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KNOWLEDGE AND ATTITUDE OF SENIOR STAFF NURSES REGARDING GERIATRIC HEALTH CARE IN A TERTIARY PUBLIC HOSPITAL

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Abstract

Background: The population of older adults is growing rapidly, and nurses are central to their hospital care. In Pakistan, dedicated evidence on senior staff nurses in tertiary public hospitals remains limited. **Objective**: This study assessed the knowledge and attitude of senior staff nurses regarding geriatric health care, examined associations between demographic characteristics and knowledge and attitude, and examined the correlation between knowledge and attitude. **Methods**: A quantitative, descriptive, cross-sectional study was conducted among 186 senior staff nurses at two tertiary public hospitals in Lahore, Pakistan (Jinnah Hospital and Services Hospital). Data were collected with a structured, self-administered questionnaire and analysed in IBM SPSS Statistics version 26.0 using frequencies, percentages, means and standard deviations, chi-square tests and Pearson correlation, with $p < 0.05$ as statistically significant. **Results**: Good knowledge was reported by 36.0% of nurses, moderate knowledge by 33.3% and poor knowledge by 30.6%. A positive attitude was reported by 50.5% and a negative attitude by 49.5%. The mean knowledge score was 24.45 (SD 3.90) and the mean attitude score was 37.16 (SD 7.64). Gender was not significantly associated with knowledge level (chi-square = 0.222, $p = 0.895$) or attitude level (chi-square = 1.000, $p = 0.317$). Knowledge and attitude scores were weakly and non-significantly correlated ($r = -0.069$, $p = 0.347$).

From the raw dataset supplied by the client, qualification was significantly associated with knowledge level (chi-square = 13.436, df = 6, p = 0.037) and experience was significantly associated with attitude level (chi-square = 8.445, df = 3, p = 0.038), while geriatric training was not associated with either outcome. Conclusion: Knowledge was moderate overall and attitudes were almost evenly divided between positive and negative. Knowledge alone was not associated with a more positive attitude in this sample, which points to a need for structured geriatric education, regular training and supportive workplace measures alongside knowledge building.

Keywords: geriatric health care; knowledge; attitude; senior staff nurses; tertiary public hospital; Pakistan

Introduction

The world is undergoing a rapid demographic transition. The World Health Organization (WHO, 2025) reports that the population aged 60 years and over will rise from 1 billion in 2020 to 1.4 billion by 2030 and will double to 2.1 billion by 2050, with 80% of older people living in low- and middle-income countries by 2050. The United Nations (UN, 2024) similarly reports that, by the late 2070s, the population aged 65 years and over will surpass the number of children under 18 years. In Pakistan, the geriatric population has been reported as above eight million and projected to reach 27 million by 2050 (AKU Thesis, 2023, as cited in the source thesis), placing growing pressure on a health system in which most tertiary hospitals have no specialised geriatric wards and older patients are cared for alongside general adult patients.

Nurses are typically the first point of contact for hospitalised older adults, the primary monitors of clinical deterioration and the main educators for patients and families. Knowledge of ageing, geriatric syndromes, polypharmacy, fall risk, pressure ulcer prevention, cognitive assessment and communication, together with a favourable attitude toward older adults, is therefore central to safe care. International evidence shows a mixed and often troubling picture. In Hawassa City, Ethiopia, only 39.2% of nurses demonstrated good knowledge while 49.3% displayed a positive attitude toward the nursing care of older adults (Abera et al., 2024). In Rangpur City, Bangladesh, more than one third of nurses had only average knowledge, and 36.2% held negative attitudes on the Kogan Attitude Scale, although 97.7% acknowledged the need for dedicated geriatric wards and 93.8% recognised the need for specialised training (Mahmud et al., 2020). The Bangladeshi study is the closest parallel to the present study, as it also examined senior staff nurses in a tertiary public hospital using a descriptive cross-sectional design.

Evidence from Pakistan points in the same direction. A study in Peshawar reported gaps in knowledge and attitudes regarding the care of geriatric patients among nurses (Ali et al., 2020). A study among staff nurses in the medical and surgical wards of Jinnah Hospital, Lahore, reported poor knowledge in 47.9%, moderate knowledge in 27.5% and good knowledge in only 24.6%, although 63.4% displayed a positive attitude toward caring for older patients (Shareef et al., 2026, as cited in the source thesis). A study in tertiary hospitals of South Punjab likewise found that knowledge gaps persisted even where mean knowledge was categorised as good, with misconceptions about placebo use and emotional detachment and discomfort with end-of-life conversations (Mulazim et al., 2025, as cited in the source thesis). Qualitative work from Karachi has described heavy workloads, insufficient staffing, physical frailty of elderly patients and absence of specialised training as barriers to adequate geriatric care (Shoaib et al., 2025).

Senior staff nurses carry particular importance in this picture because they hold greater clinical authority, mentor junior colleagues and directly shape ward level care standards. Gaps at this level therefore extend beyond the individual nurse. Yet few studies in Pakistan have isolated senior staff nurses in a tertiary public hospital as the target population. The present study addresses that gap. Its objectives were to assess the knowledge and attitude of senior staff nurses regarding geriatric health care, to examine associations between demographic characteristics and knowledge and attitude, and to examine the correlation between knowledge and attitude.

Methods

Study design and setting

A quantitative, descriptive, cross-sectional study was conducted at two tertiary public hospitals in Lahore, Punjab, Pakistan: Jinnah Hospital and Services Hospital. Both are large government run tertiary care facilities providing medical, surgical, orthopaedic and critical care services and regularly admitting a significant number of geriatric patients across multiple wards.

Participants and sample size

The target population was senior staff nurses employed at the two hospitals. The combined population recorded from nursing administration records was 300 (150 at each hospital). The sample size was calculated with the Raosoft finite population correction formula at 95% confidence, an assumed proportion of 50% and a 5% margin of error, giving 169, plus a 10% allowance for non-response (17), for a final sample of 186 senior staff nurses. A non-probability convenience sampling technique was used, as reconciled in the corrected thesis (Saadullah_Thesis_CORRECTED.docx). The original

thesis methods chapter described stratified random sampling with a ward-wise allocation table, but that table was itself labelled illustrative and its ward totals did not match the realised ward distribution; the stratified description has therefore been removed in the corrected thesis and is not used here. Convenience sampling may introduce selection bias and limits representativeness.

Eligible participants were senior staff nurses in direct patient care wards at the two hospitals who were present and on active duty during data collection and who gave written informed consent. The wards represented in the final sample were Medical, Surgical, Orthopaedic, ICU, Emergency, and Geriatric, as in the corrected thesis. Nurses in purely administrative, teaching, or non-clinical roles with no direct patient contact, nurses on extended leave, and nurses who declined consent or withdrew before completing the questionnaire were excluded.

Instrument

Data were collected with a structured, self-administered questionnaire adapted from previously validated instruments used in comparable studies (Mahmud et al., 2020; Kaur et al., 2014), with modifications for the tertiary hospital context of Lahore. The questionnaire had three sections: demographic characteristics (age, gender, marital status, educational qualification, years of clinical experience, hospital and ward of posting, monthly income bracket and prior receipt of formal geriatric training); knowledge items covering the normal ageing process, common geriatric syndromes, polypharmacy, pressure ulcer prevention, nutritional needs and pain assessment in older patients; and attitude statements adapted from Kogan's Attitudes Toward Old People Scale. The questionnaire reproduced in the source thesis appendix contains 10 knowledge items (items 1 to 10) and 7 attitude items (items 11 to 17). Content validity was established through review by a panel of at least three subject matter experts (a senior nursing faculty member, a geriatrician or internal medicine consultant, and a biostatistician), with a Content Validity Index of 0.80 or above set as the minimum threshold for item retention. Face validity was assessed with 5 to 10 senior staff nurses not in the final sample. Internal consistency was assessed with Cronbach alpha during pilot testing, with 0.70 or above considered acceptable. A pilot study was conducted among 19 senior staff nurses (about 10% of the final sample) at a separate tertiary hospital not included in the main study; pilot data were not included in the final results. The printed questionnaire contains 10 knowledge items (items 1 to 10) and 7 attitude items (items 11 to 17), each attitude item with four response options as printed (Strongly Agree, Agree, Disagree, Strongly Disagree). The corrected thesis removes the original five-point Likert claim and the score ranges 0 to 10 and 0 to 07, which do not

match the printed questionnaire or the reported score ranges; the scoring note in the corrected thesis applies here as well.

Cut points in the raw dataset supplied by the client are: knowledge Poor 18-21, Moderate 22-26, Good 27-30; attitude Negative 25-37, Positive 38-50. These cut points describe that dataset only and do not resolve the instrument version mismatch with the thesis appendix (10 knowledge items and 7 attitude items) or with the data collection sheet (25 knowledge items and 20 attitude items), which remains flagged in the Limitations.

Data collection and ethics

Following ethical approval, the researcher visited selected wards at both hospitals, briefed eligible nurses, obtained written informed consent and collected the self-administered questionnaire on the same day, with responses coded numerically to maintain confidentiality. Data collection was carried out over approximately 6 to 8 weeks across both hospitals. Ethical approval was obtained from the Institutional Review Board or Ethics Committee and the administrations of both hospitals. Participation was voluntary, nurses could withdraw at any time without professional consequence, confidentiality was maintained through numerical coding and password protected storage, and data use was restricted to academic and research purposes.

Data analysis

Data were entered, cleaned and analysed in IBM SPSS Statistics version 26.0. Descriptive statistics (frequencies, percentages, means and standard deviations) summarised demographic characteristics, knowledge scores and attitude scores. Chi-square tests examined associations between demographic variables and knowledge and attitude categories, and Pearson correlation examined the relationship between knowledge and attitude scores. A p value below 0.05 was considered statistically significant. The source thesis methods also mention independent t tests and one-way ANOVA for comparisons across hospitals, wards and demographic subgroups, but no t test or ANOVA results are presented in its results chapter; this article now reports the full set of chi-square, t test, ANOVA, and Pearson results computed from the raw dataset supplied on 2026-01-02. Reproducibility note: The new tests reported here were computed from the supplied Excel file and are reproducible with the accompanying SPSS syntax file (Saadullah_SPSS_Syntax.sps). They should be presented as SPSS output only after that syntax has been run in SPSS, because no SPSS installation was available in the environment where this revised article was prepared.

Results

A total of 186 senior staff nurses participated. The largest age group was 31 to 40 years (68, 36.6%), followed by 21 to 30 years (66, 35.5%), 41 to 50 years (40, 21.5%) and 51 years and above (12, 6.5%). Most participants were female (150, 80.6%) and married (111, 59.7%). Half held a Bachelor of Science in Nursing qualification (94, 50.5%), followed by Post RN BSN (45, 24.2%), diploma (32, 17.2%) and Master of Science in Nursing (15, 8.1%). The largest experience group was 6 to 10 years (66, 35.5%), followed by 1 to 5 years (56, 30.1%), 11 to 15 years (52, 28.0%) and 16 years and above (12, 6.5%). By ward, the largest group was intensive care (40, 21.5%), followed by geriatric (34, 18.3%), surgical (33, 17.7%), orthopaedic (31, 16.7%), emergency (25, 13.4%) and medical (23, 12.4%). More than half had not received formal geriatric training (107, 57.5%), while 79 (42.5%) had received such training.

Table 1. Demographic characteristics of participants (n = 186)

Characteristic	Category	n	%
Age (years)	21 to 30	66	35.5
	31 to 40	68	36.6
	41 to 50	40	21.5
	51 and above	12	6.5
Gender	Female	150	80.6
	Male	36	19.4
Marital status	Single	75	40.3
	Married	111	59.7
Education	BSN	94	50.5
	Post RN BSN	45	24.2
	Diploma	32	17.2
	MSN	15	8.1
Experience (years)	1 to 5	56	30.1
	6 to 10	66	35.5
	11 to 15	52	28.0
	16 and above	12	6.5
Working ward	Medical	23	12.4
	Surgical	33	17.7
	Orthopaedic	31	16.7
	ICU	40	21.5
	Emergency	25	13.4
	Geriatric	34	18.3
Previous geriatric	Yes	79	42.5

training			
	No	107	57.5

Knowledge was classified as good in 67 nurses (36.0%), moderate in 62 (33.3%) and poor in 57 (30.6%), with a mean knowledge score of 24.45 (SD 3.90, range 18 to 30). Attitude was classified as positive in 94 nurses (50.5%) and negative in 92 (49.5%), with a mean attitude score of 37.16 (SD 7.64, range 25 to 50). The overall picture is therefore one of moderate knowledge and an almost evenly divided attitude, rather than uniformly good knowledge or a clearly positive attitude.

Table 2. Knowledge and attitude scores and levels (n = 186)

Measure	Mean (SD)	Range	Level	n (%)
Knowledge score	24.45 (3.90)	18 to 30	Good	67 (36.0)
			Moderate	62 (33.3)
			Poor	57 (30.6)
Attitude score	37.16 (7.64)	25 to 50	Positive	94 (50.5)
			Negative	92 (49.5)

For gender, there was no significant association with knowledge level (chi-square = 0.222, p = 0.895) or with attitude level (chi-square = 1.000, p = 0.317), as reported in the original thesis and reproduced exactly from the raw dataset supplied by the client (Chapter_4_Raw_Data_186_Sample.xlsx, n = 186). The remaining demographic associations, now tested from that raw dataset, are reported in the next section.

Table 3. Gender associations and knowledge-attitude correlation

Analysis	Result	p value	Interpretation
Gender and knowledge level	Chi-square = 0.222	0.895	Not significant
Gender and attitude level	Chi-square = 1.000	0.317	Not significant
Knowledge and attitude scores	Pearson r = -0.069	0.347	Weak, negative, not significant

Pearson correlation between knowledge and attitude scores was weak, negative and statistically non-significant (r = -0.069, p = 0.347). In this sample, higher knowledge scores were not associated with more positive attitudes toward geriatric health care.

Demographic associations from the raw dataset

Two demographic associations are significant at p below 0.05. Qualification was significantly associated with knowledge level (chi-square = 13.436, df = 6, p = 0.037,

Cramers V = 0.190). Post RN BSN nurses had good knowledge in only 7 of 45 cases (15.6%), compared with 42 of 94 BSN nurses (44.7%). One expected cell count is below 5, so this result should be read as suggestive rather than definitive. Experience was significantly associated with attitude level (chi-square = 8.445, df = 3, p = 0.038, Cramers V = 0.213). Only 2 of 12 nurses (16.7%) with 16 or more years of experience had a positive attitude, compared with 39 of 66 (59.1%) with 6-10 years. All other demographic associations by chi-square were non-significant, including geriatric training with knowledge (chi-square = 0.550, p = 0.760) and with attitude (chi-square = 0.016, p = 0.900), and t tests for scores by training were also non-significant (knowledge p = 0.802, attitude p = 0.903). Training therefore did not distinguish knowledge or attitude in this dataset, contrary to the original thesis discussion. ANOVA results support the same pattern: experience against attitude score (F = 2.695, p = 0.047) and ward against knowledge score (F = 2.633, p = 0.025) were significant, while all other ANOVA results were non-significant. Cut points in this dataset are: knowledge Poor 18-21, Moderate 22-26, Good 27-30; attitude Negative 25-37, Positive 38-50. The full analysis is in the companion report Saadullah_Raw_Data_Analysis_Report.docx, with SPSS syntax in Saadullah_SPSS_Syntax.sps. Note on 2x2 chi-square tests: For 2x2 tables against attitude level, chi-square values reported here are Yates continuity-corrected values, as in the original thesis for gender. Uncorrected Pearson values are: gender and attitude 1.405, p = 0.236; marital status and attitude 1.500, p = 0.221; geriatric training and attitude 0.075, p = 0.784. Significance conclusions are unchanged under either method. In SPSS output, read the continuity correction row for these three tables.

Demographic variable	Knowledge level: chi-square (df), p	Attitude level: chi-square (df), p
Age group	7.150 (6), p = 0.307	0.831 (3), p = 0.842
Gender	0.222 (2), p = 0.895	1.000 (1), p = 0.317
Marital status	0.954 (2), p = 0.621	1.156 (1), p = 0.282
Qualification	13.436 (6), p = 0.037	5.747 (3), p = 0.125
Experience	7.533 (6), p = 0.274	8.445 (3), p = 0.038
Ward	12.822 (10), p = 0.234	7.439 (5), p = 0.190
Geriatric training	0.550 (2), p = 0.760	0.016 (1), p = 0.900

Discussion

This study found moderate knowledge and a balanced attitude among senior staff nurses in two tertiary public hospitals in Lahore. About one third of nurses had good knowledge, one third moderate and just under one third poor, while positive and negative attitudes were almost equal. That pattern is consistent with the wider Pakistani

and low-resource literature, in which nurses often show a reasonable foundation in geriatric care but clear gaps in comprehensive assessment, age-related physiological change, dementia management, fall prevention, polypharmacy and psychosocial care, and in which attitudes are shaped as much by workload, staffing, institutional support and training opportunities as by factual knowledge alone.

The comparison with earlier Pakistani work is instructive. The Jinnah Hospital study cited in the source thesis reported a lower share of good knowledge (24.6%) and a higher share of positive attitude (63.4%) than the present study, while the present study found a higher share of good knowledge (36.0%) but a lower share of positive attitude (50.5%). That contrast reinforces the central finding here: a positive attitude cannot be assumed from knowledge, and knowledge cannot be assumed from a positive attitude. The non-significant, weakly negative correlation in the present study ($r = -0.069$) makes the same point statistically. It does not show that knowledge harms attitude; with $p = 0.347$, it shows no reliable linear relationship in this sample. Attitudes are plausibly shaped by workplace environment, organisational support, workload, previous clinical experience, cultural beliefs and opportunities for professional development, all of which lie outside a knowledge questionnaire.

The training gap is the most actionable finding. More than half of the participants (57.5%) had not received formal geriatric training, in a setting where older patients are cared for alongside general adult patients without dedicated geriatric wards in most tertiary hospitals. Structured geriatric education, continuing nursing education, competency based workshops on comprehensive geriatric assessment, communication, medication safety and evidence based management of older adults, and supportive staffing and workplace policies are therefore the logical response, rather than knowledge testing alone. The source thesis discussion also notes that nurses who receive specialised education or continuing education in geriatrics tend to achieve higher knowledge scores in previous research; that statement is a literature comparison, not a tested subgroup finding in the present study, because no training subgroup test statistics are presented in its results chapter.

The near even split in attitude deserves equal attention. A workforce in which almost half of senior nurses hold a negative attitude toward geriatric care, even while many hold good or moderate knowledge, is a workforce in which care quality, communication and patient centred decision making for older adults are at risk. Interventions that only add factual content, without addressing workload, staffing, recognition of geriatric nursing as a specialism and regular exposure to well supported geriatric practice, are unlikely to close that gap.

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Conclusion

Senior staff nurses in the two hospitals studied showed moderate knowledge and a balanced attitude regarding geriatric health care. Good knowledge was present in 36.0%, moderate knowledge in 33.3% and poor knowledge in 30.6%; a positive attitude was present in 50.5% and a negative attitude in 49.5%. Gender was not significantly associated with knowledge or attitude, and knowledge and attitude scores were not significantly correlated. Strengthening continuing nursing education, providing regular geriatric training workshops, strengthening geriatric nursing within undergraduate and postgraduate curricula, developing standardised geriatric care protocols, maintaining supportive staffing and workplace environments, and encouraging multidisciplinary collaboration are recommended. Future research should use multicentre designs with larger samples and different settings across Pakistan, and should test whether educational interventions improve knowledge, attitudes and actual clinical practice, which the present study did not measure.

Limitations

First, the study was conducted in selected tertiary public hospitals in Lahore only, so findings may not generalise to all hospitals or settings across Pakistan. Second, the cross-sectional design assessed knowledge and attitude at a single point in time, so causal relationships cannot be established. Third, sampling was by non-probability convenience sampling, as reconciled in the corrected thesis, which may have introduced selection bias and limited representativeness. Fourth, data were collected with a self-administered questionnaire, so responses may have been influenced by recall bias or social desirability bias. Fifth, only senior staff nurses were included; nursing students, nursing assistants, head nurses, physicians, and other professionals involved in geriatric care were not included. Sixth, only knowledge and attitude were assessed; actual clinical practice and competencies were not evaluated. Seventh, institutional factors such as workload, staffing levels, availability of geriatric care guidelines, hospital resources, and organisational support were not investigated, although they may influence knowledge and attitude. Eighth, cut points for this dataset are now known from the raw dataset (knowledge Poor 18-21, Moderate 22-26, Good 27-30; attitude Negative 25-37, Positive 38-50), but which questionnaire, with how many items, actually produced scores out of 30 and 50 remains unresolved, because those maxima are not consistent with the thesis appendix (10 knowledge items and 7 attitude items) or with the data collection sheet (25 knowledge items and 20 attitude items). Item-level data are still not available. Ninth, hospital comparisons and income analyses could not be run, because the raw dataset supplied by the client contains no hospital variable and no income variable. Finally, for

2x2 tables against attitude level, chi-square values are Yates continuity-corrected values; uncorrected Pearson values are gender 1.405, p = 0.236, marital status 1.500, p = 0.221, and training 0.075, p = 0.784, with significance conclusions unchanged. New tests in this article were computed from the supplied Excel file and are reproducible with the accompanying SPSS syntax file; they should be presented as SPSS output only after that syntax has been run in SPSS.

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Conflict of interest

The authors declare no conflict of interest.

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Ethical approval

Ethical approval was obtained from the Institutional Review Board or Ethics Committee and the administrations of both hospitals, as reported in the source thesis, and written informed consent was obtained from every participant.

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