

Knowledge, Attitude, and Practices Regarding Lifestyle Modification Among Patients with Ischemic Heart Disease in CPEIC Multan

Farhana bibi¹, Saba Akram², Irum Khan³, Shama Iqbal¹

¹ Charge Nurse, CPEIC Hospital, Multan, Pakistan

² Head Nurse, CPEIC Hospital, Multan, Pakistan

³ Head Nurse, Nishter Hospital, Multan, Pakistan

*Corresponding author: Farhana bibi, farhanabalouch6@gmail.com

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ABSTRACT

Background: Ischemic heart disease is a major cause of morbidity and mortality in Pakistan, and sustained lifestyle modification is essential for secondary prevention. However, patient adherence to diet, physical activity, smoking cessation, medication use, and follow-up remains challenging, particularly in low-resource settings. **Objective:** This study assessed knowledge, attitudes, and practices regarding lifestyle modification among patients with ischemic heart disease admitted to CPEIC Multan. **Methods:** A cross-sectional observational study was conducted from January to March 2026 among 100 patients aged 30–70 years with confirmed ischemic heart disease. Data were collected through face-to-face interviews using a structured questionnaire assessing demographic characteristics, knowledge, attitudes, and practices related to lifestyle modification. KAP scores were categorized as good, moderate, or poor using predefined percentage cutoffs. **Results:** The mean age was 52.4 ± 8.2 years, and 62.0% were male. Good knowledge, attitude, and practice scores were observed in 55.0%, 47.0%, and 26.0% of participants, respectively. Awareness was high for smoking as a risk factor and physical activity as protective, but only 42.0% correctly identified high-cholesterol foods as a risk. Medication adherence was reported by 82.0%, while regular exercise, dietary modification, salt restriction, and smoking cessation among smokers were reported by 28.0%, 35.0%, 30.0%, and 26.7%, respectively. **Conclusion:** Patients demonstrated a marked knowledge-practice gap, indicating the need for structured, culturally appropriate, family-inclusive lifestyle counseling and cardiac rehabilitation support. **Keywords:** Ischemic Heart Disease, Lifestyle Modification, Knowledge, Attitude, Practice, Cardiac Rehabilitation, Pakistan

INTRODUCTION

Moral distress is an important ethical and occupational concern in nursing practice, particularly in high-pressure clinical environments where nurses are required to make rapid decisions while working within institutional, organizational, and resource-related constraints. It occurs when healthcare professionals recognize the ethically appropriate action but are unable to act according to that judgment because of barriers such as limited staffing, hierarchical decision-making, inadequate resources, conflicting treatment priorities, or restrictive workplace systems (1). Among nurses, moral distress may arise when professional values, patient advocacy responsibilities, and clinical realities come into conflict, producing psychological disequilibrium, emotional exhaustion, reduced motivation, burnout, lower job satisfaction, and increased intention to leave the profession (2, 3).

Emergency departments represent one of the most ethically demanding clinical settings because nurses must respond to unpredictable patient loads, urgent life-threatening conditions, overcrowding, time-

sensitive decision-making, limited resources, and frequent conflicts between patient needs and institutional capacity. These conditions expose emergency department nurses to complex ethical challenges comparable to those experienced in critical care settings, including decisions related to prioritization of care, end-of-life management, communication with distressed families, treatment delays, and resource allocation (4, 5). Because nurses remain in close and continuous contact with patients and families, they are often the healthcare professionals most directly exposed to the emotional and ethical consequences of constrained clinical decision-making (6).

The consequences of unresolved moral distress extend beyond individual psychological discomfort. Previous literature has linked moral distress with physical and mental health problems, emotional fatigue, reduced professional engagement, poor workplace morale, impaired communication, weakened teamwork, decreased quality of care, and nursing workforce instability (7). In this context, job satisfaction reflects the nurse's emotional and cognitive evaluation of professional role fulfillment, workplace support, organizational climate, workload, recognition, autonomy, and overall experience within the healthcare environment (8). When moral distress remains persistent, it may negatively influence how nurses perceive their work, their ability to cope with professional demands, and their willingness to remain engaged in patient care.

Emergency department nurses in government hospitals may be particularly vulnerable to moral distress because they often serve large patient populations in resource-constrained environments. In such settings, high workload, overcrowding, limited staffing, insufficient equipment, delayed care pathways, and constrained administrative support may intensify ethical conflict and reduce perceived control over patient care decisions (9). Although international studies have examined moral distress among nurses in emergency, critical care, pediatric, oncology, and general hospital settings, evidence from government hospitals in interior Sindh remains limited. Local evidence is necessary because organizational structures, staffing patterns, cultural expectations, patient load, and resource availability may influence both the frequency and intensity of moral distress and its relationship with job satisfaction (10).

The present study was therefore conducted to assess the relationship between moral distress and job satisfaction among nurses working in emergency departments of government hospitals in Mirpurkhas, Sindh, Pakistan. The study specifically aimed to determine the levels of moral distress and job satisfaction, identify demographic factors associated with moral distress, and examine the correlation between moral distress and job satisfaction among emergency department nurses. The study was guided by the research question: is moral distress significantly associated with job satisfaction among nurses working in emergency departments of government hospitals in Mirpurkhas?

MATERIALS AND METHODS

A quantitative cross-sectional correlational study design was used to assess the relationship between moral distress and job satisfaction among nurses working in emergency departments of government healthcare facilities in Mirpurkhas, Sindh, Pakistan. This design was selected because the study aimed to measure moral distress and job satisfaction at a single point in time and determine the direction and strength of association between the two variables without introducing an intervention. The target population comprised registered nurses working in emergency care areas of government hospitals and health facilities in Mirpurkhas.

The study population consisted of 113 eligible registered nurses working in emergency departments or emergency care units of the selected government healthcare facilities. Nurses were eligible for participation if they were registered nurses, directly involved in patient care, assigned to emergency care services, and had at least six months of emergency department or emergency care experience. Nurses who were not directly involved in patient care and student nurses were excluded. All eligible nurses available during the data collection period were invited to participate, and 88 nurses consented and

completed the questionnaire, yielding a response rate of 77.9%. The final analytical sample therefore included 88 emergency department nurses.

Data were collected using a structured self-administered questionnaire composed of three sections. The first section recorded demographic and work-related characteristics, including gender, marital status, educational qualification, employment status, specialty certification, age, emergency department work experience, and weekly working hours. The second section assessed moral distress using the Moral Distress Scale-Revised (MDS-R), a 21-item instrument in which each item is rated for both frequency and intensity of moral distress on a five-point Likert scale ranging from 0 to 4. For each item, the frequency and intensity scores were multiplied, and total scores ranged from 0 to 336, with higher scores indicating greater moral distress. Moral distress was categorized as low, moderate, or high using the reported score ranges of 0–112, 113–224, and 225–336, respectively (11). The third section assessed job satisfaction using the Minnesota Satisfaction Questionnaire (MSQ), which includes 20 items rated from 1, indicating very dissatisfied, to 5, indicating very satisfied. Total scores ranged from 20 to 100, with higher scores indicating greater job satisfaction. Job satisfaction was categorized as low, moderate, or high using the reported score ranges of 20–46, 47–73, and 74–100, respectively (12).

Before formal data collection, the study instruments were reviewed by nursing research experts to assess content relevance and clarity for the study population. A pilot study was conducted among 12 nurses to evaluate the clarity, feasibility, and practical administration of the questionnaire; these participants were excluded from the final analysis. Administrative permission was obtained from the relevant hospital authorities and department heads before approaching participants. The study purpose, procedures, voluntary nature of participation, confidentiality protections, and intended academic use of the data were explained to hospital management, nursing managers, and eligible nurses.

Questionnaires were distributed to eligible participants during three working shifts in the emergency departments or emergency care areas. The researcher remained present in each ward or unit during the shift to explain the questionnaire procedure, respond to participant queries, and ensure that completed questionnaires were returned without discussion among participants. Participation was voluntary, and written informed consent was obtained before data collection. Confidentiality and anonymity were maintained throughout the study by avoiding personal identifiers in the dataset and using the collected information only for research purposes.

The main exposure variable was moral distress, measured as the total MDS-R score. The main outcome variable was job satisfaction, measured as the total MSQ score. Demographic and professional variables, including gender, marital status, educational qualification, employment status, specialty certification, age, emergency department experience, and weekly working hours, were treated as participant characteristics and potential factors associated with moral distress. To reduce information bias, standardized instruments were used, the questionnaire was pilot tested, and participants were given uniform instructions. To reduce selection bias, all eligible nurses identified during the data collection period were invited to participate.

Data were entered and analyzed using SPSS version 25. Descriptive statistics were used to summarize participant characteristics and study variables. Categorical variables were reported as frequencies and percentages, while continuous variables were reported as mean and standard deviation. Independent-samples t-tests were used to compare mean moral distress scores across binary demographic and professional categories, including gender, educational qualification, employment status, specialty certification, and marital status. Pearson product-moment correlation analysis was used to assess the direction and strength of the relationship between moral distress and job satisfaction. Statistical significance was assessed using a p-value threshold of <0.05.

RESULTS

Of 113 eligible nurses working in emergency care areas of government healthcare facilities in Mirpurkhas, 88 completed the study questionnaire and were included in the final analysis, giving a response rate of 77.9%. The majority of participants were female, married, BSN/Post RN BSN qualified, employed full-time, and did not hold specialty certification.

Table 1. Demographic and Professional Characteristics of Participants (n = 88)

Variable	Category	n (%)
Gender	Male	36 (40.9)
	Female	52 (59.1)
Marital status	Single	30 (34.1)
	Married	58 (65.9)
Educational qualification	Diploma Nursing	28 (31.8)
	BSN/Post RN BSN	60 (68.2)
Employment status	Full-time	78 (88.6)
	Part-time	10 (11.4)
Specialty certification	Yes	14 (15.9)
	No	74 (84.1)

The study sample included 52 female nurses (59.1%) and 36 male nurses (40.9%). Most participants were married (65.9%), held a BSN/Post RN BSN qualification (68.2%), and were employed full-time (88.6%). Specialty certification was uncommon, with only 14 nurses (15.9%) reporting certification.

Table 2. Continuous Participant Characteristics (n = 88)

Variable	Mean ± SD	Minimum	Maximum
Age, years	31.2 ± 5.4	22	46
Emergency department experience, years	5.8 ± 3.1	1	15
Weekly working hours	50.3 ± 7.6	36	72

Participants had a mean age of 31.2 ± 5.4 years, with ages ranging from 22 to 46 years. Mean emergency department experience was 5.8 ± 3.1 years, while the mean weekly working duration was 50.3 ± 7.6 hours.

Table 3. Level of Moral Distress Among Participants (n = 88)

Level	Score range	n (%)
Low	0–112	20 (22.7)
Moderate	113–224	56 (63.6)
High	225–336	12 (13.7)
Total score	—	158.6 ± 42.3

Table 4. Level of Job Satisfaction Among Participants (n = 88)

Level	Score range	n (%)
Low	20–46	18 (20.5)
Moderate	47–73	54 (61.4)
High	74–100	16 (18.1)
Total score	—	65.4 ± 10.7

Table 5. Association Between Participant Characteristics and Moral Distress

Variable	Category	Mean ± SD	t-value	p-value
Gender	Male	149.4 ± 39.8	-2.11	0.038
	Female	164.9 ± 42.7		
Educational qualification	Diploma Nursing	168.7 ± 44.5	2.18	0.032
	BSN/Post RN BSN	153.9 ± 40.2		
Employment status	Full-time	159.2 ± 42.8	0.46	0.648
	Part-time	152.7 ± 38.6		
Specialty certification	Yes	145.3 ± 36.8	-1.35	0.181
	No	161.2 ± 43.4		
Marital status	Single	161.8 ± 41.5	0.53	0.597
	Married	156.9 ± 43.2		

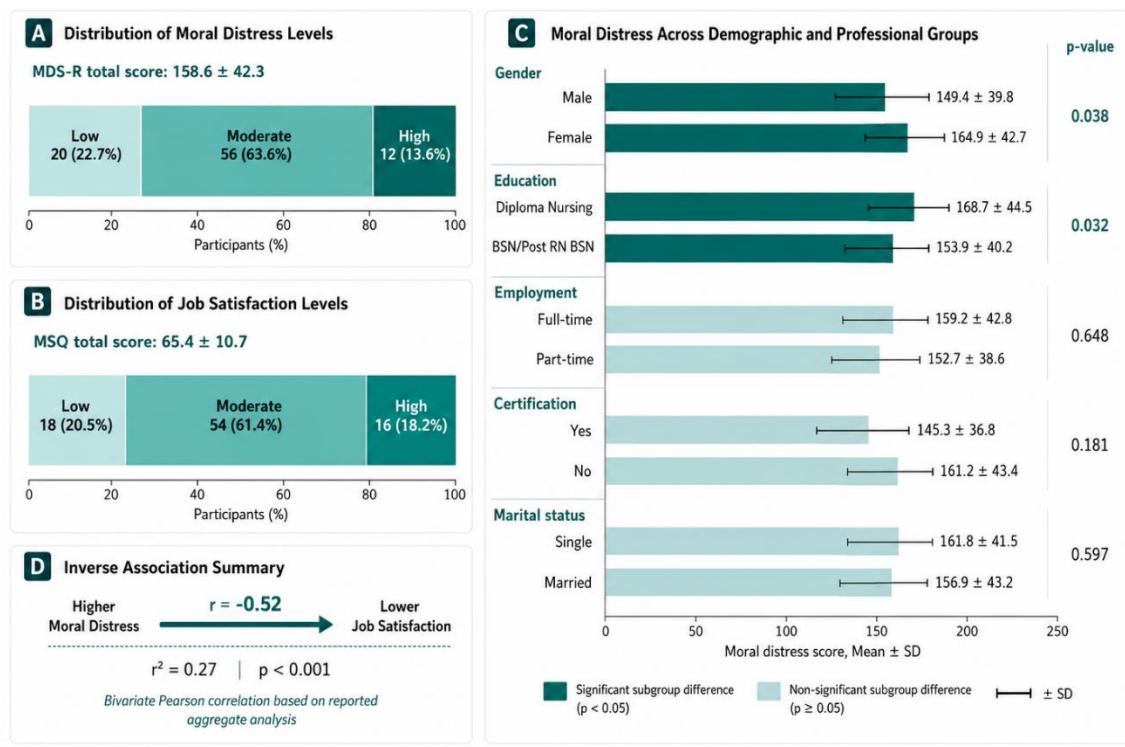
The mean moral distress score was 158.6 ± 42.3 . Most nurses had moderate moral distress, reported by 56 participants (63.6%), while 20 nurses (22.7%) had low moral distress and 12 nurses (13.7%) had high moral distress.

The mean job satisfaction score was 65.4 ± 10.7 . Moderate job satisfaction was the most frequent category, observed in 54 nurses (61.4%). Low job satisfaction was reported by 18 nurses (20.5%), while 16 nurses (18.1%) reported high job satisfaction.

Table 6. Correlation Between Moral Distress and Job Satisfaction

Variable	Mean $\pm$ SD	r	r ²	p-value
Moral distress	158.6 $\pm$ 42.3	-0.52	0.27	<0.001
Job satisfaction	65.4 $\pm$ 10.7			

Pearson correlation analysis showed a moderate negative correlation between moral distress and job satisfaction. The correlation coefficient was $r = -0.52$ with $p < 0.001$, indicating that higher moral distress was associated with lower job satisfaction. The coefficient of determination was $r^2 = 0.27$, suggesting that approximately 27% of the variation in job satisfaction was statistically shared with moral distress in the bivariate analysis.



MDS-R: Moral Distress Scale-Revised; MSQ: Minnesota Satisfaction Questionnaire.
Values are based on reported aggregate results; no individual-level data were simulated.

Figure 1. Moral Distress, Job Satisfaction, and Professional Vulnerability Patterns Among Emergency Department Nurses. Panel A shows the distribution of moral distress levels, with most nurses reporting moderate moral distress. Panel B shows the distribution of job satisfaction levels, with moderate job satisfaction being the most common category. Panel C summarizes subgroup differences in moral distress scores across demographic and professional characteristics, showing higher mean scores among female nurses and diploma-qualified nurses. Panel D presents the inverse correlation between moral distress and job satisfaction, indicating that higher moral distress was associated with lower job satisfaction.

DISCUSSION

The present study assessed the relationship between moral distress and job satisfaction among nurses working in emergency care areas of government healthcare facilities in Mirpurkhas, Sindh, Pakistan. The findings showed that emergency department nurses experienced a moderate level of moral distress, with a mean MDS-R score of 158.6 ± 42.3 , and moderate job satisfaction, with a mean MSQ score of 65.4 ± 10.7 . These findings indicate that moral distress is a meaningful professional and ethical concern in

this nursing population, particularly within high-pressure emergency care environments where nurses are required to respond to urgent clinical needs while operating within organizational, staffing, and resource-related constraints. The predominance of moderate moral distress in this study is consistent with previous evidence showing that emergency and critical care nurses are frequently exposed to ethically difficult situations involving rapid decision-making, limited resources, heavy workloads, patient prioritization, and conflicts between professional responsibility and institutional limitations (13, 14).

The mean moral distress score observed in the present study suggests that nurses in government emergency care settings may experience ethical strain at a level sufficient to affect their professional well-being. Similar concerns have been reported among nurses working in high-acuity clinical settings, where moral distress is often linked with inadequate staffing, hierarchical decision-making, lack of administrative support, and limited control over patient care decisions (15, 16). Although some studies have reported lower moral distress scores than those observed in the present study, direct comparison should be interpreted cautiously because moral distress estimates may vary according to the clinical setting, scoring method, scale version, health system structure, patient acuity, workload, and cultural context (14, 15). In government hospitals and emergency care facilities in Pakistan, overcrowding, limited resources, and high patient volumes may intensify ethical conflict and contribute to higher levels of moral distress among nurses.

The present study found that female nurses reported significantly higher moral distress than male nurses, with mean scores of 164.9 ± 42.7 and 149.4 ± 39.8 , respectively. This finding is consistent with previous research suggesting that gender may influence the experience, reporting, or internalization of moral distress among nurses, possibly through differences in role expectations, communication patterns, emotional labor, workplace responsibilities, and exposure to patient and family interactions (19). However, this association should not be interpreted as evidence of a causal gender effect because the study used a cross-sectional design and did not adjust for potential confounders such as age, work experience, shift pattern, patient load, or unit-specific workload. Future studies should examine whether gender remains independently associated with moral distress after multivariable adjustment.

Educational qualification was also significantly associated with moral distress. Diploma-qualified nurses reported higher moral distress than nurses with BSN/Post RN BSN qualifications, with mean scores of 168.7 ± 44.5 and 153.9 ± 40.2 , respectively. This finding may reflect differences in educational exposure to ethics, communication, clinical reasoning, leadership, and coping strategies. Nurses with higher academic preparation may have greater access to ethical decision-making frameworks, professional autonomy, and confidence in communicating clinical concerns, while diploma-qualified nurses may experience greater vulnerability when facing ethically difficult situations in hierarchical clinical environments. Previous evidence from nursing settings in Pakistan and other countries suggests that moral distress may be shaped by professional preparation, workplace hierarchy, staffing adequacy, and perceived support from senior clinicians and administrators (16–18).

No statistically significant differences in moral distress were observed according to employment status, specialty certification, or marital status. Although nurses without specialty certification had a higher mean moral distress score than certified nurses, this difference did not reach statistical significance. Similarly, full-time nurses and single nurses had slightly higher mean scores than their comparison groups, but these differences were not statistically significant. These findings suggest that gender and educational qualification were the main demographic variables associated with moral distress in the current bivariate analysis. However, the absence of statistically significant differences in other variables may be related to the modest sample size, unequal subgroup distribution, and lack of multivariable adjustment.

Job satisfaction in this study was moderate, with most nurses falling within the moderate satisfaction category. This finding aligns with previous studies reporting low-to-moderate job satisfaction among

nurses in settings characterized by workload pressure, staffing limitations, organizational constraints, and limited professional support (20, 21). In emergency care settings, job satisfaction may be influenced by multiple interacting factors, including workload intensity, managerial support, recognition, salary, job security, team communication, professional autonomy, shift burden, and perceived ability to provide safe and ethical patient care. The moderate job satisfaction observed in this study may therefore reflect a balance between professional commitment and workplace strain.

The most important finding of the study was the statistically significant moderate negative correlation between moral distress and job satisfaction. Pearson correlation analysis showed that higher moral distress was associated with lower job satisfaction, with $r = -0.52$ and $p < 0.001$. The coefficient of determination indicated that approximately 27% of the variation in job satisfaction was statistically shared with moral distress in the bivariate analysis. This finding is consistent with previous literature showing that moral distress may contribute to reduced workplace engagement, emotional exhaustion, dissatisfaction, burnout, and intention to leave among nurses (22, 23). In practical terms, nurses who repeatedly encounter ethical barriers without adequate institutional support may experience reduced professional fulfillment and lower satisfaction with their work environment.

The findings have important implications for nursing management and hospital administration. Structured ethical support systems, regular debriefing sessions, peer support, counseling services, ethics consultation, and training in ethical decision-making may help nurses manage morally distressing situations more effectively. In addition, organizational interventions aimed at improving nurse-to-patient ratios, communication between nurses and physicians, supervisory support, and access to resources may reduce preventable sources of moral distress. Because the study identified higher distress among female and diploma-qualified nurses, targeted support for vulnerable subgroups may be useful, particularly in emergency care areas where ethical conflict and workload demands are frequent.

This study has several limitations. First, the cross-sectional design limits causal interpretation, and the observed association between moral distress and job satisfaction should be interpreted as correlational rather than causal. Second, the use of convenience sampling may have introduced selection bias, and the findings may not be generalizable to all nurses in Sindh or Pakistan. Third, the study was conducted in a single city, and institutional conditions in Mirpurkhas may differ from those in tertiary care hospitals, private hospitals, or other regions. Fourth, the sample size was modest, and some subgroup comparisons included unequal numbers of participants. Fifth, the study relied on self-reported questionnaire data, which may be affected by social desirability bias, response bias, or differences in individual interpretation of moral distress and job satisfaction. Future studies should use larger multicenter samples, probability sampling where feasible, longitudinal designs, and multivariable regression models to identify independent predictors of moral distress and job satisfaction.

CONCLUSION

This study found that nurses working in emergency care areas of government healthcare facilities in Mirpurkhas experienced moderate levels of moral distress and job satisfaction. Female nurses and diploma-qualified nurses reported significantly higher moral distress, suggesting that demographic and professional factors may influence how nurses experience ethical challenges in clinical practice. A statistically significant moderate negative correlation was observed between moral distress and job satisfaction, indicating that nurses with higher moral distress tended to report lower job satisfaction. These findings highlight the need for institutional strategies that reduce ethically distressing workplace conditions, strengthen ethical decision-making support, improve supervisory and peer support systems, and promote healthier emergency nursing work environments. Because the study was cross-sectional, the findings should be interpreted as associative rather than causal.

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