

Bridging Numbers and Narratives: Nursing Faculty Perspectives on Mixed Methods Research — A Cross-Sectional Study

Nandakumar S^{1,2*}, Dr Madhavi S³

¹Ph.D Scholar, Saveetha College of Nursing, Saveetha Institute of Medical and Technical Sciences University, Chennai, Tamilnadu India

²Vice Principal cum Professor, KMCH College of Nursing, Coimbatore, Tamil Nadu, India

³ Principal cum Professor, KMCH College of Nursing, Coimbatore, Tamil Nadu, India

**Corresponding Author: Nandakumar S ORCID: 0009-0004-2745-9097*

Abstract

Background: Mixed methods research (MMR) integrates quantitative and qualitative methods within a single study, allowing researchers to examine complex healthcare issues more comprehensively than either approach alone. In nursing, its successful adoption depends largely on faculty members, who play a central role in research education, mentorship, and capacity building. Understanding their attitudes toward MMR is therefore important for strengthening research culture within nursing institutions.

Objective: To assess nursing faculty members' attitudes toward mixed methods research and examine the relationship between attitude and selected demographic and professional characteristics.

Methods: A descriptive cross-sectional study was conducted among 50 nursing faculty members from selected nursing colleges in Coimbatore, Tamil Nadu, using a convenience sampling technique. Data were collected using the 25-item Nursing Faculty Attitudes toward Mixed Methods Research Scale (NF-AMMRS). Statistical analysis was performed using SPSS Statistics. Descriptive statistics summarized participant characteristics and attitude scores, while independent *t*-tests, chi-square tests, and Pearson's correlation coefficient were used to examine relationships between variables.

Results: The mean overall attitude score was 98.0 ± 10.4 . Nearly half of the participants (48%) demonstrated a positive attitude toward MMR, 46% had a moderate attitude, and only 6% expressed a negative attitude. Among the five domains, Perceived Value recorded the highest mean score (21.8 ± 2.6), indicating strong recognition of the usefulness of MMR, whereas Perceived Challenges had the lowest score (17.3 ± 3.5), suggesting that faculty still encountered practical barriers to its implementation. Faculty who had received prior MMR training reported significantly higher attitude scores than those without training (103.4 ± 8.2 vs. 93.8 ± 10.1 ; $t = 2.89$, $p = 0.006$). Research experience was positively associated with attitude toward MMR ($r = 0.42$, $p = 0.002$), and both research experience and previous MMR training showed significant associations with more favorable attitudes.

Conclusion: Nursing faculty generally demonstrated positive attitudes toward mixed methods research. Faculty members with prior MMR training and greater research experience were more likely to report favorable attitudes, highlighting the importance of strengthening methodological training, mentorship, and institutional research support. Investing in these initiatives may enhance

faculty competence and encourage wider integration of mixed methods research into nursing education and practice.

Keywords: mixed methods research; nursing faculty; attitudes; nursing education; research capacity building; NF-AMMRS.

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1. Introduction

The complexity of healthcare issues resists explanation by either method in isolation. A purely quantitative lens can quantify outcomes and detect correlations, but it leaves the human context of illness largely unexamined. A purely qualitative lens, in turn, illuminates that context and personal experience but cannot establish generalizable, measurable relationships on its own which is precisely why the two are often combined. Integrating these complementary approaches enables researchers to develop a more comprehensive understanding of healthcare problems. Mixed methods research (MMR), which intentionally combines quantitative and qualitative methods within a single study, has therefore become an established methodological approach for addressing complex clinical and educational questions that cannot be adequately answered using a single research tradition alone [1,2].

In nursing, where practice is centred on both measurable clinical outcomes and patients lived experiences, MMR offers distinct advantages. It allows researchers not only to determine the magnitude of a health-related issue but also to understand the personal, social, and contextual factors that influence those outcomes [3]. Recent nursing research demonstrates the value of this approach. Parallel mixed methods studies have successfully explored barriers and facilitators to evidence-based practice among nursing administrators by integrating survey findings with interview data [4]. Likewise, explanatory sequential mixed methods designs have provided deeper insight into why evidence-based practice is inconsistently implemented among clinical nurses despite favourable organisational policies [5]. Cross-sectional studies have further highlighted the influence of organisational climate on evidence-based practice implementation, reinforcing the importance of examining both measurable factors and contextual experiences when addressing healthcare challenges [6].

Despite these advantages, the adoption of mixed methods research within nursing remains inconsistent. Although interest in integrative research designs has increased over recent years, many nursing studies continue to rely exclusively on either quantitative or qualitative approaches. One important factor influencing the wider use of MMR is the preparedness of nursing faculty. Faculty members play a pivotal role in developing future researchers by designing curricula,

supervising research projects, mentoring postgraduate students, and fostering a culture of scientific inquiry. Their perceptions, confidence, and willingness to use mixed methods research directly influence the methodological choices of the next generation of nursing researchers [2].

Faculty attitudes towards research methodologies extend beyond personal preference. They influence classroom teaching, research supervision, collaborative scholarship, and institutional research priorities. Previous research has shown that faculty members with stronger research knowledge and greater methodological competence contribute more effectively to research productivity and student mentorship [7]. Similarly, structured education in evidence-based practice has been associated with improved research beliefs, confidence, and implementation among nursing students [8]. Conversely, faculty who perceive mixed methods research as overly complex, time-consuming, or philosophically difficult may be less likely to encourage its use, thereby limiting opportunities for students and early-career researchers to develop competence in integrative research approaches [9,10].

Attitudes towards mixed methods research are multidimensional and encompass cognitive, affective, and behavioural components. Roberts and Povee [10] developed the Attitudes toward Mixed Methods Research Scale, which conceptualises attitudes across several domains, including perceived value, perceived challenges, behavioural intentions, philosophical acceptance, and self-efficacy. Together, these domains provide a comprehensive understanding of how individuals perceive mixed methods research, whether they value its contribution, feel confident in applying it, and intend to use it in future research. Studies among nursing professionals have similarly demonstrated that research self-efficacy, institutional support, and opportunities for methodological training significantly influence positive research attitudes and engagement [11].

Recognising the growing complexity of healthcare research, international organisations and academic institutions have increasingly emphasised the need to strengthen research capacity through structured training, mentorship, interdisciplinary collaboration, and institutional support [12,13]. Evidence from systematic and mixed methods reviews consistently identifies insufficient methodological training, limited mentorship opportunities, inadequate research time, and organisational constraints as major barriers preventing nurses from actively engaging in research [14]. Studies involving nurses and allied health professionals have also shown that supportive leadership, protected research time, and collaborative research environments are critical for sustaining research activity [15,16]. Furthermore, evidence-based practice mentorship programmes have been shown to improve research implementation and strengthen research culture within healthcare organisations [17,18]. These findings align with recommendations from the World Health Organization and the International Council of Nurses, which advocate continued investment in nursing education, leadership, and research capacity to improve healthcare outcomes globally [20].

Although research on evidence-based practice, research competence, and research capacity among nurses has expanded considerably, relatively little attention has been given to nursing faculty

members' attitudes towards mixed methods research, particularly within the South Asian context. Existing studies have largely focused on research knowledge, evidence-based practice implementation, organisational climate, or student research attitudes [4,7,17,18,21], leaving an important gap in understanding faculty readiness to adopt and promote mixed methods research. Since nursing faculty are instrumental in shaping future research practice, understanding their attitudes is essential for developing targeted educational programmes and institutional strategies that encourage wider adoption of mixed methods research.

Therefore, the present study was undertaken to assess attitudes towards mixed methods research among nursing faculty members working in selected nursing institutions and to examine the association between attitude and selected demographic and professional characteristics. The findings are expected to provide valuable evidence for strengthening faculty development programmes, enhancing methodological competence, and promoting greater integration of mixed methods research within nursing education and research.

2. Methods

2.1 Study Design and Setting

A descriptive cross-sectional study was conducted to evaluate nursing faculty members' attitudes toward mixed methods research (MMR). The study was carried out in selected nursing institutions located in Coimbatore, Tamil Nadu, India. A cross-sectional design was considered appropriate because it allowed the researchers to assess faculty attitudes and explore their relationship with selected demographic and professional characteristics at a single point in time.

2.2 Participants and Sampling

The study included 50 nursing faculty members selected through a convenience sampling technique. Faculty members who were employed full-time and actively involved in teaching and/or research during the study period were eligible to participate. Individuals who provided written informed consent were included in the study, whereas those on extended leave or unwilling to participate were excluded.

2.3 Study Instrument

Data were collected using a structured self-administered questionnaire consisting of two sections.

Section A gathered demographic and professional information, including age, gender, educational qualification, academic designation, years of teaching experience, research experience, number of publications, previous training in mixed methods research, and prior experience conducting mixed methods studies.

Section B comprised the Nursing Faculty Attitudes toward Mixed Methods Research Scale (NF-AMMRS). The instrument was adapted from the validated Attitudes toward Mixed Methods Research Scale developed by Roberts and Povee [10] and modified to suit the nursing academic

context in accordance with accepted principles for cross-disciplinary adaptation of psychometric instruments [1]. The scale contains 25 items grouped into five domains: Perceived Value, Perceived Challenges, Behavioural Intentions, Philosophical Acceptance, and Self-Efficacy. Responses were recorded using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Total scores ranged from 25 to 125, with higher scores indicating more favourable attitudes toward mixed methods research. Overall attitude scores were classified as positive, moderate, or negative using predetermined cut-off values.

2.4 Data Collection and Ethical Considerations

Permission to conduct the study was obtained from the participating institutions before data collection commenced. Eligible faculty members received information regarding the purpose of the study and were invited to participate voluntarily. Written informed consent was obtained from all participants before questionnaire administration.

Confidentiality and anonymity were maintained throughout the study. Personal identifiers were not collected, and all responses were coded before analysis. The study was conducted in accordance with institutional ethical standards and the ethical principles governing research involving human participants.

2.5 Statistical Analysis

Data were entered into Microsoft Excel and analysed using IBM SPSS Statistics version 26.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise participants' characteristics and attitude scores.

An independent-samples t-test was performed to compare mean attitude scores between faculty members who had received prior MMR training and those who had not. Chi-square tests were used to examine associations between attitude level and selected demographic variables. Pearson's correlation coefficient was calculated to determine the relationship between years of research experience and overall attitude scores. Statistical significance was established at a p-value of <0.05 .

3. Results

3.1 Overall Attitude Toward Mixed Methods Research

Fifty nursing faculty members participated in the study. The mean overall attitude score toward mixed methods research was 98.0 ± 10.4 out of a maximum possible score of 125, indicating an overall favourable attitude among the participants.

Table 1. Distribution of nursing faculty members according to level of attitude toward MMR (N = 50)

Attitude Level	Frequency (n)	Percentage (%)
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Positive	24	48.0
Moderate	23	46.0
Negative	3	6.0
Total	50	100.0

As presented in Table 1, nearly half of the respondents (48.0%) demonstrated a positive attitude toward mixed methods research, while 46.0% showed a moderate attitude. Only 6.0% of faculty members exhibited a negative attitude. These findings suggest that most nursing faculty viewed mixed methods research positively, although the level of enthusiasm varied among individuals.

3.2 Domain-wise Attitude Scores

The domain-wise analysis provided further insight into faculty perceptions of mixed methods research (Table 2).

Table 2. Domain-wise attitude scores toward MMR among nursing faculty (N = 50)

Domain	Max. Score	Mean $\pm$ SD	Mean (%)
Perceived Value	25	21.8 $\pm$ 2.6	87.2
Philosophical Acceptance	25	20.6 $\pm$ 2.4	82.4
Self-Efficacy	25	19.4 $\pm$ 3.1	77.6
Behavioral Intentions	25	18.9 $\pm$ 2.8	75.6
Perceived Challenges	25	17.3 $\pm$ 3.5	69.2

Among the five domains, Perceived Value recorded the highest mean score (21.8 $\pm$ 2.6; 87.2%), indicating that participants strongly recognised the importance and usefulness of mixed methods research in nursing. Philosophical Acceptance ranked second (20.6 $\pm$ 2.4; 82.4%), suggesting that faculty were generally comfortable with integrating quantitative and qualitative research approaches.

Moderately high scores were observed for Self-Efficacy (19.4 $\pm$ 3.1; 77.6%) and Behavioural Intentions (18.9 $\pm$ 2.8; 75.6%), reflecting reasonable confidence and willingness to apply mixed methods research in future scholarly activities.

The lowest score was recorded for Perceived Challenges (17.3 ± 3.5 ; 69.2%), indicating that participants continued to perceive practical difficulties in implementing mixed methods research despite recognising its value.

3.3 Relationship Between Research Experience and Attitude

A Pearson correlation analysis was conducted to examine the association between years of research experience and overall attitude toward mixed methods research.

A statistically significant moderate positive correlation was observed ($r = 0.42$, $p = 0.002$), indicating that faculty members with greater research experience tended to report more favourable attitudes toward mixed methods research.

Table 3. Pearson correlation between research experience and overall attitude score (N = 50). * $p < 0.05$

Variable	Pearson's r	p-value	Interpretation
Research Experience vs. Attitude Score	0.42	0.002*	Moderate positive correlation

Figure 1. Scatter plot with regression line: Correlation between research experience (years) and overall attitude score toward MMR ($r = 0.42$, $p = 0.002$, $N = 50$).

The scatter plot presented in Figure 1 illustrates this positive linear relationship between research experience and attitude scores.

3.4 Association Between Faculty Characteristics and Attitude

Faculty members who had previously received formal training in mixed methods research demonstrated significantly higher attitude scores than those without such training.

The mean attitude score among trained faculty members was 103.4 ± 8.2 , compared with 93.8 ± 10.1 among those who had not received training. This difference was statistically significant ($t = 2.89$, $p = 0.006$), indicating that prior methodological training was associated with more favourable attitudes toward mixed methods research (Table 4).

Table 4. Comparison of mean attitude scores by MMR training status (N = 50). * $p < 0.05$

Training Status	n	Mean $\pm$ SD	t-value	p-value
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Received Training	22	103.4 ± 8.2	2.89	0.006*
No Training	28	93.8 ± 10.1	—	—
Total	50	98.0 ± 10.4	—	—

Chi-square analysis further demonstrated a significant association between previous MMR training and attitude level ($\chi^2 = 6.84$, $p = 0.033$). Among faculty members who had received training, more than two-thirds (68.2%) exhibited a positive attitude, whereas only 32.1% of untrained faculty reported positive attitudes. None of the trained participants demonstrated a negative attitude toward mixed methods research.

Research experience was also significantly associated with attitude level ($\chi^2 = 10.45$, $p = 0.033$). Faculty members with more than ten years of research experience showed the highest proportion of positive attitudes (75.0%) and no negative attitudes. In contrast, participants with five years or less of research experience had the lowest proportion of positive attitudes (22.2%) and the highest proportion of negative attitudes (16.7%).

These findings indicate that both prior training and accumulated research experience contribute positively to faculty attitudes toward mixed methods research.

Table 5. Association between attitude level and MMR training status (N = 50). $\chi^2(2) = 6.84$, $p = 0.033$

Attitude Level	Trained n (%)	Untrained n (%)	Total
Positive	15 (68.2%)	9 (32.1%)	24
Moderate	7 (31.8%)	16 (57.1%)	23
Negative	0 (0.0%)	3 (10.7%)	3
Total	22 (100%)	28 (100%)	50

Table 6. Association between research experience and attitude level toward MMR (N = 50).

$\chi^2(4) = 10.45$, $p = 0.033$

Research Experience	Positive n (%)	Moderate n (%)	Negative n (%)	Total
≤ 5 Years	4 (22.2%)	11 (61.1%)	3 (16.7%)	18
6–10 Years	8 (50.0%)	8 (50.0%)	0 (0.0%)	16
> 10 Years	12 (75.0%)	4 (25.0%)	0 (0.0%)	16
Total	24 (48.0%)	23 (46.0%)	3 (6.0%)	50

Figure 2. Association between demographic characteristics and attitude level toward

MMR. Panel A: Training status vs. attitude level [$\chi^2(2) = 6.84, p = 0.033$]. Panel B: Research experience vs. attitude level (stacked %) [$\chi^2(4) = 10.45, p = 0.033$]. N = 50.

4. Discussion

This study explored nursing faculty members' attitudes toward mixed methods research (MMR) and examined the factors associated with these attitudes. Overall, the findings indicate that faculty members viewed MMR positively, with almost half demonstrating a positive attitude and only a small proportion reporting negative perceptions. These findings suggest that nursing educators increasingly recognise the value of integrating quantitative and qualitative approaches to address complex healthcare and educational questions. However, although acceptance of MMR was generally high, several practical challenges continue to influence its wider adoption.

The overall pattern of findings is consistent with previous studies reporting favourable attitudes towards research and evidence-based practice among nursing professionals [7,11]. Similar observations have been reported in other disciplines, where researchers acknowledge the strengths of MMR but are often hesitant to implement it because of methodological complexity and limited experience [10,19]. This indicates that willingness to adopt mixed methods research may already exist among nursing faculty, but translating that willingness into routine research practice requires additional institutional and educational support.

Domain-wise analysis provided further insight into faculty perceptions. Perceived Value emerged as the highest-scoring domain, demonstrating that participants clearly recognised the contribution of MMR to nursing research. Faculty appreciated that integrating numerical findings with qualitative experiences provides a broader understanding of healthcare problems than either method alone. Likewise, the high score for Philosophical Acceptance suggests that most participants were comfortable with combining different research paradigms within a single investigation. These findings reflect the growing acceptance of methodological pluralism in

contemporary nursing research and support the increasing use of mixed methods designs in studies examining evidence-based practice, healthcare delivery, and nursing education [3–6].

In contrast, Perceived Challenges recorded the lowest domain score, indicating that implementation barriers remain despite favourable attitudes. Mixed methods research often requires additional time, methodological expertise, interdisciplinary collaboration, and greater resources than single-method studies. Researchers must also integrate two distinct forms of data while maintaining methodological rigour throughout the research process. Similar challenges have been highlighted in recent systematic reviews, which identify inadequate training, limited mentorship, insufficient protected research time, and organisational constraints as common barriers to research engagement among nurses [14–16]. Therefore, the lower scores observed in this domain are likely to reflect practical rather than philosophical concerns.

One of the most important findings of this study was the positive influence of previous MMR training on faculty attitudes. Participants who had undergone formal training achieved significantly higher attitude scores than those without such exposure. This finding suggests that educational interventions can improve not only methodological knowledge but also confidence in applying mixed methods approaches. Previous studies have similarly demonstrated that structured research training and mentorship programmes strengthen research competence, self-efficacy, and evidence-based practice among nursing professionals [5,13,17]. These findings reinforce the importance of investing in faculty development programmes that include practical instruction on mixed methods research design, data integration, and interpretation.

Research experience also emerged as an important determinant of favourable attitudes. Faculty members with longer research experience demonstrated significantly higher attitude scores and were more likely to report positive perceptions of MMR. This relationship is not unexpected, as experienced researchers are generally more familiar with different methodological approaches and have greater confidence in selecting appropriate research designs. Continuous involvement in research activities also provides opportunities to develop critical thinking, methodological flexibility, and collaborative skills, all of which are essential for conducting mixed methods studies. Similar associations between research experience, self-efficacy, and positive research attitudes have been reported in previous nursing studies [8,11].

Taken together, these findings have important implications for nursing education and research capacity building. Although faculty members recognise the value of mixed methods research, positive attitudes alone may not be sufficient to increase its application. Institutions should therefore complement favourable attitudes with opportunities for skill development through structured workshops, continuing professional development programmes, and interdisciplinary research collaborations. Establishing formal mentorship programmes that pair early-career faculty with experienced mixed methods researchers may further strengthen research competence and confidence. In addition, institutional support through protected research time, seed funding, statistical consultation, and recognition of collaborative research can create an environment that

encourages the wider adoption of mixed methods approaches. These recommendations are consistent with international strategies for strengthening nursing research capacity proposed by the World Health Organization and the International Council of Nurses [20].

4.1 Innovative Aspects of the Study

This study makes several contributions to nursing research. First, it represents one of the few studies conducted in India to specifically examine nursing faculty members' attitudes toward mixed methods research. While previous investigations have focused primarily on research competence, evidence-based practice, or general research attitudes, the present study provides evidence regarding faculty readiness to adopt integrative research methodologies.

Second, the use of the Nursing Faculty Attitudes toward Mixed Methods Research Scale (NF-AMMRS) enabled attitudes to be examined across five distinct domains rather than relying solely on an overall score. This domain-specific approach provides a clearer understanding of faculty strengths and areas requiring additional support. For example, although participants highly valued mixed methods research, comparatively lower self-efficacy and greater perceived challenges suggest that training initiatives should focus on practical methodological skills rather than awareness alone.

Finally, the study identified two modifiable factors that is prior MMR training and research experience that were significantly associated with favourable attitudes. These findings provide practical guidance for educational institutions seeking to strengthen faculty research capacity through targeted professional development initiatives.

4.2 Challenges of Mixed Methods Research

Although mixed methods research offers significant advantages, its implementation presents several challenges. One of the most frequently reported difficulties is the integration of quantitative and qualitative findings into a coherent interpretation. Successful integration requires methodological expertise, careful planning, and familiarity with different analytical techniques, which many novice researchers have limited opportunities to develop [22,23].

In addition, mixed methods studies generally demand greater time, financial resources, and collaborative effort than single-method investigations. Researchers must often possess expertise in both quantitative and qualitative methodologies or work within multidisciplinary teams. Limited access to experienced mentors, reviewers, and supervisors with expertise in mixed methods research further complicates implementation [19,23]. These practical constraints are consistent with the lower scores observed for the Perceived Challenges domain in the present study and suggest that institutional support remains essential for increasing the use of mixed methods research within nursing.

4.3 Scope of Mixed Methods Research in Nursing

The application of mixed methods research in nursing continues to expand as healthcare problems become increasingly complex. MMR is particularly valuable for evaluating educational innovations, clinical interventions, patient experiences, healthcare services, and evidence-based practice initiatives because it combines measurable outcomes with contextual understanding [3,24]. Within nursing education, mixed methods designs can provide comprehensive evaluations of simulation-based learning, competency assessment, curriculum development, and faculty development programmes by integrating quantitative outcomes with participants' experiences.

The favourable attitudes observed among nursing faculty in this study indicate a strong foundation for expanding the use of mixed methods research within Indian nursing education. Continued investment in methodological training, collaborative research networks, mentorship, and institutional research infrastructure will be essential for translating positive attitudes into high-quality mixed methods research. Strengthening these areas will ultimately enhance research capacity, evidence generation, and the quality of nursing education and clinical practice.

4.4. Limitations

Several limitations should be considered while interpreting the findings of this study. The use of convenience sampling and the relatively small sample size drawn from selected nursing institutions in Coimbatore may limit the generalisability of the findings. The cross-sectional design also prevents conclusions regarding causal relationships between faculty characteristics and attitudes toward mixed methods research. Furthermore, the use of self-reported questionnaires may have introduced response and social desirability bias. Future studies involving larger multi-centre samples, probability sampling techniques, and longitudinal designs would provide stronger evidence regarding the development of faculty attitudes over time. Qualitative investigations may also help explain the specific barriers underlying the perceived challenges identified in this study.

5. Conclusion

This study found that nursing faculty members generally held favourable attitudes toward mixed methods research, reflecting a growing recognition of its value in addressing complex questions in nursing education and healthcare. Faculty members strongly acknowledged the benefits of integrating quantitative and qualitative approaches, although practical challenges related to methodological expertise, time, and institutional support remained evident.

Previous exposure to mixed methods research training and greater research experience were significantly associated with more positive attitudes, highlighting the importance of continuous professional development in strengthening methodological competence. These findings suggest that favourable attitudes alone are insufficient to increase the use of mixed methods research unless supported by structured training, effective mentorship, and an enabling research environment.

Nursing institutions should therefore invest in faculty development initiatives that provide practical training in mixed methods research, encourage interdisciplinary collaboration, and strengthen research mentorship. Institutional policies that offer protected research time, research

infrastructure, and opportunities for collaborative scholarship may further enhance faculty confidence and promote the wider adoption of mixed methods research.

As nursing education and healthcare continue to address increasingly complex clinical and educational challenges, strengthening faculty capacity in mixed methods research will contribute to the generation of more comprehensive evidence, improve research quality, and support evidence-informed nursing practice.

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