for patients. This is in addition to possible health-related issues for the health workers themselves as work-related stress has been associated with increased rates of hypertension and cardiovascular disease [15]. Workload demands and performance expectations are key sources of job stress, and these are experienced by health-care workers in a high pressure setting on a daily basis.

Research in the United States shows that stress in the workplace has escalated over the past few decades and is by far the major source of stress among adults, with 29% reporting stress at work and 26% reporting burnout across different professions [16]. Among doctors, this is worse, with 40% of doctors experiencing emotional, physical, and psychological burnout from their jobs [1]. More than one-fourth of the doctors in the present study suffered low self-esteem and high stress and more than a third of them experienced burnout. This can be explained by the fact that, though doctors interact with people on a daily basis, their training as physicians are focused almost entirely on their technical capabilities, leaving them with few tools for understanding and navigating interactions as part of a larger team or organization. Self-esteem though was significantly higher among doctors in our study, as compared with other health-care workers. This could be attributed

Table 5
Path regression coefficients for direct, indirect, and total effects

Causal variables	Endogenous variable (outcome variable)		
	Burnout		
	Standardized path coefficient	SE	P value
High stress			
Direct effect	0.51	0.19	0.007
Indirect effect	0	—	—
Total effect	0.51	0.19	0.007
Low self-esteem			
Direct effect	1.09	0.16	<0.001
Indirect effect	0.18	0.06	0.01
Total effect	1.27	0.15	<0.001

to the fact that doctors by virtue of their qualifications are the highest in the hierarchy of decision-making in patient care and usually are deferred to by other members of the health team, including nurses [17].

In the present study, three-fourths of the health-care workers were women, due to the large representation of nurses and nursing aides in the sample. Nearly half the nurses were stressed, while more than half had low self-esteem and suffered from burnout. This could be due to the hierarchical system in health care, long working hours, lack of respect, and low remuneration as compared with doctors, as explained in a qualitative study among nurses in Karnataka, India [18], as well as in Brazil [19] and Ethiopia [20]. In our study, it was found that unmarried participants had significantly lower self-esteem than married participants. Unmarried participants might have to deal with loneliness and family or societal pressure to get married. Among those who were married, it was found that burnout was significantly more among those with a shorter duration of marriage. This could be due to the pressure of learning to balance duties in the workplace and at home, starting a family or raising a family with young children, or even leaving behind very young children in the care of their grandparents in their hometown to enable continuing work. This was also similarly seen in a study among health-care workers in Saudi Arabia [21].

In the present study, while duration of employment was not associated with stress or burnout, those aged younger than 30 years had significantly greater stress and lower self-esteem in our study, possibly due to junior position in the health team and subsequent lower income, academic pressure to study further, or lack of family support as most of the young doctors, nurses, aides, and technicians reside in hostels on campus. A similar finding with regards to young doctors suffering from high stress was reported in the UK [22]. Younger health-care workers living away from the spouse is also a factor that has been found in a study carried out in Karnataka, India, where nurses who stay with their husbands have higher self-

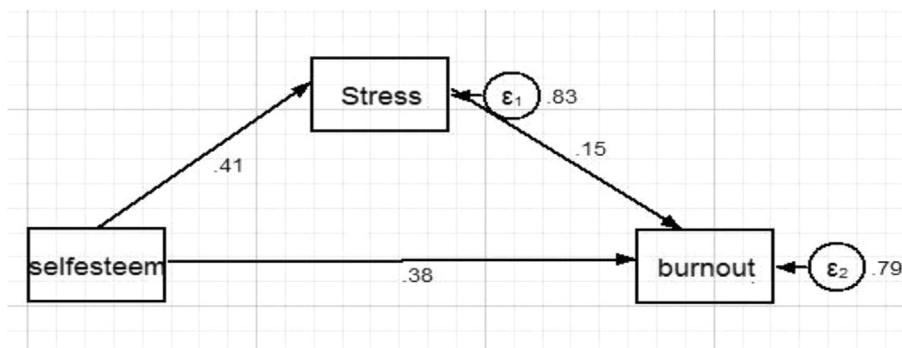


Fig. 1. Path analysis indicating causal pathway between low self-esteem and burnout through stress.

esteem as compared with nurses who stay away from their husbands because of their job [18].

Health-care workers with a postgraduate degree had significantly higher self-esteem and lower stress levels. This could be explained by the higher levels of personal achievement experienced through higher education, as shown in a study among health-care workers in Brazil [23].

In the present study, the risk of stress was nearly three times higher among health-care workers with low self-esteem, and participants who were stressed were more than thrice likely to experience burnout. Studies among Polish and Dutch nurses [6] and among health-care workers in Spain [24] have also demonstrated that low self-esteem and stress at work are significantly associated with burnout. Low self-esteem can lead to psychological effects that cause a person to be more susceptible to stressful situations. Another aspect of the connection between stress and self-esteem is that a lack of assertiveness is one of the common effects of a lower self-esteem. This can turn into a vicious cycle in which low self-esteem leads a person to accept more work than he or she can truly handle. This, in turn, causes increased stress [25]. While low self-esteem has been independently linked to burnout [26], burnout is also a consequence among workers exposed to high level of stress at work. This relationship pathway has been clearly illustrated in the present study, with low self-esteem having a direct effect on burnout, as well as an indirect effect through the mediator variable (stress). A similar model using standardized path coefficient has been demonstrated in an Italian study, where high workload leads to exhaustion with job control as a mediator variable [27].

While the work of health-care professionals can be gratifying, factors however such as work-life imbalance, long hours, perceived workload, lack of communication, and hierarchical work structure may consequently increase the risk of low self-esteem, with subsequent increase in stress and burnout [28]. Health-care workers therefore need to be screened for low self-esteem, stress, and burnout as part of their periodic medical examination at the workplace. Counseling services at the workplace for health-care workers would help to address this issue and benefit not only the health care worker but also the patient and the hospital. There is scope for further research in this area to probe into how working conditions, interpersonal relationships, and incentives play a role in self-esteem, stress, and burnout among these health-care workers. This study indicates the need for screening and counseling for low self-esteem, stress, and burnout as part of a periodic medical examination of all cadres of health workers.

5. Limitations

Owing to time and resource constraints, a cross-sectional study design was used, which may not be the ideal design to determine a temporal relationship between stress and burnout. The study may have missed workers who had experienced severe stress and/or burnout, causing them to have left the workplace already, leading to a selection bias as a result of "healthy worker effect phenomenon" [29].

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Author contributions

A.R.J. contributed in concept and design of the study, data interpretation, writing the first draft of the manuscript, and revising the manuscript and was accountable for all aspects related

to the accuracy and integrity of the research work. R.J. contributed in data analysis and manuscript revisions. M.J. contributed in data collection, data entry, and writing of the manuscript. A.K. contributed in data collection, data entry, and writing of the manuscript. R.K. contributed in data analysis and data interpretation. B.J. contributed in design of the study, interpretation of data, and final approval of the manuscript.

Conflicts of interest

All authors have no conflicts to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.shaw.2020.05.009>.

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