Original Research Paper

Multi-stakeholder needs assessment for community-centered interprofessional geriatric medical education in Punjab, India

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Abstract

Background: India's rapidly ageing population, projected to be nearly 20% over 60 years of age by 2050, presents complex healthcare issues, including multimorbidity, polypharmacy, and psychosocial vulnerability, that exceed single-discipline treatment approaches. Despite India's 2019 Competency-Based Medical Education (CBME) reforms outlining geriatric competencies, medical graduates remain inadequately prepared for interprofessional collaborative practice. Community-based interprofessional education offers a pragmatic pathway to bridge this gap, yet systematic approaches aligned with national curricula remain underdeveloped. This study focuses on a multi-stakeholder needs assessment to inform the development of a community-centred interprofessional geriatric education module for undergraduate medical students in Punjab, India. **Methods:** We employed a convergent mixed-methods design guided by Kern's curriculum development approach, the 4Ms framework (What Matters, Medication, Mentation, Mobility), and Interprofessional Education Collaborative (IPEC) competencies. Qualitative data were collected from 35 older adults (≥60 years) through two focus group discussions and 20 in-depth interviews across urban and rural Punjab (August–October 2025). A structured expert needs assessment was conducted with 17 purposively selected interprofessional healthcare professionals representing eight disciplines (August 2025). Thematic analysis and descriptive statistics were applied to qualitative and quantitative data, respectively; findings were integrated at the interpretation stage. **Results:** Older adults prioritized dignity, respectful communication, and coordinated care. Key concerns included polypharmacy and medication confusion (43% reported ≥3 chronic conditions), loneliness, under-addressed mental health needs, fear of falls, and fragmented care. Healthcare professionals identified significant curriculum gaps: 94% cited inadequate geriatric preparation, 88% insufficient interprofessional education, and 82% limited community-based learning. Despite high perceived importance of geriatric competencies (mean 4.6–4.9), confidence remained moderate in psychosocial care (3.1±0.9) and interprofessional collaboration (3.2±0.9). Strong convergence emerged across all 4Ms domains between older adults' experiences and professionals' identified competency gaps. **Discussion:** This multi-stakeholder needs assessment demonstrates convergence between older adults' priorities and professionals' competency gaps across all 4Ms domains, providing evidence-informed direction for curriculum reform. Findings support integrating the 4Ms framework within India's CBME to address gaps in person-centred communication, medication safety, psychosocial care, and interprofessional collaboration. The Family Adoption Program offers a pragmatic platform for longitudinal community-based interprofessional learning aligned with the National Program for Health Care of the Elderly.

Keywords: Interprofessional education, geriatric education, medical education, curriculum development, needs assessment, mixed methods.

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Introduction

India's population is ageing rapidly, with nearly 20% aged 60 years and above by 2050, but with far less health system capacity.[1,2] This transition brings profound implications for healthcare delivery: older adults increasingly present with multimorbidity, polypharmacy, and complex psychosocial needs that extend well beyond single-organ disease management.[3, 4] The complexity of geriatric care inherently demands coordinated input from multiple disciplines, including medicine, nursing, community medicine, mental health, pharmacology, physical medicine and rehabilitation, nutrition, and social care. India's healthcare system is pluralistic, with individuals often accessing care from multiple providers across allopathic, AYUSH, and informal sectors. However, the workforce remains inadequately prepared to deliver collaborative, person-centred care.[3]

The National Medical Commission introduced Competency-Based Medical Education (CBME) in 2019, with the latest iteration being CBME 2024.[5] This curriculum explicitly outlines geriatric competencies across multiple disciplines and mandates longitudinal community engagement through the Family Adoption Programme (FAP),[5] which provides a natural opportunity for students to understand family dynamics, social determinants of health, and the evolving needs of vulnerable populations, particularly older adults. However, despite this comprehensive curricular intent, geriatric education remains fragmented, with students receiving little structured training in interprofessional collaboration, which is necessary to coordinate complex care across professional boundaries. Without systematic training in interprofessional competencies, FAP encounters remain largely observational rather than transformative learning experiences, as noted in previous reports.[6] If students are equipped with essential structured frameworks, the FAP could become a powerful platform for meaningful community-based geriatric education.

Effective implementation of national health priorities, such as the National Programme for Health Care of the Elderly (NPHCE),[7] requires healthcare professionals skilled not only in clinical competence but also in teamwork, communication, and care coordination. Interprofessional education (IPE), defined as *learning with, from, and about* other professions to enable effective collaboration, has been widely endorsed as essential for preparing healthcare teams capable of delivering integrated, patient-centred care.[8,9] This approach is particularly critical in geriatrics, where complex biopsychosocial needs demand coordinated input across disciplines. The 4Ms framework (What Matters, Medication, Mentation, and Mobility) offers a practical, person-centred approach to organising geriatric care.[10] Originally developed as part of the Age-Friendly Health Systems initiative, this framework provides a unifying structure that aligns well with both CBME-defined geriatric competencies and NPHCE program objectives. Integrating the 4Ms within an interprofessional educational approach offers an opportunity to move beyond isolated learning and enables students to develop a comprehensive, integrated understanding of ageing and geriatric care applicable in community settings, particularly when embedded within community-based education models.[11]

Needs assessment forms a foundational step in curriculum development, particularly within interprofessional education, where alignment between patient needs, health system priorities, and workforce competencies is essential.[12] While previous studies have explored geriatric competencies among healthcare professionals, few have simultaneously incorporated perspectives of older adults alongside interprofessional healthcare team members,[13,14] especially relevant in community-based and culturally diverse settings. This study represents the initial phase of a structured curriculum development process aimed at designing a community-centred, interprofessional geriatric education module for undergraduate medical students in India. Using a mixed-methods, multi-stakeholder needs assessment, we explored healthcare needs and priorities expressed by older adults from urban and rural communities in Punjab, India, alongside perceived geriatric care competency gaps identified by interprofessional healthcare team members. The findings provide an evidence-informed foundation for integrating the 4Ms framework within community-centred interprofessional education, leveraging existing platforms like the Family Adoption Programme,

and aligning undergraduate medical training with CBME requirements and national health system priorities under the NPHCE.

Methods

Study Design

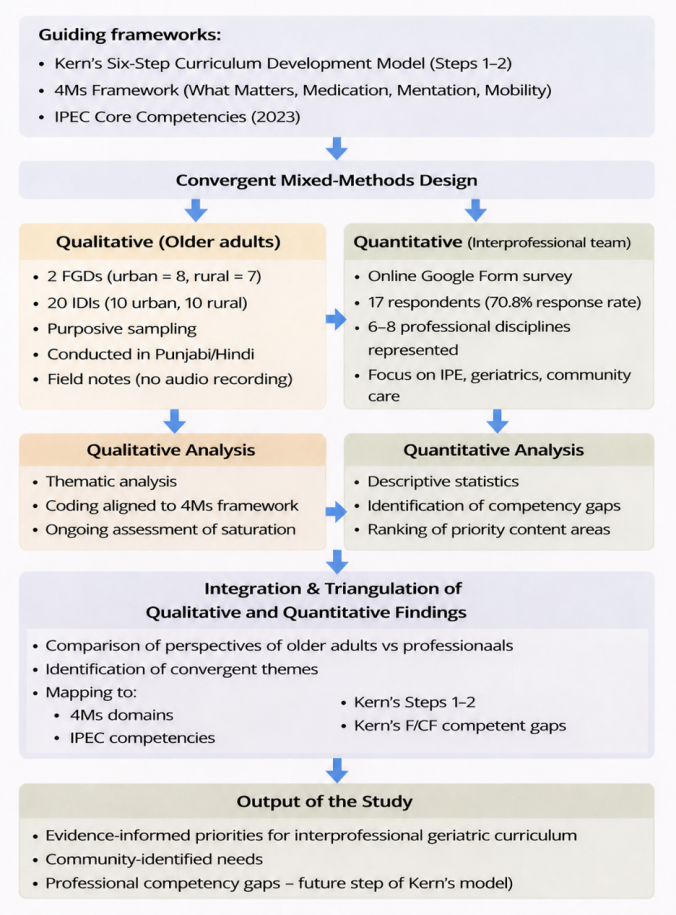
We employed a convergent mixed-methods needs assessment design as the first step of a structured curriculum development process. Qualitative and quantitative data were collected concurrently, analysed independently, and then integrated during interpretation. The quantitative component was designed as a structured expert needs assessment rather than a population survey; sampling adequacy was therefore determined by achieving comprehensive disciplinary representation across all professions central to geriatric care, rather than by numerical sufficiency alone. This design was selected to capture both the depth of lived experiences (qualitative) and the breadth of professional perspectives (quantitative), enabling triangulation and a comprehensive understanding of educational needs.

Conceptual and Curricular Frameworks (Figure 1)

The study was guided by three complementary frameworks:

1. **Kern's Six-Step Approach to Curriculum Development,**[12] with this study addressing Steps 1 (problem identification and general needs assessment) and 2 (targeted needs assessment).
2. **The 4Ms framework** (*What Matters, Medication, Mentation, Mobility*)[15] to structure the exploration of older adults' healthcare needs and organize findings.
3. **The Updated Interprofessional Education Collaborative (IPEC) Core Competencies,** which emphasize person-centered care, population health, and health equity,[16] to inform the identification of interprofessional competency gaps.

Figure 1: Mixed methods training needs assessment design for Interprofessional Geriatric Education



These frameworks collectively supported systematic alignment between community needs, interprofessional competencies, and undergraduate medical education outcomes.

Study Setting and Participants

Older Adults

Individuals aged 60 years and above were recruited from urban and rural communities in Punjab, India, during August–October 2025. We used purposive sampling to ensure diversity across key characteristics:

- **Gender:** Both men and women
- **Residence:** Urban (city residents) and rural (village residents)
- **Health status:** Community-dwelling individuals with varying levels of functional independence and chronic conditions
- **Living arrangements:** Those living with family and those living alone or in senior care facilities

Inclusion criteria:

- Age ≥60 years
- Residing in Punjab for at least one year
- Cognitively able to provide informed consent (assessed through conversation and orientation to person, place, and time)
- Able to participate meaningfully in discussions in Punjabi or Hindi

Exclusion criteria:

- Severe cognitive impairment precluding informed consent
- Active psychiatric crisis
- Acute medical instability requiring immediate care

Recruitment occurred through community health workers, senior citizen associations, and local senior care facilities. Potential participants were contacted in person, provided with information about the study, and given time to consider participation.

Interprofessional Healthcare Team Members

Healthcare professionals involved in geriatric care delivery and/or medical education were purposively recruited from the host institution and partner institutions in Punjab. Selection prioritised faculty members from disciplines essential for the planned interprofessional geriatric education module, ensuring representation from the core interprofessional team needed for both module development and future implementation. Target recruitment aimed for representation from at least 6–8 professional disciplines relevant to geriatric care, including Medicine/Geriatrics, Community Medicine, Nursing, Psychiatry, Pharmacology, Physiotherapy, Dietetics, and Social Work.

Inclusion criteria:

- Healthcare professional or faculty member in health professions education
- Experience in geriatric care delivery and/or teaching medical students
- Willingness to participate in an online survey

Invitations were sent via WhatsApp with a brief information sheet on the study and its purpose, using an anonymous survey link.

Data Collection

Qualitative Data (Older Adults)

Development of interview guides: Semi-structured interview and FGD guides were developed by the Principal Investigator based on the 4Ms framework and pilot-tested with two older adults (data not included in final analysis). The guide explored:

- Healthcare experiences and perceived gaps in care
- Communication with healthcare providers
- Understanding and management of medications
- Mental health, cognitive concerns, and social connectedness
- Mobility, functional challenges, and fear of falls
- Personal values, goals, and what matters most
- Family dynamics and social support
- Preferences for care coordination

Focus Group Discussions (FGDs): Two FGDs were conducted, one in an urban setting (n=8 participants) and one in a rural setting (n=7 participants), both including male and female participants who expressed comfort with mixed-

gender discussions. Separate urban and rural groups were convened to enhance contextual relevance and comfort in discussing location-specific challenges. Each FGD lasted approximately 90–120 minutes and was facilitated by the lead researcher with experience in qualitative methods. A co-facilitator took detailed notes. FGDs were conducted in mixed groups; responses may have been influenced by social hierarchy and gender dynamics, which is acknowledged as a contextual limitation.

In-Depth Interviews (IDIs): Twenty IDIs (10 urban, 10 rural) were conducted, each lasting 30–45 minutes in participants' homes.

Recording and documentation: In keeping with participant preferences expressed during informed consent and to promote comfort and openness during discussions, FGD and IDI sessions were not audio-recorded. This approach reflected cultural sensitivities related to privacy and trust, and the older adults' discomfort with recording devices.

To ensure data rigor, a structured field note protocol was used. During FGDs, one researcher facilitated the discussion while another documented responses. In IDIs, the interviewer captured verbatim quotes, key observations and contextual details. Field notes were expanded into detailed narratives within 24 hours, and verbatim expressions were reconstructed where possible. Consistency was enhanced through triangulation and team discussions. All sessions were conducted in Punjabi or Hindi based on participant preference.

Data saturation: Data collection continued until thematic sufficiency was achieved through ongoing review of emerging themes. By the 18th IDI, no new themes emerged, and two additional interviews confirmed saturation.

Translation and Data Preparation

Expanded field notes were reviewed for completeness and translated into English by the bilingual research team. Translation accuracy was verified through back-translation by an independent bilingual researcher. Discrepancies were resolved through consensus with reference to original notes and contextual understanding

Quantitative Data (Interprofessional Healthcare Team Members)

A cross-sectional online survey was administered using Google Forms during August 2025. The survey instrument was developed based on the need for strengthening community-centered, inter-professional geriatric care competencies among medical undergraduates. The survey instrument was pilot-tested for clarity and relevance among a small group of healthcare professionals prior to administration. Formal psychometric validation was not undertaken.

Survey structure:

- Professional background and teaching experience
- Awareness and understanding of IPE concepts
- Need for community-centered education in geriatric care.
- Perceived importance of geriatric competencies for undergraduates
- Self-reported confidence in interprofessional geriatric care
- Perceived gaps in undergraduate training
- Priority content areas for the module
- Preferred teaching and assessment methods.
- Open-ended questions on challenges and recommendations

The survey took approximately 10–15 minutes to complete. Two reminder messages were sent at one-week intervals. A total of 24 invitations were distributed to faculty from the targeted disciplines; 17 complete responses were received (response rate: 70.8%). Data collection was closed after achieving full representation across all eight targeted professional disciplines required for the planned interprofessional module. Consistent with expert consultation methodologies in curriculum development research, disciplinary breadth was the primary criterion for sampling adequacy.[12]

Data Analysis

Qualitative Analysis

Expanded field notes from FGDs and IDIs were reviewed for completeness and translated into English by the bilingual research team. Translation

accuracy was verified through back-translation of all passages by an independent bilingual researcher not involved in data collection. Discrepancies were reviewed by the research team and resolved through consensus, with reference to original field notes and contextual understanding.

Thematic analysis was conducted following Braun and Clarke's six-phase approach[17]

Coding was undertaken by two researchers. An initial subset of transcripts was used to develop a preliminary codebook using both inductive and deductive (4Ms-guided) approaches. Coding focused primarily on explicit meanings, with limited interpretation where relevant. Discrepancies were resolved through consensus, and the codebook was refined iteratively. The refined codebook was applied to remaining transcripts, with periodic team discussions to ensure consistency.

The qualitative component was reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ).[18]

Reflexivity

The research team comprised faculty from Community Medicine, Geriatrics, and allied disciplines with experience in medical education and community-based research with prior interest in interprofessional education and geriatric care.

To minimise potential bias, interview guides were kept open-ended, and facilitators avoided leading questions. Triangulation helped ensure findings remained grounded in participants' perspectives.

Quantitative Analysis

Survey data was exported from Google Forms to Microsoft Excel and analysed manually.

Descriptive statistics were calculated:

- Frequencies and percentages for categorical variables
- Means and standard deviations for Likert-scale items
- Rankings for priority content areas

Open-ended survey responses were analyzed using directed content analysis, with responses categorized into themes aligned with the 4Ms and IPEC frameworks.

Given the purposive expert consultation design, inferential statistics were not applied. Results are presented descriptively to characterize informed professional perspectives on geriatric education needs, consistent with the study's curriculum development aims rather than population-level inference.

Integration of Findings

In convergent mixed-methods designs, triangulation across data sources serves as a primary validity strategy, reducing dependence on the statistical power or sample size of any single component.[19] Convergence between the qualitative and quantitative strands, therefore, strengthens confidence in findings, despite the modest size of the professional sample. Key steps included:

1. **Joint display creation:** Findings from both datasets were systematically mapped to the 4Ms framework domains
2. **Comparison:** Areas of convergence (agreement) and divergence (disagreement or gaps) between older adults' expressed needs and professionals' identified competency gaps were identified
3. **Synthesis:** Integrated findings were interpreted in relation to IPEC competency domains
4. **Curricular implications:** Educational priorities were derived based on areas of strongest convergence and most critical gaps

Ethical Considerations

Clearance was obtained from the Institutional Ethics Committee (Letter No. AIMS/IEC-HR/2025/37, dated 6th June 2025). Written informed consent was obtained from all participants after providing detailed information about the study purpose, procedures, voluntary participation, and right to withdraw. For participants with limited literacy, consent procedures involved verbal explanation with a witness signature. Confidentiality and anonymity were maintained through the use of participant codes rather than names.

Results

This needs assessment integrated perspectives from 35 older adults and 17 interprofessional healthcare team members.

The findings are presented in four parts: (i) participant characteristics; (ii) interprofessional healthcare team perspectives; (iii) older adults' perceived healthcare needs; and (iv) integrated synthesis to inform curriculum development.

Participant Characteristics

Older Adult Participants

Thirty-five older adults participated in the study (Table 1). Just over half (51%) were in the 60–69 age group, with women comprising 54% of the sample. Urban and rural participants were nearly equally represented. Most participants (77%) lived with spouse and/or children, though 14% lived alone and 9% resided in senior care facilities. Self-reported health status was predominantly "fair" (54%), with equal proportions reporting "good" or "poor" health (23% each). Notably, 43% reported three or more chronic conditions, while only 9% reported no chronic conditions.

Table 1: Characteristics of Older Adult Participants (n=35)

Participant characteristic	n (%)
Age group	
60–69 years	18 (51)
70–79 years	12 (34)
≥80 years	5 (14)
Gender	
Male	16 (46)
Female	19 (54)
Residence	
Urban	18 (51)
Rural	17 (49)
Living arrangement	
With spouse and/or children	27 (77)
Alone	5 (14)
Senior care facility	3 (9)
Self-reported health status	
Good	8 (23)
Fair	19 (54)
Poor	8 (23)
Chronic conditions (self-reported)	
None	3 (9)
1-2 conditions	17 (49)
≥3 conditions	15 (43)

Interprofessional Healthcare Team Members

Seventeen healthcare professionals participated in the survey, representing eight professional disciplines: Community Medicine/Public Health (n=5, 29%), Medicine/Geriatrics (n=3, 18%), Nursing (n=3, 18%), Medical Social Work (n=2, 12%), and one representative each from Psychiatry, Pharmacology, Physiotherapy, and Dietetics (6% each). Years in practice were distributed across experience levels: seven participants (41%) had less than 5 years of experience, three (18%) had 5–10 years, and seven (41%) had over 10 years of experience. Despite expressing familiarity with IPE concepts, the majority (n=13, 76%) had not received prior IPE training.

Interprofessional Healthcare Team Perspectives

Observed perspectives revealed a paradox: high familiarity with IPE concepts (75% very or somewhat familiar) contrasted sharply with limited practical experience (41% had participated in IPE activities) and moderate teaching confidence (59%). Nearly all respondents (94%) identified inadequate geriatric preparation in undergraduate curricula, with particular gaps in IPE exposure (88%) and community-based learning (82%).

Competency ratings showed ceiling effects for perceived importance, communication with older adults (4.9 ± 0.3), comprehensive geriatric assessment and team-based care (both 4.8 ± 0.4), yet self-reported confidence remained moderate at best. The largest confidence gaps emerged in

Table 2: Interprofessional Healthcare Team Perspectives: Targeted Needs Assessment (n=17)

Domain	Item	n (%)
A. Familiarity with IPE		
	Very familiar	6 (37.5)
	Somewhat familiar	6 (37.5)
	Only heard the term	2 (12.5)
	Not familiar	2 (12.5)
	Correctly defined IPE	15 (93.75)
	Prior participation in IPE activities	7 (41.2)
	Confident to teach in IPE format	10 (58.8)
B. Awareness of National Programme		
	Aware of NPHCE	12 (75.0)
	Not aware of NPHCE	4 (25.0)
C. Preferred Model for Geriatric Care Delivery		
	Multiple disciplines working as a team	15 (93.75)
D. Perceived Curriculum Gaps		
	Inadequate geriatric preparation in UG curriculum	16 (94.1)
	Insufficient exposure to IPE	15 (88.2)
	Limited community-based geriatric learning	14 (82.4)
E. Top-Ranked Priority Competencies		
	Comprehensive geriatric assessment	15 (88.2)
	Patient-centered communication	14 (82.4)
	Team-based care coordination	14 (82.4)
F. Perceived Importance of Geriatric Competencies *(5-point Likert scale)* **Mean ± SD**		
	Communication with older adults	4.9 ± 0.3
	Comprehensive geriatric assessment	4.8 ± 0.4
	Team-based care coordination	4.8 ± 0.4
	Polypharmacy management	4.7 ± 0.5
	Functional assessment	4.6 ± 0.6
G. Self-Reported Confidence in Interprofessional Geriatric Care *(5-point scale)*		
	Communication across disciplines	3.6 ± 0.7
	Managing multimorbidity	3.4 ± 0.8
	Interprofessional collaboration	3.2 ± 0.9
	Addressing psychosocial needs	3.1 ± 0.9
H. Top-Ranked Preferred Teaching Methods		
	Rank 1: Case-based learning and discussions	
	Rank 2: Community-based practical training	
	Rank 3: Simulation-based training	
I. Top-Ranked Preferred Assessment Methods		
	Rank 1: Practical assessments (OSCE)	
	Rank 2: Case-based evaluations	
	Rank 3: Team-based project assessments	

addressing psychosocial needs (3.1 ± 0.9) and interprofessional collaboration (3.2 ± 0.9), despite these being rated as highly important (Table 2).

Qualitative Insights from Open-Ended Responses

Open-ended responses revealed that geriatric care is treated as an "add-on" rather than an integrated competency. One physician noted: "*Students learn to treat diseases but not to care for older persons as whole individuals.*" Barriers to IPE implementation included departmental silos, limited faculty development, and scheduling challenges. However, enthusiasm was universal; respondents described such efforts as "long overdue" and "essential for preparing students for real-world practice."

Older Adults' Perceived Healthcare Needs

Qualitative analysis of FGDs and IDIs revealed rich, multidimensional healthcare needs organised around the 4Ms framework, with additional cross-cutting themes related to nutrition, family

Table 3: Older Adults' Perceived Healthcare Needs: Key Themes and Illustrative Quotations (n=35)

Domain (4Ms-aligned)	Key Themes	Illustrative Quotations
What Matters	Emotional peace, dignity, respect, autonomy, being heard, maintaining identity beyond illness	"*All we want is peace, peace of mind.*" "*We want to be treated with respect, not just as old bodies with problems.*"
Healthcare Experience	Lack of empathetic listening; rushed consultations; transactional interactions; feeling dismissed	"*Doctors only prescribe medicines but do not listen to us. They don't have time.*" "*I try to explain my situation, but they interrupt and move to the next patient.*"
Medication	Polypharmacy; confusion about dosing and purpose; medication burden; cost concerns; reliance on traditional/home remedies	"*There are too many medicines; sometimes we forget which one is for what.*" "*The bag is full of medicines, but no one explains them properly.*"
Mentation	Loneliness; anxiety about future; worry about being burden; disturbed sleep; memory concerns; lack of mental health support	"*At this age, managing everything becomes difficult. There is so much worry.*" "*Loneliness is the biggest disease. No medicine can cure that.*"
Mobility	Functional decline; fear of falls; loss of independence; joint pain; desire to remain active; environmental barriers	"*After the fall, fear has set in. I don't go out alone anymore.*" "*My legs don't support me like before. I need help for everything.*"
Nutrition & Daily Life	Monotony in diet; loss of pleasure in eating; dietary restrictions; appetite changes; desire for enjoyable food	"*Food should be enjoyable, not just healthy. What is life without taste?*" "*They tell me don't eat this, don't eat that. Then what should I eat?*"
Family & Social Context	Separation from children (migration); strained family relationships; changing social roles; feeling neglected; missing grandchildren	"*We do not expect much from our children, but we miss them.*" "*The house feels empty even when people are there.*"
Care Coordination	Fragmented services; multiple providers without communication; preference for integrated care; confusion about system navigation	"*It would be easier if everything were available in one place.*" "*Each doctor gives different advice. We don't know whom to believe.*"
Expectations from Healthcare Providers	Empathy; patience; respect; understanding of ageing; time to listen; seeing them as whole persons, not diseases	"*We have our own stories, not just our age.*" "*A kind word from the doctor makes more difference than medicine sometimes.*"

dynamics, care coordination, and expectations from healthcare providers. Detailed themes and illustrative quotations are presented in Table 3.

What Matters: Dignity, Respect, and Emotional Peace

Older adults consistently prioritised emotional well-being and dignified treatment over clinical interventions. However, healthcare experiences frequently failed to meet these expectations, with encounters characterised by time pressure and limited meaningful engagement. Participants expressed frustration about feeling unheard during consultations and being treated as clinical problems rather than humans.

Medication: Polypharmacy and Confusion

Medication-related concerns centred on difficulties managing multiple medications simultaneously, with widespread confusion about purposes, dosing schedules, and potential interactions. Cost burden was significant, and many participants acknowledged concurrent use of traditional remedies alongside prescribed medications, typically without informing their physicians. This pattern reflects India's pluralistic healthcare landscape and has important implications for medication safety.

Mentation: Loneliness, Anxiety, and Emotional Distress

Loneliness emerged as a profound yet under-addressed concern across both urban and rural settings. Participants described pervasive anxiety about the future, worry about becoming burdensome to family members, and disturbed sleep patterns. Memory concerns were frequently mentioned but rarely resulted in formal evaluation or support. Despite the prominence of these psychosocial concerns, participants reported minimal mental health support from healthcare providers.

Mobility: Functional Decline and Fear of Falls

Fear of falls profoundly affected independence and quality of life, with many participants restricting activities and social engagement following falls or near-falls. Progressive functional decline created dependence in activities of daily living, which participants emphasised affected their sense of dignity and autonomy as much as physical capacity. Joint pain and environmental barriers (stairs, uneven surfaces, lack of assistive devices) compounded functional limitations.

Contextual and Cultural Considerations

Pluralistic healthcare seeking: Concurrent use of allopathic medicine, traditional healers (vaidyas), and home remedies was common yet rarely disclosed to physicians. One rural participant explained: "*The doctor gives medicine for pain, but the 'vaidya' gives oil massage and herbal paste. We use both*." This pattern has critical implications for medication safety and underscores the need for non-judgmental communication that elicits complete information about all treatments being used.

Gender differences: Women more frequently emphasised emotional distress, family relationship concerns, and dietary monotony, while men focused more on lost social status and functional independence. Women also reported greater difficulty navigating healthcare systems independently, often relying on family members for medical appointments.

Urban–rural disparities: Rural participants faced significant access barriers, including distance to facilities, transportation challenges, and cost constraints. However, they reported stronger community support networks and neighbourhood connections. Urban participants had better physical access to healthcare facilities but experienced more profound social isolation, even when co-residing with family members.

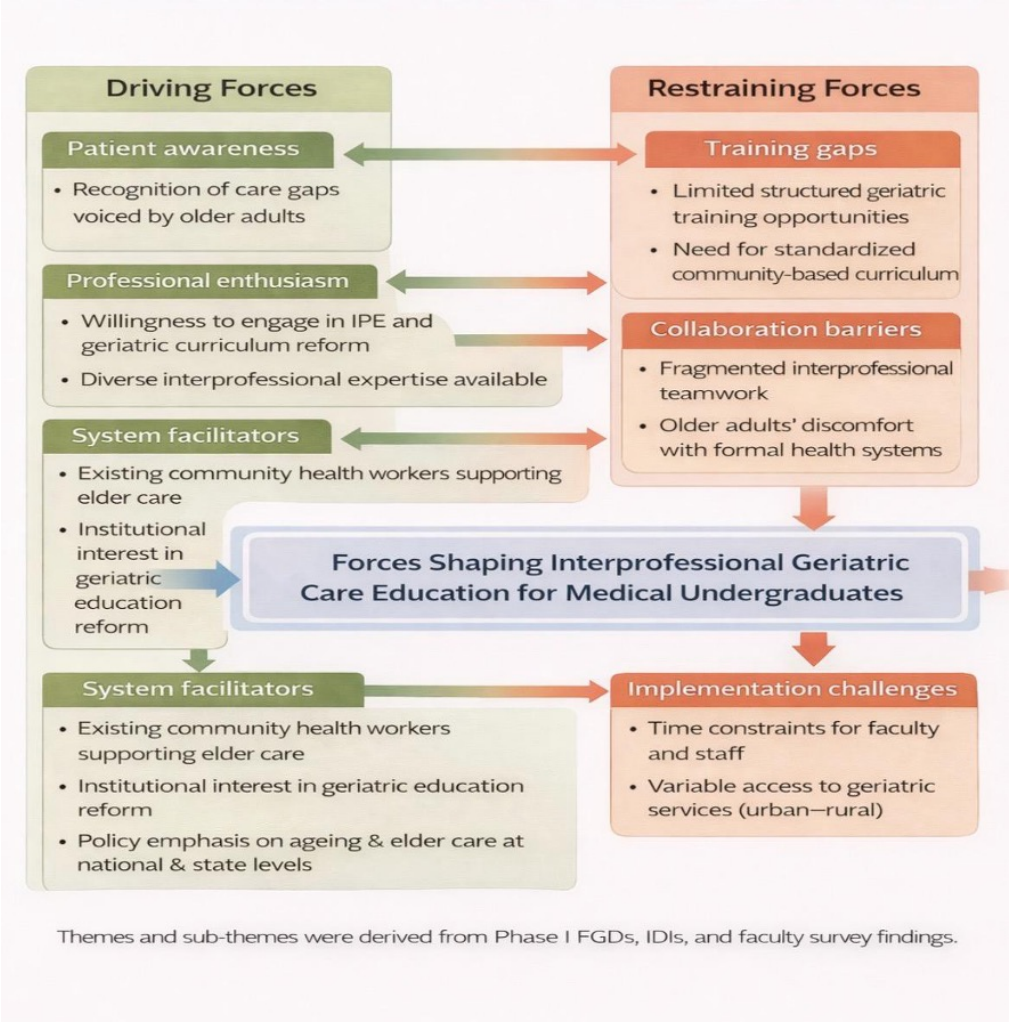
A Force Field Analysis [20] (Fig. 2) was used to synthesize the integrated findings, illustrating the key forces supporting and constraining change in interprofessional geriatric care education for medical undergraduates. This synthesis informed the prioritization of educational needs.

Integrated Synthesis: Alignment of Needs and Competency Gaps

Qualitative and quantitative findings converged strongly across all 4Ms domains. Four areas showed particularly clear alignment:

1. **Communication:** Older adults' experiences of feeling unheard and dismissed during

Figure 2: Force Field Analysis of driving and restraining forces for implementing community-centered interprofessional geriatric education for medical undergraduates in Punjab, India (developed by authors based on Lewin's Force Field Analysis, 1951).[20]



healthcare encounters paralleled professionals' acknowledgement of insufficient training in patient-centered communication and empathetic listening skills.

2. **Polypharmacy:** Patient confusion about multiple medications and their purposes corresponded with professionals' recognition of inadequate training in polypharmacy management, medication reconciliation, and collaborative medication review.
3. **Fragmented care:** Patient experiences of seeing multiple uncoordinated providers matched professionals' identification of poor interprofessional role clarity, limited team-based care training, and weak care coordination competencies.
4. **Psychosocial neglect:** Older adults' expressed loneliness, anxiety, and unmet emotional needs aligned with professionals' admission that psychosocial and mental health aspects of geriatric care receive insufficient curricular attention and clinical prioritization.

This convergence identifies five priority areas for curriculum development: (i) bridging biomedical and psychosocial perspectives in geriatric care; (ii) developing experiential (not just conceptual) interprofessional collaboration skills through team-based learning; (iii) addressing medication management within pluralistic health systems with

attention to medication safety and reconciliation; (iv) incorporating family and social context into comprehensive care planning; and (v) building competencies in care coordination and health system navigation support.

Discussion

This multi-stakeholder needs assessment demonstrates convergence between older adults' priorities and interprofessional team members' identified competency gaps, thus informing curriculum reform. Older adults emphasised dignity, respectful communication, psychosocial well-being, and coordinated care, while professionals acknowledged gaps in undergraduate training in these domains. Together, these findings support a community-centred, interprofessional approach to geriatric education in India.

As India faces rapid population ageing and rising multimorbidity, the 4Ms framework offers a practical structure for shifting care from disease-centred to person-centred practice. Evidence from other settings highlights both its promise and the risk of uneven uptake if not thoughtfully implemented.[21] In this context, the convergence may reflect a shared recognition of persistent gaps in geriatric and interprofessional care rather than novel insights alone. This suggests that these priorities remain insufficiently addressed in current training and practice. Notably, some divergence was observed, with older adults emphasising relational and psychosocial aspects, while professionals highlighted system-level and clinical training gaps. In the Indian context, characterised by multiple care providers, pluralistic care use, and psychosocial vulnerabilities, these findings underscore the need to translate frameworks into locally relevant, practice-oriented educational strategies through undergraduate interprofessional education.[22]

Person-centred communication: beyond clinical transactions

Older adults prioritised being heard, respected, and treated as whole persons rather than clinical cases, reflecting the principles of relationship-centred care.[23] Their dissatisfaction with rushed consultations mirrors national evidence from LASI showing persistent concerns about provider communication.[1] Despite high perceived importance (4.9±0.3), professionals reported lower confidence in communication (3.6±0.7), reflecting a persistent "knowing–doing gap" in Indian medical education, which has historically privileged technical competence over relational skills.[24]

International evidence shows that structured interprofessional communication training improves patient-centred care.[9] These findings highlight the need to integrate culturally responsive communication skills into interprofessional learning, particularly in uniquely Indian challenges such as hierarchical clinical cultures, high patient volumes, and variable health literacy, which must be explicitly addressed in curricula.

Polypharmacy and pluralistic healthcare: an Indian reality

Medication confusion was widespread, with frequent concurrent use of allopathic and AYUSH therapies, reflecting India's pluralistic care context.[25,4] While professionals recognised the importance of polypharmacy management, they reported limited training in medication reconciliation and deprescribing.

Although interprofessional medication review models show benefits internationally,[26] their application in India requires adaptation to fragmented records and diverse care practices. Training should emphasise comprehensive medication histories, awareness of herb–drug interactions, and collaboration across disciplines, including engagement with AYUSH systems.[27] This aligns with national policy trends toward integrative health within Universal Health Coverage.[28]

Mental health and social isolation: an under-recognised burden

Participants described loneliness and social isolation as significant concerns, consistent with broader social shifts documented in Indian gerontology.[3,1] Professionals reported their lowest confidence in addressing psychosocial care, aligning with the large treatment gaps identified in the National Mental Health Survey (2015–16).[29]

Interprofessional approaches show improved management of psychosocial needs,[30,31] with emerging evidence supporting interventions to reduce loneliness.[32] Our findings support integrating

mental, physical, and social care within undergraduate curricula.[33]

Functional decline and falls: from disease to function

Functional decline and fear of falls were frequently reported, often normalised as inevitable ageing. Although professionals valued functional assessment (4.6±0.6), they reported limited training in rehabilitation principles.[34] Evidence supports interprofessional approaches to mobility, falls prevention, and rehabilitation.[25]

Our findings suggest that undergraduate curricula should prioritise falls risk screening, home safety assessment, and assistive device use, competencies directly relevant to primary care delivery under NPHCE. Innovative interprofessional teaching strategies in geriatric emergencies and care transitions offer adaptable models for India.[35,14, 36]

Care coordination and interprofessional education

Our study observed participants reporting care across multiple providers, while professionals acknowledged limited interprofessional collaboration in training. This reflects both educational gaps and structural constraints in practice, where coordinated team-based care remains limited. Evidence suggests that well-designed interprofessional education can improve knowledge and collaborative competence.[37] Evidence from Comprehensive Geriatric Assessment education further supports the value of multi-professional training in improving skills and teamwork.[38]

Together, these findings indicate that interprofessional learning must be embedded longitudinally rather than delivered as isolated modules, with clear opportunities for shared clinical decision-making and community engagement to prepare a collaborative workforce for ageing populations.[39]

Implications for India's demographic transition

With nearly 20% of India's population projected to be over 60 by 2050 [1,2] and a severe geriatrician shortage, interprofessional models are not optional but essential. Preparing medical students to work effectively with nurses, pharmacists, physiotherapists, and community health workers can extend specialist capacity while improving care quality.

Our findings align closely with NPHCE and CBME priorities for comprehensive, coordinated, person-centred care.[7] The 4Ms framework, grounded in community and professional perspectives, offers a practical organising structure for curriculum reform. Evidence that early interprofessional exposure shapes sustained collaborative practice [31] suggests that undergraduate education is a strategic leverage point for long-term system change.

Strengths and limitations

The multi-stakeholder design strengthens validity and ensures patient-centred relevance. The convergent mixed-methods approach enabled triangulation across urban–rural contexts and multiple disciplines. The quantitative component involved a purposive sample of 17 healthcare professionals, which limits statistical power and generalizability to broader populations. The use of purposive sampling and recruitment from a limited number of institutions may introduce selection bias and restrict external validity. Accordingly, findings should be interpreted as contextually grounded insights intended to inform curriculum development rather than generalizable conclusions. However, as the intent was expert identification of competency gaps to inform curriculum development rather than population-level inference, the sample was designed to ensure disciplinary breadth across eight professions relevant to geriatric care. The single-state focus additionally limits transferability to other regions of India with different health system contexts. The convergence between older adult priorities and professional competency gap identification across all four 4Ms domains provides triangulated support for the validity of findings despite these constraints. Additionally, the absence of formal psychometric validation of the survey tool may limit measurement precision. Future multi-site studies with larger interprofessional samples should examine the downstream impacts of curriculum implementation on collaborative practice and patient outcomes.

Conclusions

This needs assessment demonstrates clear alignment between older adults' priorities and interprofessional competency gaps, validating the importance of multi-stakeholder curriculum development. Older adults' emphasis on dignity, respectful communication, coordinated care, and psychosocial support converged strongly with professionals' identified training deficiencies in patient-centred communication, medication safety, mental health integration, and team-based collaboration.

The findings provide evidence-informed direction for integrating the 4Ms framework as an organising structure within India's Competency-Based Medical Education. Moving forward requires systematic integration of interprofessional learning within existing platforms like the Family Adoption Programme, faculty development in collaborative teaching methods, and institutional commitment to cross-departmental educational innovation. Such efforts can operationalise national health priorities while preparing future physicians for India's demographic transition, ensuring health professionals' education remains socially accountable and responsive to the evolving needs of its ageing population.

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