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Behavioral pattern in knowledge updating strategies of nursing faculties in Kerala

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Abstract
Nursing faculty are expected to teach current evidence, guide clinical learning, and respond to students who may use mobile and digital information tools with confidence. Faculty members whose initial professional or teacher preparation took place before 2000 may have encountered a substantially different information environment. This study proposes to examine how nursing educators in Kerala recognize knowledge needs, seek and assess information, update their teaching, and cope with the technical, academic, psychological, wellbeing, and financial demands associated with continuing digital change. It will examine whether perceived student–teacher differences in digital fluency are linked with reduced professional confidence, stress, perceived teaching performance, student experience, and work productivity, and whether faculty improvement opportunities and organizational support buffer these pressures. Particular attention will be paid to preparation before 2000, without treating age or training period as a proxy for ability. Wilson's information behaviour model will guide analysis of context, information need, intervening factors, information-seeking activity, and information use. A cross-sectional mixed-method design is proposed, combining a stratified faculty survey with interviews about recent information-updating experiences; student feedback may be added to assess satisfaction directly. For preliminary planning only, the paper uses an assumption of approximately 25 teaching staff per institution across programmes from GNM to MSc Nursing. A working estimate of 152 institutions would yield about 3,800 faculty members; this is not an official population count and must be verified against current programme-wise institutional and faculty registers before sampling. No sex-disaggregated statewide faculty count has been established for this proposal. The study could inform supportive faculty development, management practices, library services, mentoring, and mobile-compatible learning opportunities.

Keywords: Nursing faculty, information-seeking behavior, knowledge updating, digital transition, psychological coping, Wilson Model, Kerala

Introduction

Nursing education depends on educators who can connect established knowledge with current evidence, professional standards, and changing healthcare practice. Faculty members prepare lessons, supervise clinical learning, answer student questions, review curricula, and support research. These responsibilities require continuing access to reliable information and the ability to decide what is relevant, credible, and suitable for teaching or clinical instruction.

Mobile internet, digital libraries, online journals, learning platforms, professional networks, and electronic continuing education have widened access to information. They have also changed the work of finding and judging it. Search results can be incomplete or unreliable; access to a document does not guarantee understanding; and a new application or platform may require time, training, connectivity, and sometimes personal expenditure. Digital access therefore needs to be studied alongside search skills, critical appraisal, institutional support, workload, and the practical use of information.

The technological dilemma faced by teachers is not confined to nursing education or Kerala. Across countries, educators are adapting to changing tools, expectations, and forms of information. UNESCO's 2023 [2, 3] Global Education Monitoring Report identifies teacher preparation as one of the system-wide conditions needed for technology to support education and reports that teachers in many settings feel unprepared or lack confidence. The dilemma is global, while its intensity and form vary with connectivity, affordability, infrastructure, language resources, workload, and access to professional learning. These constraints can be especially consequential in developing-country contexts where resources and support are uneven, although they are not limited to those settings. This study therefore examines Kerala as a local case within a wider international transition.

The present study gives special attention to teachers whose initial nursing or teacher preparation occurred before 2000. Their formal education may have taken place before smartphones, widespread internet access, and current digital databases became routine. They may now teach in environments where students appear highly fluent with devices and applications. If teachers feel unable to meet students' expectations or keep pace with their digital practices, this may affect professional confidence and, for some, create feelings of inferiority or inadequacy. The study

will examine how such experiences relate to stress, teaching quality, student engagement and satisfaction, perceived productivity, and pressure from management, as well as whether faculty improvement opportunities help. These are matters for investigation, not assumptions about every senior teacher or every student. Faculty trained in later periods may also experience barriers, and individual skill can vary substantially within each group.

Review of Related Literature

Global Relevance of Teacher Technology Transition

UNESCO's Global Education Monitoring Report 2023 [2, 3] examines technology in education across countries and identifies access, governance, and teacher preparation as conditions for effective use. UNESCO's ICT Competency Framework for Teachers likewise supports pre-service and in-service preparation for integrating digital technologies. Together, these sources support treating teacher adaptation to technology as a broad international education concern. They also caution against assuming that one context represents all others: technology access, training, institutional support, and costs differ across and within countries. In many developing-country settings, uneven infrastructure and affordability can compound the learning demands placed on teachers. The present study uses this global perspective to frame the Kerala inquiry, while gathering local evidence rather than generalizing its findings to every country.

Information behaviour and Wilson's model

Wilson's work presents information seeking as part of broader information behaviour shaped by a person's context and information need. His 1996 model, developed with Walsh, incorporates activating mechanisms and intervening variables, including stress and coping, perceived risk and reward, self-efficacy, and environmental or role-related barriers. Wilson's later account situates information seeking within a wider process of communication and information use (Wilson & Walsh, 1996; Wilson, 1999) [9, 10]. This makes the framework relevant to a study that asks not only which devices faculty use, but also what prompts a search, what helps or obstructs it, how faculty cope, and whether retrieved information is understood and applied.

For this study, Wilson's framework will be adapted to examine faculty context and information needs; intervening psychological, professional, social, and environmental conditions; information-seeking activities; and subsequent processing and use. Digital competence, confidence, perceived professional inadequacy, stress, workload, management expectations, access costs, peer support, library services, and formal faculty improvement opportunities will be treated as factors to measure. The framework will guide inquiry and interpretation rather than predetermine causal findings.

Digital information and nursing education

Research on electronic information resources in Indian nursing academia has reported that awareness, searching skills, access, and training are relevant to the use of digital sources (Singh & Mahapatra, 2017) [7]. A study at KIMS College of Nursing in Kerala examined access to digital resources among students and teachers and described devices and access-related challenges (Somarajan & Muruganantham, 2019) [8]. These studies provide useful context, but their scope does not answer how nursing faculty across Kerala identify a need to update knowledge, assess evidence, cope with digital change, and translate information into teaching.

Continuing education and digital learning

The Indian Nursing Council's continuing nursing education regulations and e-learning resources establish formal continuing education as part of the professional learning environment. A study of a digital learning initiative for nurses in community mental health care in India reported changes in participants' knowledge, practice, and confidence after the programme (Govindan *et al*., 2024) [1]. Such evidence supports examining structured digital learning alongside informal searches, peer learning, and self-directed updating. It does not establish how nursing teachers across Kerala experience these opportunities or the costs and barriers they encounter.

Psychological and generational dimensions

The transition from print-centred or limited-connectivity learning environments to continuous mobile access can involve more than acquiring technical skills. Faculty may need to learn new applications, revise established search habits, evaluate a larger volume of material, and respond to students who use digital tools differently. A perceived gap may affect confidence and self-efficacy, and may be experienced as professional inadequacy or inferiority; the study will use non-diagnostic language and will not label participants. Other possible experiences include stress, frustration, fear of appearing outdated, or constructive motivation to learn. Management expectations and limited opportunities for faculty improvement may intensify pressure, while accessible training, protected time, peer mentoring, and supportive leadership may reduce it. The study will explore perceived links to teaching effectiveness, student engagement and satisfaction, and work productivity, while distinguishing reported perceptions from independently measured outcomes. Financial costs may include data, devices, subscriptions, training, or time away from other responsibilities. The proposed study will measure these experiences respectfully and will not diagnose mental-health conditions or presume that any cohort is less capable.

Research Gap

The literature identified for this proposal addresses electronic resources in nursing academia, digital resource access in one Kerala college, and digital continuing education for nurses. It does not provide a statewide account focused on nursing faculty, cohort differences in preparation before and after 2000, psychological and practical coping, or the connection between information seeking and classroom or clinical use. A focused, mixed-method study

can address this gap. A systematic review and a final verification of the regulatory and institutional sampling frame will be required before the full protocol is approved.

Statement of the Problem

Nursing faculty in Kerala must continually update professional and educational knowledge in a rapidly changing information environment. For some teachers trained before 2000, the shift to mobile and digital systems may create additional technical learning, time, financial, academic, and emotional demands, particularly when they perceive students as more adept with current devices. Reduced confidence or feelings of professional inadequacy may add stress, especially where management expectations are high and faculty improvement opportunities are limited. The possible consequences for teaching quality, student satisfaction, and overall work productivity are not established. Without evidence about faculty needs, coping strategies, barriers, performance experiences, and support, colleges may offer training or technology that does not address the actual problem. This study therefore proposes to examine how nursing educators seek and use information, how experiences may differ by preparation period and work context, and whether accessible faculty development and supportive management are associated with better confidence and reported performance.

Aims and Objectives

The primary aim of this study is to examine the psychological and behavioural patterns through which nursing faculty in Kerala seek information, update professional knowledge, and adapt teaching practice in the mobile and digital era.

1. Identify the professional situations and perceived knowledge gaps that prompt nursing faculty to seek information.
2. Describe the print, mobile, digital, interpersonal, library, and continuing-education sources used by faculty from GNM through MSc Nursing programmes.
3. Examine search practices, digital and information-literacy skills, confidence, and methods for assessing the credibility, currency, and relevance of information.
4. Explore how faculty trained before 2000 describe technical, academic, psychological, wellbeing, time, and financial demands associated with knowledge updating.
5. Compare information-seeking and coping experiences across preparation periods, teaching experience, qualifications, specialties, institutions, and levels of digital access.
6. Examine how updated information is incorporated into classroom teaching, clinical supervision, curriculum work, and research.
7. Examine whether faculty improvement opportunities and organizational support are associated with confidence, perceived teaching effectiveness, student experience, and work productivity.
8. Identify individual and institutional supports that faculty consider useful, and develop evidence-informed recommendations for nursing colleges.

Research Questions

- What professional tasks and events prompt nursing faculty in Kerala to seek updated information?
- Which sources, devices, platforms, and people do faculty rely on, and how do they assess the information they find?
- How do faculty trained before 2000 describe the technical, academic, psychological, wellbeing, time, and financial demands of digital knowledge updating?
- How do these experiences compare with those of faculty whose initial preparation occurred in or after 2000, after accounting for work experience, specialty, role, and institutional resources?
- How do faculty use new information in teaching, clinical education, curriculum development, and research?
- Which personal, peer, library, institutional, and formal continuing-education supports help faculty update knowledge and manage barriers?
- How are faculty improvement opportunities and management support related to teachers' confidence, perceived teaching quality, student experience, and work productivity?

Conceptual Framework

Wilson's information behaviour model provides the main conceptual framework. The study begins with each educator's professional and learning context, including programme level, subject specialty, teaching role, experience, initial preparation period, workload, management expectations, and institutional environment. A teaching task, student question, clinical issue, curriculum change, or new evidence may create an information need. The educator then encounters intervening conditions that may enable or inhibit action. These include digital and information skills, self-efficacy, perceived stress and coping, time, connectivity, device and subscription costs, access to libraries and databases, peer networks, faculty improvement opportunities, and institutional support. The study will explore whether those conditions are associated with perceived teaching effectiveness and work productivity; student satisfaction will be measured directly only if a student-feedback component is approved and included.

Information seeking may involve passive attention, passive search, active search, or ongoing search through mobile tools, databases, library resources, colleagues, professional networks, and continuing nursing education. Faculty then appraise, interpret, adapt, apply, or share information. Its use may address the original need or generate new questions, restarting the process. In this study, the psychological and coping dimensions are treated as measurable parts of the pathway, not as clinical diagnoses. Students' digital fluency will be explored through faculty perceptions and examples rather than assumed as a universal characteristic. Faculty development and management support will be examined as potentially modifiable conditions that may reduce strain and support teaching performance.

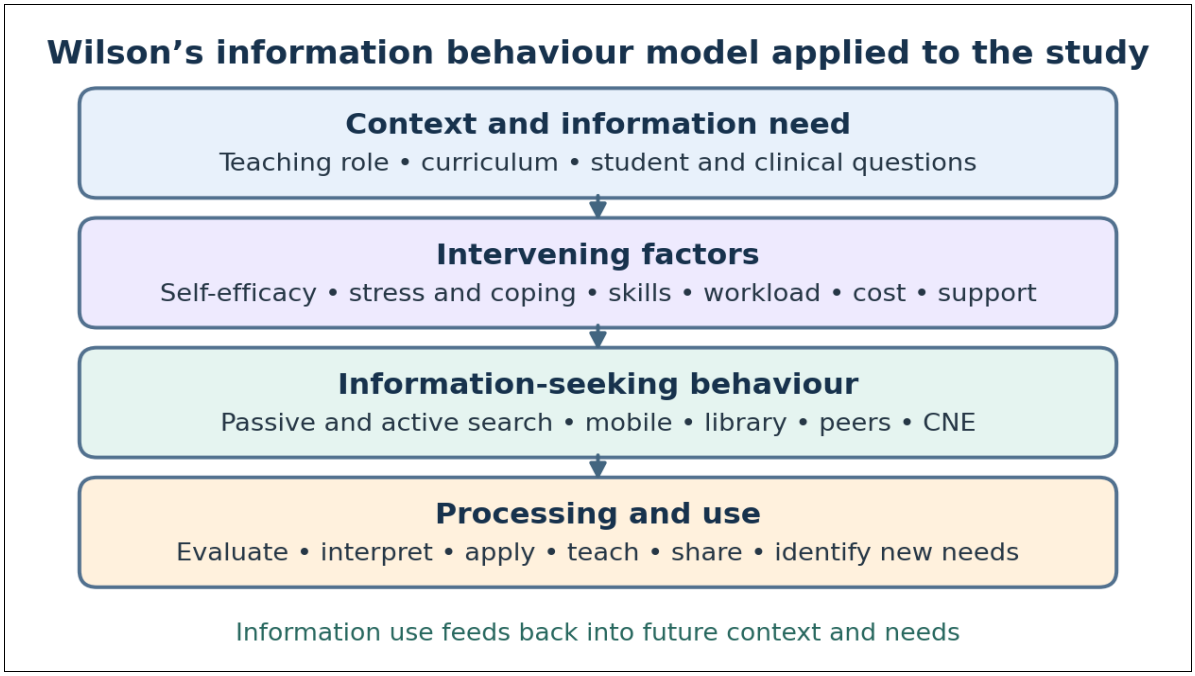


Fig 1: Study-specific application of Wilson's model of information behaviour (adapted from Wilson & Walsh, 1996; Wilson, 1999) [9, 10].

Proposed Methodology

Research Design

A cross-sectional mixed-method design is proposed. A structured faculty survey will describe information needs, searching, appraisal, coping, knowledge use, faculty development, management pressure, and support. It will also examine self-reported teaching effectiveness and work productivity, with clear separation between perceived outcomes and independently verified indicators. Semi-structured interviews will explore concrete examples of information updating and the meanings faculty attach to changes in their work. If student satisfaction is a primary outcome, a student feedback module or authorized aggregate course-evaluation data should be added, with appropriate consent, confidentiality, and ethics approval; faculty impressions alone will not be treated as a measure of student satisfaction. The strands will be analysed separately and then integrated. Because the design is cross-sectional, it can identify associations and reported experiences but cannot establish that a particular factor caused psychological distress or changed performance.

Population and Scope

The target population will comprise teaching faculty employed in recognized nursing education institutions in Kerala that offer programmes within the defined GNM-to-MSc Nursing scope. The final protocol must specify eligible programme types, current employment status, minimum teaching experience if required, and treatment of faculty who teach across multiple programmes. Clinical nurses without teaching responsibilities will be excluded unless the scope is formally expanded.

Cohort Definition

The primary comparison will use the year in which the participant completed the initial nursing qualification or teacher preparation identified in the protocol. For analysis, a pre-2000 preparation group and a preparation-in-or-after-2000 group may be compared. The survey will record exact qualification year, years of teaching, age band, specialty, and subsequent training separately. This prevents the study from treating age, seniority, and curriculum exposure as interchangeable. The final research protocol should define which preparation event is being classified and justify the 2000 cut-off.

Population Estimate and Sampling frame

For preliminary workload and sample-planning discussion, an assumption of approximately 25 faculty members per institution has been used, covering teaching across programmes from GNM through MSc Nursing. A working count of 152 institutions multiplied by 25 yields an approximate planning figure of 3,800 faculty. This is not a verified statewide population or an official faculty count. The number 152 should be checked against the latest programme-wise lists and may represent a particular course or admission list rather than all nursing institutions across all levels. No verified statewide male/female faculty totals are available for this proposal; sex and gender information should be collected directly, with suitable response options and confidentiality protections.

Before recruitment, the research team should compile and reconcile current Indian Nursing Council, Kerala Nurses and Midwives Council, Directorate of Medical Education, university, and other relevant institutional records. The frame should remove duplicates, identify each institution's active programmes and locations, and verify faculty numbers through authorized institutional contacts. The final population size, data year, inclusion rules, and any unresolved discrepancies should be reported transparently. The sample size should then be calculated from the verified eligible population, chosen precision and confidence assumptions, design effect if applicable, and expected non-response.

Sampling Strategy

A multistage stratified approach is recommended. Institutions may be grouped by district or region, management type, and programme level. Institutions can then be selected within strata, followed by eligible faculty

selection from current staff lists. Where the verified population is manageable, a census invitation may be considered. The protocol should document the sampling frame, selection procedure, contact attempts, response rate, and treatment of non-response. The survey should aim for meaningful representation of pre-2000-trained faculty while retaining a comparison group.

Data Collection Instruments

The questionnaire will collect background information; teaching and clinical responsibilities; information needs; source and device use; search strategies; appraisal practices; digital confidence and skills; continuing education and faculty improvement opportunities; information use; institutional support; management expectations; and perceived barriers. It will include items on time pressure, workload, self-efficacy, perceived professional inadequacy, stress related to digital learning, comfort seeking help, and coping strategies. It will ask about perceived effects on teaching preparation, classroom or clinical teaching, student engagement, task completion, and work productivity. Financial questions may cover personal expenditure on devices, data, subscriptions, applications, and training, using optional ranges rather than requiring sensitive exact amounts. Items should distinguish perceived confidence from demonstrated skill, general stress from clinical symptoms, and self-reported performance from objective measures.

To reduce recall error, participants may be asked to describe one recent instance when they needed new information for teaching or clinical education: what triggered the search, where they looked, how they judged the source, what they learned, whether they used it, and what difficulties they encountered. Interviews will explore perceived student–teacher differences, experiences of asking for assistance, confidence or inadequacy, management pressure, access to faculty development, successful adaptation, emotional responses, perceived effects on education quality and productivity, and the types of support that would make updating more manageable. Student satisfaction should be assessed through student voices or existing authorized feedback if it is retained as a study outcome. The tools should be reviewed by nursing educators, a library and information science specialist, a psychologist or behavioural-science researcher, and a methods expert; they should then be piloted with faculty outside the final sample where feasible.

Data Analysis

Survey data will be checked for completeness and analysed using descriptive statistics. Comparisons across preparation cohorts and institutional groups will use tests appropriate to the measurement level and distribution. Multivariable analyses may examine whether preparation period is associated with information-seeking, confidence, perceived stress, or knowledge use after accounting for teaching experience, qualifications, specialty, workload, and institutional access. Measures should be validated or transparently described as study-developed; causal language should be avoided.

Interview transcripts will be analysed thematically using a documented coding process. Initial coding can follow Wilson's concepts while allowing new themes to emerge from participant accounts. Attention should be paid to variation within cohorts and to counterexamples, including pre-2000-trained faculty who report confidence and later-trained faculty who report difficulty. Integration of the two strands will help explain both common patterns and divergent experiences.

Ethical Considerations

The study will obtain ethics approval before recruitment and institutional permissions where required. Participants will receive clear information about purpose, voluntary participation, confidentiality, data use, and the right to decline questions or withdraw within the permitted period. Because questions touch on confidence and emotional wellbeing, the survey should avoid stigmatizing language, protect identifiable comments, and provide appropriate signposting to institutional support if a participant requests help. Results should be reported in ways that do not identify individual faculty or institutions without explicit authorization.

Discussion and Expected Contribution

The proposed study treats information seeking as a professional and human process. A teacher may need information because a student asks a question, a clinical practice changes, a guideline is revised, or an assignment requires current evidence. Whether that need leads to effective updating may depend on more than device ownership. Search skill, confidence, stress, time, access, peer support, cost, management expectations, and the availability of faculty improvement opportunities may all matter. The study will examine whether perceived gaps in digital fluency are associated with professional confidence, teaching effectiveness, student experience, and productivity, while accounting for other relevant factors. Wilson's model offers a way to examine these conditions together while keeping information use connected to the original teaching or clinical need.

A focused examination of faculty trained before 2000 can show whether the digital transition is associated with particular learning needs or coping pressures for this group. It can also identify strengths, adaptive strategies, and institutional conditions that make updating easier. Findings may help colleges decide whether to provide practical app and database training, protected learning time, peer mentoring, librarian support, continuing education, supportive management practices, or financial assistance for essential access. The study should interpret any cohort differences carefully and should not frame experienced faculty as obsolete or digitally incapable. Outcomes concerning student satisfaction should be based on student feedback or authorized institutional measures, not inferred from faculty perceptions.

The expected contribution is a Kerala-focused evidence base connecting information needs, search and appraisal behaviour, knowledge use, perceived psychological demands, organizational support, and reported teaching performance among nursing faculty. It will examine whether access to faculty improvement opportunities is associated with confidence and perceived performance, and will assess student satisfaction directly only if student or institutional feedback is included. The paper reports a proposed study and preliminary planning assumptions; it does not report collected results or claim that a psychological crisis has already been demonstrated.

Recommendations for Nursing Colleges

- Offer practical, recurring faculty improvement workshops on mobile search, nursing databases, evidence appraisal, citation management, and safe use of digital and AI-enabled tools; provide refresher and one-to-one support as needed.
- Provide mobile-compatible access to library discovery tools, subscribed resources, open educational resources, and recognized continuing nursing education.
- Protect scheduled time for faculty to complete continuing education, review current evidence, and share updates; align management expectations with realistic access to training and workload.
- Pair faculty who request support with librarians, digital-learning staff, and trained peer mentors; make assistance available without stigma.
- Assess faculty needs by experience, preparation period, specialty, programme, and access conditions before choosing training or technology.
- Consider institutional support for essential connectivity, devices, subscriptions, or training where cost is a documented barrier.
- Build a respectful learning culture that values clinical and teaching experience, avoids stigmatizing faculty who seek help, and supports all faculty in evaluating current information.

Limitations

The proposed cross-sectional design will not establish causation or change over time. Self-reported confidence, search frequency, stress, and information use may differ from observed behaviour. A cohort cut-off at 2000 is a practical analytic choice and may not represent a sharp boundary in curriculum or technology exposure. Institutional registers may be incomplete or use different programme definitions. The estimated 3,800 faculty figure is provisional and cannot be used as the final sampling denominator until current lists and staff counts are verified. Non-response may also affect representativeness. The study should state these limitations alongside the final sample frame and response rate.

Conclusion

Nursing educators in Kerala work in a rapidly changing information environment that requires continuing learning as well as effective teaching and clinical guidance. For some faculty trained before 2000, adapting to mobile and digital information systems may involve technical, academic, psychological, wellbeing, time, and financial demands. When perceived student–teacher digital gaps coincide with management pressure and limited faculty improvement opportunities, they may affect confidence, stress, perceived teaching quality, student experience, and work productivity. The proposed study will examine these relationships without assuming that all senior faculty struggle or that later-trained teachers face no barriers. Guided by Wilson's model, it will connect professional context and information need with intervening factors, search behaviour, knowledge use, and feedback. Verified population data and a carefully designed mixed-method study can support more responsive faculty development, management practice, library provision, mentoring, and continuing education across Kerala.

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