

PREVALENCE AND FACTORS ASSOCIATED WITH MORAL DISTRESS AMONG UNDERGRADUATE NURSING STUDENTS IN KHYBER PAKHTUNKHWA (KPK), PAKISTAN

Mr. Muhammad Ilyas^{*1}, Adeel Ahmed², Adnan Khan³, Zain-ul-Islam⁴, Alhaaj Khan⁵

^{*1}Educational Director at Swabi College of Nursing and Allied Health Sciences, Swabi, Khyber Pakhtunkhwa, Pakistan

^{2,3,4,5}Students of Swabi College of Nursing and Allied Health Sciences, Swabi, Khyber Pakhtunkhwa, Pakistan

¹muhammad.ilyas@alumni.aku.edu, ²adikhan1604@gmail.com, ³adnankhan61760@gmail.com,
⁴zainulislam800@gmail.com, ⁵alhajkhani4@gmail.com

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Corresponding Author: *

Mr. Muhammad Ilyas

Abstract

Moral distress represents an acute psychological and ethical challenge in nursing education, occurring when students recognize the ethically appropriate action but are constrained by institutional hierarchies, systemic resource shortages, or clinical evaluative pressure. In developing healthcare environments, this disconnects between theoretical education and clinical reality becomes particularly severe. This analytical cross-sectional study evaluated the point prevalence and factors associated with moral distress among undergraduate nursing students during clinical rotations in Khyber Pakhtunkhwa (KPK), Pakistan. Conducted across nursing colleges with N = 294 regular undergraduate BS Nursing students (3rd to 8th semesters), data were gathered via a structured online survey (Google Forms) containing demographic details, the single-item 11-point Moral Distress Thermometer (MDT, scale 0–10; Cronbach's $\alpha = 0.732$), and a 22-item checklist assessing reasons for withholding ethical action. Data analysis was performed using IBM SPSS Version 26.0 through descriptive metrics and inferential Chi-square tests of independence ($p < 0.05$). Findings revealed that 82.0% ($n = 241$) of students experienced active moral distress (MDT score 4 or above), with an overall mean score of 5.51 ± 2.06 . Categorically, 48.0% suffered from moderate distress, 34.0% experienced severe distress, 17.7% reported mild distress, and only 0.3% indicated zero distress. Severe moral distress was significantly associated with male gender ($\chi^2 = 11.382$, $p = 0.010$; 38.5% male vs. 21.1% female) and clinical rotation areas ($\chi^2 = 50.687$, $p < 0.001$), with surgical units (42.4%) and specialized departments (51.0%) having the highest rates. Academic semester was not significantly associated with distress levels ($\chi^2 = 10.598$, $p = 0.102$). Among the 22 withholding factors, 8 cognitive and psychological barriers significantly predicted moral distress severity ($p < 0.05$): general fear ($p = 0.001$), lack of knowledge ($p = 0.003$), nervousness and fear of being wrong ($p = 0.007$), lack of self-confidence ($p = 0.022$), concern over grades ($p = 0.026$), confusion over clinical matters ($p = 0.036$), reluctance due to previous failed attempts ($p = 0.037$), and fear of assigned preceptors ($p = 0.044$).

The study highlights the urgent need for supportive preceptorship, simulation-based ethical dilemma training, and institutional psychological safety to protect student well-being and clinical retention.

1. INTRODUCTION

The nursing profession is deeply rooted in moral values, compassion, and the dedication to providing high-quality patient care. However, in contemporary clinical healthcare settings, undergraduate nursing students frequently confront complex clinical circumstances that place their ethical principles, professional integrity, and psychological well-being to severe tests (1). In modern nursing scholarship, moral distress is recognized as one of the most critical psychological and professional challenges facing trainees and practitioners alike (2). The foundational conceptualization of moral distress was introduced by Andrew Jameton (1984), who distinguished it from ordinary ethical dilemmas by identifying external and systemic barriers—such as institutional hospital policies, clinical hierarchies, and time constraints—that prevent an individual from carrying out the action they know to be ethically appropriate (3). Repeated exposure to morally compromising situations without institutional recourse results in the progressive accumulation of an unresolved psychological burden termed "moral residue," which directly undermines professional identity development, impairs emotional well-being, and accelerates premature career attrition (4).

In developing countries, this ethical vulnerability is severely exacerbated by pervasive resource deficits in public sector healthcare systems (5). Public hospitals frequently grapple with disproportionately low nurse-to-patient ratios, heavy patient influxes, unmanageable workloads, and acute shortages of essential supplies and equipment (5). For undergraduate nursing students rotating through these underfunded wards, a stark contradiction arises between the idealized care standards taught in academic classrooms and the reality of bedside clinical compromises (6). Occupying the lowest echelon within rigid hospital hierarchies, student nurses

often find themselves powerless to voice ethical concerns, resulting in a state of forced "moral silence" followed by intense psychological suffering (6).

Global empirical literature documents a consistently high prevalence and burden of moral distress across undergraduate nursing cohorts (7). In a foundational assessment utilizing the Moral Distress Thermometer (MDT), Baghdadi et al. (2020) demonstrated that an overwhelming 74.2% of surveyed nursing students actively experienced varying degrees of moral distress during hospital training, with 34.6% reporting mild distress, 29.0% uncomfortable or distressing levels, and 10.4% enduring intense or worst-possible distress, whereas only 25.8% were unaffected (7). Corroborating these findings, Janatolmakan et al. (2021) observed consistent baseline moderate scores across both the Moral Distress Scale-Revised (MDS-R) and the MDT, noting mean frequency scores of 1.3 ± 0.7 out of 4 and severity scores of 1.8 ± 0.8 out of 4 (2). In a systematic review and meta-analysis, Salari et al. (2022) established an overall pooled mean moral distress score of 2.41 ± 0.65 on a 4-point scale, demonstrating that clinical overload strongly correlates with higher distress frequencies (3).

Furthermore, extensive multi-departmental investigations demonstrate that the intensity of ethical conflict varies sharply across clinical rotation environments (8). Petersen and Melzer (2023) showed that 54.2% of surveyed nursing students frequently faced mild to moderate distress during acute shifts, primarily triggered by perceived clinical incompetence and rushed care delivery (8). Gandossi et al. (2023) documented that 62.1% of nursing students encountered active ethical conflicts (mean severity index: 1.95 ± 0.72), especially when witnessing compromised dignity during end-of-life care (1). In critical care environments, Dehkordi et al. (2024) revealed that 71.5% of senior undergraduate trainees registered

high-intensity moral distress scores during Intensive Care Unit (ICU) rotations (6). Similarly, Aljabery et al. (2024) reported that 68.4% of nursing students endured severe ethical suffering tied directly to observing violations of established patient care standards (9), while Hosseinpour and Keshmiri (2024) reported elevated mean frequency (2.88 ± 0.54) and intensity (3.12 ± 0.61) scores among final-year students in emergency rotations (10).

Synthesizing extant scholarship indicates that moral distress among nursing trainees is governed by individual cognitive deficits such as knowledge gaps and lack of self-confidence, interpersonal pressures including fear of preceptors and academic grade anxiety, organizational shortages like inadequate staffing and unsafe conditions, and care-related dilemmas involving compromised patient dignity (1, 6, 7, 9). In Pakistan, particularly within Khyber Pakhtunkhwa (KPK), there is a distinct scarcity of empirical literature addressing how these internationally recognized stressors manifest among undergraduate nursing students (11). Most available national studies have concentrated predominantly on licensed staff nurses in tertiary centers, leaving a substantial gap regarding the clinical experiences of undergraduate trainees who represent the future nursing workforce (11). Public teaching hospitals across KPK face acute infrastructural challenges, severe overcrowding, and strict hierarchical traditions that place student nurses at high ethical vulnerability. Therefore, this study was designed to systematically assess the point prevalence and

factors associated with moral distress among undergraduate nursing students in Khyber Pakhtunkhwa, establishing an empirical baseline to foster moral resilience and advocate for ethically supportive clinical training environments.

2. Objective of the Study

The specific objectives of this study are:

1. To determine the prevalence of moral distress among undergraduate nursing students in Khyber Pakhtunkhwa (KPK), Pakistan.
2. To find out the factors associated with moral distress among undergraduate nursing students in Khyber Pakhtunkhwa (KPK), Pakistan.

3. Result and Discussion

The quantitative findings from $N = 294$ undergraduate nursing students across KPK confirm that moral distress is widespread and severe during clinical rotations. The mean age of the participants was 22.38 ± 1.64 years (range: 18–28 years). Male students comprised 74.1% ($n = 218$) while females represented 25.9% ($n = 76$). In terms of academic semester, 42.5% ($n = 125$) were enrolled in the 6th semester, 39.5% ($n = 116$) in the 8th semester, and 18.0% ($n = 53$) in the 4th semester. The vast majority were Muslim (88.4%), and ethnically, Pashtun students constituted 39.1%, followed by other ethnicities (32.0%), Punjabi (16.3%), and Hindko (12.6%). The largest distribution across clinical rotation wards was recorded in other/specialized departments (35.4%) and Medical Wards (21.8%).

Table 1: Demographic Characteristics of the Participants (N = 294)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age (Years)	Mean $\pm$ SD: 22.38 ± 1.64 (Range: 18–28)		
Gender	Male	218	74.1%
	Female	76	25.9%
Semester	4th Semester	53	18.0%
	6th Semester	125	42.5%
	8th Semester	116	39.5%
Religion	Muslim	260	88.4%
	Non-Muslim	34	11.6%
Ethnicity	Pashtun	115	39.1%

	Hindko	37	12.6%
	Punjabi	48	16.3%
	Other	94	32.0%
Clinical Placement	Medical Wards	64	21.8%
	Surgical Ward	33	11.2%
	Medical Emergency	51	17.3%
	Pediatrics Ward	42	14.3%
	Other Departments	104	35.4%

The overall mean score on the Moral Distress Thermometer (MDT) was 5.51 ± 2.06 (scale range: 0–10), confirming a moderate baseline distress level across the student population. Applying the operational definition of active distress {MDT 4 or above}, the overall point prevalence reached 82.0% (n = 241). In terms of severity categories, 48.0% (n = 141) experienced moderate distress, 34.0% (n = 100) suffered from severe distress, 17.7% (n = 52) reported mild distress, and only a solitary student (0.3%) indicated an absence of distress.

This documented prevalence of 82.0% is noticeably higher than the 74.2% reported by Baghdadi et al. (2020) among Saudi nursing trainees (7). Moreover, while Baghdadi et al. recorded that 25.8% felt zero distress, in the present sample, virtually all students experienced ethical distress (7). The mean intensity of 5.51 mirrors international observations where student distress consistently hovers at moderate thresholds, such as the findings of Janatolmakan et al. (2021) and Salari et al. (2022) (2, 3). The high proportion of severe distress (34.0%) reflects Aljabery et al. (2024), who documented acute suffering when care standards were compromised in clinical environments (9).

Figure 1: Moral Distress Severity Distribution (N = 294)

- 48.0% of respondents experienced moderate moral distress (scores 4–6).

- 34.0% of respondents experienced severe moral distress (scores 7–10).
- 17.7% of respondents experienced mild moral distress (scores 1–3).
- 0.3% of respondents experienced no moral distress (score 0).

Demographic cross-tabulation established statistically significant associations between moral distress severity and gender ($\chi^2 = 11.382$, df = 3, p = 0.010) as well as clinical rotation settings ($\chi^2 = 50.687$, df = 12, p < 0.001). Male students experienced significantly higher severe distress (38.5%) than females (21.1%). In KPK's socio-cultural context, male trainees face unique challenges and pressure to project competence, which conflicts with their subordinate clinical rank. Furthermore, clinical wards differed significantly, with Surgical Wards (42.4%) and Other specialized units (51.0%) generating the highest severe distress rates. This supports observations by Gandossi et al. (2023) and Dehkordi et al. (2024) that high-acuity surgical and specialized environments force students to observe compromised care or perform unfamiliar tasks under acute time constraints (1, 6). Conversely, academic semester did not demonstrate a significant association ($\chi^2 = 10.598$, p = 0.102), corroborating Kovanci and Atli Özbaş (2025), who explained that while junior trainees face transition anxiety, senior students accumulate unresolved moral residue over repeated exposure (4).

Table 2: Association between Demographic Variables and Moral Distress Severity (N = 294)

Demographic Variable	No Distress: n (%)	Mild: n (%)	Moderate: n (%)	Severe: n (%)	χ^2	df	p-value
Gender					11.382	3	0.01
Male	1 (0.5%)	31 (14.2%)	102 (46.8%)	84 (38.5%)			
Female	0 (0.0%)	21 (27.6%)	39 (51.3%)	16 (21.1%)			
Clinical Placement					50.687	12	< 0.001
Medical Wards	1 (1.6%)	12 (18.8%)	31 (48.4%)	20 (31.2%)			
Pediatrics Ward	0 (0.0%)	16 (38.1%)	20 (47.6%)	6 (14.3%)			
Medical Emergency	0 (0.0%)	15 (29.4%)	29 (56.9%)	7 (13.7%)			
Surgical Ward	0 (0.0%)	5 (15.2%)	14 (42.4%)	14 (42.4%)			
Other Departments	0 (0.0%)	4 (3.8%)	47 (45.2%)	53 (51.0%)			
Semester					10.598	6	0.102
4 th Semester	0 (0.0%)	6 (11.3%)	20 (37.7%)	27 (50.9%)			
6 th Semester	0 (0.0%)	22 (17.6%)	66 (52.8%)	37 (29.6%)			
8 th Semester	1 (0.9%)	24 (20.7%)	55 (47.4%)	36 (31.0%)			

Statistically significant at $p < 0.05$

Analysis of the 22-item checklist revealed that internal cognitive barriers were the most frequent reasons for withholding action: "Lack of confidence in self" (78.6%), "Nervousness and fear of being wrong" (65.6%), "Confusion over

matters" (63.3%), "Concerned over grades" (62.9%), and "Hospital rituals" (61.9%). Inferential Chi-square testing identified that 8 factors were statistically significant predictors of distress severity ($p < 0.05$; Table 3).

Table 3: Statistically Significant Withholding Factors Associated with Distress Severity

Contributing Factor Label	χ^2 Value	df	p-value	Severe Distress (Yes vs. No)
In general fear	15.618	3	0.001	43.3% vs 23.4%
Lack of knowledge	13.830	3	0.003	43.4% vs 24.8%
Nervousness and fear of being wrong	12.188	3	0.007	38.3% vs 25.7%
Lack of self-confidence for being a student	9.647	3	0.022	37.2% vs 22.2%
Being concerned over grades	9.254	3	0.026	39.5% vs 24.8%
Confusion over clinical matters	8.548	3	0.036	38.7% vs 25.9%
Reluctance due to previous failed attempts	8.510	3	0.037	40.0% vs 26.4%
Fear from assigned preceptor	8.093	3	0.044	40.7% vs 27.9%

Statistically significant at $p < 0.05$

These empirical outcomes confirm that students withhold ethical action predominantly due to internal self-doubt and fear of clinical authority. As emphasized by Getahun et al. (2024) and Gandossi et al. (2023), perceived powerlessness and fear of academic reprimand reinforce forced student passivity (1, 12). Conversely, external institutional barriers like hospital rituals (61.9%) and lack of time (52.0%) were widespread but not significantly associated with distress severity ($p > 0.05$). This demonstrates that while structural deficits form the physical background of care, the key trigger for severe distress is internal

psychological vulnerability and fear of punitive evaluation.

4. Conclusion

This study documents an 82.0% active moral distress prevalence among undergraduate nursing students in Khyber Pakhtunkhwa, with over a third experiencing severe distress. The escalation to severe moral distress is predominantly driven by internal psychological factors, including self-doubt, nervousness regarding errors, and evaluation anxiety tied to preceptors, rather than systemic resource shortages alone. Male students and those posted in surgical units demonstrate the

highest distress levels. Addressing this issue requires targeted interventions, including non-punitive mentorship models, simulation-based ethical dilemma training, and institutional psychological counseling to foster resilience and prevent premature attrition among future nurses.

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