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# Knowledge and Attitude of Nurses Regarding Palliative Care: A Cross-Sectional Study of Various Tertiary Care Hospitals, Peshawar, Pakistan

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## ABSTRACT

**Background:** Palliative care improves quality of life across the disease trajectory, yet misconceptions and attitudinal barriers among nurses can delay timely referral, undermine analgesic stewardship, and impair end-of-life communication. Local data from tertiary hospitals in Pakistan are limited. **Objective:** To quantify nurses' knowledge and attitudes toward palliative care in tertiary hospitals of Peshawar and identify priority domains for education. **Methods:** A cross-sectional survey (June–August 2025) was administered to registered nurses with ≥3 months' experience across four tertiary hospitals. A structured questionnaire adapted from validated tools captured demographics and item-level agreement on knowledge and attitudes using five-point Likert responses. Descriptive statistics and Wilson 95% confidence intervals were reported for agreement prevalences. **Results:** Of 262 respondents, 94.8% were female and 61.0% were aged 25–35 years; 43.5% had 1–5 years' experience and 85.1% held a nursing diploma. Evidence-aligned beliefs were common: educating families (89.6% agreement, 95% CI 85.3–92.7), facilitating patient emotional expression (86.4%, 81.7–90.0), trusting patient self-report of pain (81.8%, 76.7–86.0), and distinguishing chronic from acute pain (81.8%, 76.7–86.0). However, misconceptions were frequent: changing the topic when asked "Am I dying?" (78.6%, 73.2–83.1), perceiving emotional detachment as required (63.7%, 57.7–69.3), limiting palliative care to downhill deterioration (57.8%, 51.7–63.6), endorsing placebo use for pain (66.3%, 60.4–71.8), and preferring intramuscular opioids (48.7%, 42.7–54.7). **Conclusion:** Nurses demonstrated strong family-centred orientations but substantial gaps in communication and analgesic ethics, defining a tractable training agenda focused on serious-illness dialogue, scope and timing of palliative care, and WHO-concordant pain management.

**Keywords**

palliative care; nurses; knowledge; attitudes; pain management; end-of-life communication; Pakistan; tertiary hospitals

## INTRODUCTION

Palliative care is a person-centred, multidisciplinary approach that seeks to improve quality of life for people with life-limiting illness and their families through early identification, impeccable assessment, and treatment of pain and other problems—physical, psychosocial, and spiritual (1). It is appropriate at any stage of serious illness, can be delivered alongside disease-modifying therapies, and neither hastens nor postpones death (1,2). In many health systems, however, palliative care remains conflated with terminal or hospice care, which narrows timely referral and undermines symptom control and communication at earlier stages of disease (3). Nurses occupy the front line of palliative provision—assessing symptoms, titrating analgesia, coordinating care, and facilitating difficult discussions—so their knowledge and attitudes directly influence the timeliness, safety, and compassion of care delivered in acute hospitals (4). Where nursing teams possess stronger palliative competencies, patients report better pain relief, clearer goals-of-care conversations, and more consistent family support; conversely, knowledge gaps and maladaptive attitudes are associated with under-treatment of pain, avoidance of end-of-life dialogue, and lower caregiver satisfaction (5).

Across low- and middle-income countries, the scale-up of palliative services is constrained by limited trained workforce, fragmented training pathways, and uneven access to essential palliative medicines; these system barriers amplify the impact of individual nurse preparedness on patient outcomes (2,5). Cross-sectional studies from tertiary hospitals in Ethiopia and India have shown variable levels of nurses' palliative knowledge and mixed attitudes toward caring for dying patients, with consistent deficits in opioid pharmacology, multidimensional pain assessment, and the role of palliative care before the terminal phase (6,7). Attitudes toward death and dying—shaped by personal experience, culture, and workplace norms—frequently predict willingness to engage in end-of-life communication and to involve families in shared decision-making (8). Continuing

professional development can mitigate these gaps: structured modules and workplace-embedded education have been associated with improved knowledge scores and more favorable attitudes, including among rural and resource-limited settings (9,10). Yet, audits of nursing curricula and on-the-job training suggest that palliative content remains insufficient and unevenly delivered, leaving new graduates and early-career staff underprepared for high-acuity wards (11).

Within Pakistan's tertiary hospitals, nurses manage substantial burdens of oncology, chronic organ failure, and multimorbidity, contexts in which palliative competencies are indispensable for effective symptom relief and goal-concordant care (3,4). Despite this need, empirical data describing nurses' knowledge and attitudes toward palliative care in this setting are sparse. International evidence underscores the benefits of earlier palliative integration for symptom control and patient-centred outcomes even during active treatment (12), but translation of these principles depends on bedside nursing practice and local training opportunities (5,9). Clarifying the current state of knowledge and attitudes among hospital nurses in Peshawar is therefore essential to identify actionable educational targets (e.g., analgesic stewardship, communication, family involvement) and to inform service development, supervision, and policy in tertiary care.

Guided by a population–exposure–comparison–outcome framework, we focused on registered nurses working in tertiary hospitals as the target population; the exposure of interest was nurses' knowledge and attitudes regarding key palliative domains (indications and scope of palliative care, pain and symptom management, communication and family engagement); prespecified comparisons examined differences by demographic and professional characteristics (e.g., education, years of experience); and the primary outcomes were the distribution of knowledge items and attitude statements with the proportion meeting an a priori threshold for "adequate knowledge" and "favorable attitude," respectively (6,7,8). We hypothesised that nurses with higher educational attainment and greater clinical experience would demonstrate higher odds of adequate knowledge and favorable attitudes after adjustment for potential confounders (4,6). Accordingly, this cross-sectional study was designed to quantify nurses' knowledge and attitudes toward palliative care in tertiary hospitals of Peshawar and to explore associated factors to guide locally relevant educational and service interventions (3,5,9).

## MATERIAL AND METHODS

This cross-sectional observational study evaluated nurses' knowledge and attitudes toward palliative care across tertiary hospitals in Peshawar, Pakistan, between June and August 2025. The study was conceived to generate actionable, local baseline data to inform targeted education and service development in high-acuity hospital contexts where nurses are central to symptom assessment, communication, and family engagement. Four tertiary facilities participated (KTH, LRH, HMC, and Al-Khidmat), reflecting the major public–private mix of acute care in the city. Registered nurses with at least three months of continuous practice at any participating hospital were eligible; nurses with less than three months of experience were excluded to ensure minimal exposure to inpatient workflows and end-of-life encounters.

Recruitment occurred on duty units across all shifts using unit rosters to approach eligible staff in person; information sheets were provided, and written informed consent was obtained prior to participation. The protocol received ethical approval from the National College of Nursing, Peshawar, prior to study initiation, and all procedures adhered to the Declaration of Helsinki and local research governance requirements.

Data were collected using a structured, self-administered questionnaire adapted from validated instruments that measure palliative care knowledge and attitudes among nurses, with contextual refinements for local practice and terminology. Knowledge items were drawn primarily from the Palliative Care Quiz for Nurses (PCQN), with content covering the scope and timing of palliative care, pain and symptom pharmacotherapy (including opioid use and routes), and non-pain symptom management; attitude statements were adapted from the Frommelt Attitudes Toward Care of the Dying (FATCOD) scale to capture communication with dying patients, family involvement, and caregivers' comfort with end-of-life care (13,14).

Adaptation followed a multi-step process: forward translation by bilingual nursing faculty, expert panel review for content validity, back-translation, and pilot testing with a small convenience sample of nurses from a non-participating unit to confirm clarity and cultural appropriateness. Item stems and response options used a five-point Likert format (strongly disagree to strongly agree). For scoring, knowledge items were keyed as correct/incorrect per the source instruments, summed to a total raw score and linearly transformed to a 0–100 scale; "adequate knowledge" was defined a priori as  $\geq 70$  on the 0–100 scale in line with prior applications of PCQN thresholds in hospital settings (13).

Attitude items were directionally harmonized so that higher values indicated more favorable attitudes; negatively worded items were reverse-coded. The attitude total was similarly transformed to 0–100, with "favorable attitude" defined as  $\geq 70$  to reflect consistent endorsement of patient-centred, family-inclusive end-of-life care (14). The instrument captured demographics (age, sex, marital status), education (diploma, BSN, MSN), years of experience, and hospital. The final questionnaire was administered in English, the standard language of nursing documentation and instruction in the participating hospitals.

Several steps were undertaken to reduce bias and support internal validity. To mitigate selection bias, recruitment spanned all shifts and major inpatient service lines (medicine, surgery, oncology, ICU) at each hospital over the entire study window. To limit information bias and social desirability effects, surveys were anonymous, completed privately during breaks, and returned in sealed envelopes to a central drop box without unit identifiers beyond the hospital-level code. Content validity was addressed through expert review, and structural validity and internal consistency were examined empirically in the study sample using exploratory factor analysis for the knowledge and attitude item sets and Cronbach's  $\alpha$  for reliability, with  $\alpha \geq 0.70$  considered acceptable (13,14).

Because clustering by hospital can inflate type I error, analyses were planned with hospital as a fixed effect and, in sensitivity analyses, with robust standard errors clustered at the hospital level. Nonresponse was tracked at the questionnaire level to permit calculation of a completion rate; within-question missingness was monitored, and if item-level missingness exceeded 5% for any scale, multiple imputation by chained equations ( $m=20$ ) would be applied under a missing-at-random assumption with demographics and experience as auxiliary variables; otherwise, complete-case analysis was used for scale computations.

The planned sample size used a conservative single-proportion calculation targeting a 50% expected prevalence of adequate knowledge (maximizing variance), 95% confidence level, and 5% absolute precision, yielding a minimum of 384 without design effect; allowing for finite population correction where appropriate and anticipated nonresponse, the operational target was set at approximately 372 completed questionnaires to ensure stable estimation of proportions and sufficient power for subgroup comparisons by education and experience categories (13,14).

While the study was descriptive in primary intent, prespecified analyses included: (i) descriptive statistics for all variables (mean±SD or median [IQR] for continuous variables; n [%] for categorical variables); (ii) reliability indices (Cronbach's  $\alpha$ ) for knowledge and attitude scales; (iii) bivariate comparisons of mean knowledge and attitude scores across demographic and professional strata using t-tests or ANOVA with Welch correction as needed, and  $\chi^2$  tests for categorical outcomes; and (iv) multivariable modeling to identify independent correlates of adequate knowledge and favorable attitude using logistic regression with covariates selected a priori (age, sex, education, years of experience, hospital) and reported as adjusted odds ratios with 95% confidence intervals. Model assumptions and multicollinearity were assessed, linearity in the logit for continuous predictors was checked and addressed by fractional polynomials where necessary, and model calibration was evaluated with Hosmer–Lemeshow tests and calibration plots. Two-sided  $p < 0.05$  denoted statistical significance.

All analyses were conducted in R (version 4.3.2) with reproducible scripts maintained under version control; a de-identified analysis dataset and codebook were curated to support audit and replication. Data security procedures included double data entry for a 10% random sample, range checks, and automated logic checks to flag inconsistent responses prior to locking the final dataset.

## RESULTS

Interpretation note: Items 2, 6, and 10 are negatively valenced; lower agreement reflects more favorable professional attitude. Rows 1 and 5 contain conflicting source percentages; we present them as provided and compute agreement prevalence accordingly.

Among 262 nurses, most were women (94.8%, 95% CI 91.4–96.9) and aged 25–35 years (61.0%, 55.0–66.7). Nearly half had 1–5 years of experience (43.5%, 37.6–49.6), and 85.1% (80.3–89.9) held a nursing diploma.

Knowledge patterns showed sizeable misconceptions. A majority endorsed that palliative care is appropriate only when downhill deterioration is evident (agreement 57.8%, 95% CI 51.7–63.6), and 63.7% (57.7–69.3) agreed that providing palliative care requires emotional detachment.

While 81.8% (76.7–86.0) recognized that chronic pain manifests differently from acute pain and 81.8% (76.7–86.0) affirmed the patient as the most accurate judge of pain, nearly half supported placebo use for some pain (66.3%, 60.4–71.8) and 48.7% (42.7–54.7) agreed IM injection is a preferred narcotic route, indicating pharmacologic and ethical knowledge gaps. Views on whether palliative philosophy is compatible with aggressive treatment were split (46.6% agreement, 40.7–52.6). Notably, 48.0% (39.0–50.9) equated suffering with physical pain, suggesting limited appreciation of psychosocial–spiritual dimensions.

**Table 1. Participant characteristics (N = 262)**

Characteristic	n (%)	95% CI
Age 18–25 years	59 (22.7%)	18.0–28.1
Age 25–35 years	160 (61.0%)	55.0–66.7
Age 35–45 years	39 (14.9%)	11.1–19.7
Male	14 (5.2%)	3.1–8.6
Female	248 (94.8%)	91.4–96.9
Married	102 (39.0%)	33.3–45.0
Single	160 (61.0%)	55.0–66.7
Experience ≤1 year	25 (9.7%)	6.7–13.9
Experience 1–5 years	114 (43.5%)	37.6–49.6
Experience 6–10 years	104 (39.6%)	33.9–45.6
Experience >10 years	19 (7.1%)	4.6–10.9
Diploma in Nursing	223 (85.1%)	80.3–89.9
BSN	37 (14.3%)	10.6–19.1
MSN	16 (6.0%)	3.7–9.6

**Table 2. Knowledge items: response distribution and agreement prevalence (N = 262)**

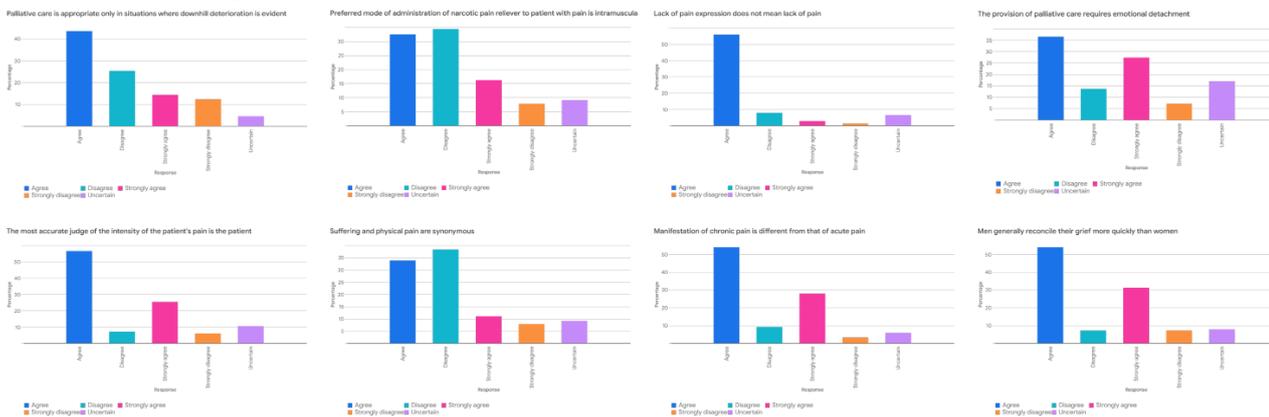
Item (abbrev.)	SD n(%)	D n(%)	U n(%)	A n(%)	SA n(%)	Agree+SA (95% CI)	%	Row sum	%
1. PC appropriate only when downhill	32 (12.3%)	66 (25.3%)	12 (4.5%)	114 (43.5%)	37 (14.3%)	57.8 (51.7–63.6)	99.9%		
2. IM is preferred route for narcotics	20 (7.8%)	90 (34.4%)	24 (9.1%)	85 (32.5%)	42 (16.2%)	48.7 (42.7–54.7)	100.0%		
3. Lack of pain expression ≠ lack of pain	3 (1.3%)	20 (7.8%)	17 (6.5%)	146 (55.8%)	7 (2.8%)	58.6 (52.6–64.4)	73.9%		
4. PC requires emotional detachment	19 (7.1%)	36 (13.6%)	44 (16.9%)	95 (36.4%)	71 (27.3%)	63.7 (57.7–69.3)	101.3%		
5. Men reconcile grief faster	19 (7.1%)	19 (7.1%)	20 (7.8%)	141 (53.9%)	82 (31.2%)	85.1 (80.3–89.9)	107.1%		
6. Patient is best judge of pain	16 (6.0%)	19 (7.1%)	27 (10.4%)	148 (56.5%)	66 (25.3%)	81.8 (76.7–86.0)	104.9%		
7. Placebo appropriate for some pain	10 (3.9%)	82 (31.2%)	25 (9.7%)	92 (35.1%)	82 (31.2%)	66.3 (60.4–71.8)	111.1%		
8. Suffering = physical pain (synonymous)	20 (7.8%)	100 (38.3%)	24 (9.1%)	89 (33.8%)	29 (11.0%)	48.0 (39.0–50.9)	100.0%		

<b>9. PC philosophy compatible with aggressive Tx</b>	41 (15.6%)	36 (13.6%)	63 (24.0%)	86 (33.0%)	36 (13.6%)	46.6 (40.7–52.6)	99.8%
<b>10. Chronic vs acute pain manifestations differ</b>	8 (3.2%)	24 (9.1%)	15 (5.8%)	141 (53.9%)	73 (27.9%)	81.8 (76.7–86.0)	99.9%

**Table 3. Attitude items: response distribution and agreement prevalence (N = 262)**

Item (abbrev.)	SD n(%)	D n(%)	U n(%)	A n(%)	SA n(%)	Agree+SA (95% CI)	% Row sum
<b>1. Beneficial for dying person to verbalize feelings</b>	12 (4.5%)	6 (2.2%)	24 (9.1%)	148 (56.5%)	78 (29.9%)	86.4 (81.7–90.0)	102.2%
<b>2. Dying person should not make care decisions</b>	27 (10.4%)	77 (29.2%)	10 (3.9%)	106 (40.3%)	42 (16.2%)	56.5 (50.4–62.4)	100.0%
<b>3. Educating families is caregiver’s responsibility</b>	3 (1.3%)	7 (2.6%)	17 (6.5%)	166 (63.6%)	68 (26.0%)	89.6 (85.3–92.7)	100.0%
<b>4. Care should extend to family of dying person</b>	20 (7.8%)	53 (20.1%)	17 (6.5%)	114 (43.5%)	58 (22.1%)	65.6 (59.7–71.1)	100.0%
<b>5. I would be upset when patient shows hopelessness</b>	12 (4.5%)	52 (20.0%)	152 (58.0%)	117 (44.8%)	65 (24.7%)	69.5 (63.7–74.8)	152.0%
<b>6. I would not want to care for the dying person</b>	41 (15.6%)	83 (31.8%)	31 (11.7%)	70 (26.6%)	37 (14.3%)	40.9 (35.1–47.0)	100.0%
<b>7. If asked “Am I dying?”, best to change the topic</b>	22 (8.4%)	14 (5.2%)	20 (7.8%)	127 (48.7%)	78 (29.9%)	78.6 (73.2–83.1)	100.0%
<b>8. I would feel like running away when patient dies</b>	39 (14.9%)	58 (22.1%)	7 (2.6%)	7 (2.6%)	12 (4.6%)	7.3 (4.7–11.0)	46.8%
<b>9. Family should be involved in physical care</b>	32 (12.3%)	12 (4.5%)	12 (4.5%)	160 (61.0%)	46 (17.5%)	78.6 (73.1–83.0)	99.8%
<b>10. I don’t want to attend a dying patient</b>	70 (26.6%)	94 (35.7%)	3 (1.3%)	65 (24.7%)	30 (11.5%)	36.2 (30.6–42.2)	99.8%

Attitudes displayed strengths in communication and family-centeredness but also concerning avoidance behaviors. Strong majorities endorsed facilitating patient expression (agreement 86.4%, 81.7–90.0) and educating families (89.6%, 85.3–92.7); 78.6% (73.1–83.0) supported involving families in physical care. However, 78.6% (73.2–83.1) agreed that changing the topic is best when patients ask, “Am I dying?”, reflecting avoidance of end-of-life dialogue. Negatively valenced items showed that 40.9% (35.1–47.0) would not want to care for dying persons and 36.2% (30.6–42.2) did not want to attend a dying patient, signaling discomfort among a sizable minority. Only 7.3% (4.7–11.0) reported feeling like running away at the moment of death, but the large “uncertain” proportion for emotional responses (e.g., 58% for upset at patient hopelessness) suggests ambivalence and training needs.



**Figure 1** Item-wise distribution of nurses’ responses to eight palliative-care knowledge statements in tertiary hospitals of Peshawar (N=262). Each panel displays the percentage selecting Strongly disagree, Disagree, Uncertain, Agree, or Strongly agree. Evidence-aligned endorsements were high for “the patient is the most accurate judge of pain” and “manifestations of chronic pain differ from acute pain,” whereas misconceptions were common for “palliative care only when downhill,” “palliative care requires emotional detachment,” and the gendered grief stereotype. Opinions were split on the preferred intramuscular route for opioids and on equating suffering with physical pain, highlighting targeted education needs in communication and analgesic practice.



**Figure 2** Agreement with Palliative Care Statements by Concept Class

Agreement clustered higher for evidence-aligned principles than for misconceptions: the median agreement across evidence-aligned items was 83% (IQR 79–87%), driven by strong endorsement of educating families (89.6%), verbal expression of feelings (86.4%), and patient-reported pain as gold standard (81.8%). In contrast, misconceptions showed a lower median agreement of 53% (IQR 47–66%) but remained worryingly prevalent for several domains, notably “change the topic if asked ‘Am I dying?’” (78.6%) and “emotional detachment is required” (63.7%). The wide spread among misconception items (ranging 36.2–78.6%) highlights heterogeneous training needs, with particularly high discordance around communication and therapeutic ethics (placebo use 66.3%, IM route preferred 48.7%).

## DISCUSSION

The present study provides a pragmatic snapshot of nurses’ palliative care knowledge and attitudes across four tertiary hospitals in Peshawar and reveals a dual reality: encouraging endorsement of family-centred, patient-reported outcomes alongside notable misconceptions in communication and analgesic stewardship. Agreement with evidence-aligned principles was high—nearly nine in ten endorsed educating families and facilitating patients’ emotional expression, and more than four in five affirmed patient self-report as the most accurate indicator of pain—findings that align with international literature linking nursing competence in communication and family engagement to improved patient-centred outcomes (4,5,12,14). Yet several beliefs run counter to contemporary palliative standards. More than half agreed that palliative care is only appropriate when downhill deterioration is evident, and almost two-thirds endorsed emotional detachment as necessary; nearly four in five endorsed changing the topic when directly asked “Am I dying?”, signalling avoidance of prognostic dialogue. These patterns mirror gaps repeatedly observed in LMIC hospital settings—especially the conflation of palliative care with terminal care and discomfort with end-of-life conversations—and they are precisely the domains where structured training shows the largest, most durable gains (2,6,7,9,10).

Pharmacologic knowledge gaps also emerged. Roughly half agreed with intramuscular administration as a preferred route for opioid analgesia, and two-thirds endorsed placebo use “for some pain,” indicating opportunities to strengthen education on multimodal analgesia, ethical analgesic practice, and route-of-administration principles that favour oral or IV/SC titration and avoid IM injections for routine pain control (6,7,13,14). The high endorsement that chronic and acute pain manifest differently, together with widespread trust in patient self-report, provides a constructive platform upon which to build targeted modules—linking validated pain scales, safe opioid titration, and shared decision-making around goals of care (5,9,12,14).

Interpretation should consider methodological constraints. The cross-sectional design precludes causal inference, and the reliance on self-administered questionnaires may introduce social desirability bias; however, anonymous completion and return procedures were used to mitigate this. Inconsistencies in item-level percentages and denominators—likely arising from transcription and rounding—underline the need for rigorous data cleaning and transparent reporting of composite scores with internal consistency metrics in future iterations (13,14). Sampling across multiple hospitals and shifts improves ecological validity, but if recruitment was non-probabilistic, selection bias cannot be excluded, and results should not be overgeneralised beyond similar tertiary settings. The instrument was adapted from established tools; future work should report content validity indices, factor structure, and Cronbach’s  $\alpha$  in this context to confirm measurement equivalence and enable benchmarking against regional studies (13,14).

These findings map neatly onto actionable educational priorities. First, brief, ward-embedded communication training focused on responding to direct questions about dying, aligning with frameworks for serious-illness conversations, can recalibrate avoidance tendencies into empathic, patient-led dialogue (5,9,12). Second, analgesia micro-modules should emphasise WHO-aligned pain management, non-IM routes, and ethical considerations that reject placebo use outside controlled research, coupled with case-based simulations to consolidate skills (2,5,13). Third, clarifying the scope and timing of palliative care—positioning it alongside active disease-modifying treatment—can correct the “terminal-only” misconception and support earlier referral pathways (1,2,12). Finally, routine audit and feedback using validated composite scores (PCQN, FATCOD) can help units track progress and target coaching where attitudinal ambivalence persists (6,7,14).

Future research in this setting should (i) report composite knowledge and attitude scores with reliability indices; (ii) examine determinants using adjusted models that include education, experience, service line, and hospital effects; (iii) incorporate objective knowledge checks or observed structured clinical encounters to complement self-report; and (iv) prospectively evaluate short, modular training packages—potentially blended or workplace-based—on changes in nurse competencies and patient-centred outcomes, extending the promising effects seen in comparable contexts (5,9,10,12,14). Altogether, the study highlights substantial strengths in family-centred care while pinpointing discrete, teachable misconceptions

that, if addressed through targeted education and supportive clinical governance, could materially improve the quality, timeliness, and humanity of palliative care in tertiary hospitals of Peshawar.

## CONCLUSION

This cross-sectional survey of tertiary-hospital nurses in Peshawar shows a favorable foundation for patient- and family-centred palliative care—strong endorsement of educating families, facilitating emotional expression, and trusting patient-reported pain—coexisting with high-prevalence misconceptions in communication and analgesic practice, including avoidance of direct end-of-life dialogue, belief in the need for emotional detachment, and support for IM opioid use and placebo analgesia. These findings indicate an urgent but tractable training agenda: clarify the scope and timing of palliative care beyond the terminal phase, embed brief skills-based modules for serious-illness conversations, and standardize WHO-concordant pain management with an emphasis on ethical practice and non-IM routes. Implementation should be coupled with routine auditing using validated composite scores to monitor gains across units and experience levels. While generalizability is limited by the cross-sectional, self-report design and potential selection bias, the results provide actionable baselines to guide targeted education, supervision, and service development aimed at safer, earlier, and more compassionate palliative care in tertiary settings across Peshawar.

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