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Strengthening workforce capacity through short-term community health nursing training modules: A feasibility analysis

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Abstract
Strengthening community health systems requires a competent and adequately trained nursing workforce capable of delivering preventive, promotive, and basic curative services at the grassroots level. However, many health systems, particularly in low- and middle-income countries, continue to face gaps in community-oriented nursing skills due to limited curriculum exposure and insufficient opportunities for structured capacity-building. This feasibility analysis investigates the potential of short-term community health nursing training modules designed to rapidly enhance essential competencies among nurses and frontline health workers. The modular programme included community assessment approaches, basic epidemiology, primary prevention techniques, health promotion strategies, family-cantered care, and foundational skills required for community-based service delivery. Feasibility was evaluated using pre- and post-training assessments, structured observation checklists, and participant feedback forms. Results revealed considerable gains in core competencies, confidence levels, and ability to provide community outreach services safely and independently. Participants reported that the training was contextually relevant, easy to integrate into existing duties, and contributed to improved readiness for community-based responsibilities. Stakeholders expressed strong support for the scalability of the modules, highlighting that short-duration programmes may serve as an effective interim solution to address workforce shortages while long-term reforms in nursing education are underway. Overall, the findings indicate that short-term modular training presents a practical, acceptable, and impactful strategy for strengthening workforce capacity within community health systems. Future research should explore long-term retention of competencies, integration into national training frameworks, and cost-effectiveness of large-scale implementation.

Keywords: Community health nursing, workforce capacity, short-term training, feasibility analysis, primary health care, nursing education

Introduction
In many low- and middle-income countries (LMICs), the demand for community-based health care continues to grow yet there is a persistent shortage of skilled community nurses and health workers capable of delivering primary, preventative, and promotive services outside hospital settings [1-3]. Professional nursing curricula often focus predominantly on clinical hospital-based care, leaving little emphasis on community health and public health competencies. As a result, nurses transitioning to community settings frequently lack the training required for community-oriented roles, undermining the effectiveness and sustainability of primary health services [4-6]. The shortage of community nursing capacity is further exacerbated by uneven distribution of trained personnel and limited institutional support for continuing education.

To address these gaps, some regions have experimented with "task shifting" or "task sharing," reallocating specific healthcare responsibilities from highly trained professionals to lesser-trained but well-supported community health workers (CHWs) or community nurses [7-9]. Evidence shows that appropriately trained CHWs and community nurses can effectively deliver health promotion, screening, and basic care particularly for chronic non-communicable diseases (NCDs) such as cardiovascular disease and diabetes [2, 10-12]. Systematic reviews have demonstrated that training programmes significantly improve knowledge, skills, and retention among CHWs, and can lead to measurable improvements in

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community health outcomes [2, 10]. Moreover, efforts to standardize and improve community nursing curricula have shown that with structured training, community nurses can rapidly acquire essential competencies for community-based care [4, 5].

Given these considerations, we propose that short-term, modular training programmes rather than lengthy formal courses could serve as a rapid, flexible, and cost-effective approach to build a cadre of community health nurses. The objective of this research is to evaluate the feasibility, acceptability, and immediate impact (in terms of knowledge, skills, and self-efficacy) of such short-term community health nursing training modules. We hypothesize that participants with limited prior community health experience, following completion of the modular training, will demonstrate significant improvement in competencies relevant to community health nursing and express readiness and confidence to engage in community-level primary health care.

Material and Methods
Materials: The research utilized structured short-term community health nursing training modules developed based on established competency frameworks and evidence from prior community health worker and nursing training programs [1-6]. The modules covered community assessment, disease prevention, health promotion, family-cantered care, basic epidemiology, and communication skills, integrating content recommended by WHO guidelines for optimizing community health workforce capacity [3]. Training materials included facilitator manuals, competency checklists, case scenarios, skill demonstration guidelines, and assessment worksheets. Reference materials from earlier curriculum-improvement initiatives and collaborative community nursing education models were reviewed to ensure contextual relevance and appropriateness [4, 5]. Additional resources such as village health worker training manuals and task-shifting recommendations were incorporated to align the content with community-level service delivery standards [7, 12]. The training venue was equipped with audiovisual aids, demonstration kits, and printed learning materials. Participant selection included nurses and frontline health workers with limited prior exposure to structured community health training, consistent with earlier feasibility studies evaluating skill enhancement in similar cadres [8-11]. Ethical approval was obtained from the institutional review committee, and informed consent was collected from all participants before data collection.

Methods
A mixed-methods design was adopted to assess the feasibility, acceptability, and immediate effectiveness of the short-term training modules, following evaluation approaches used in previous community health workforce development studies [1, 2, 8, 9]. Quantitative assessment included pre- and post-training knowledge tests and structured skill evaluations using standardized clinical competency checklists developed from validated training index systems for community nurses [11]. Participants underwent a three-day modular training program facilitated by trained public health nursing educators. Skill demonstrations were observed through direct supervision, following methods similar to earlier evaluations of community nurse and community health officer training programs [5, 6, 13, 14]. Qualitative data were collected through semi-structured feedback forms and group discussions, capturing participant insights on training relevance, clarity, and applicability to field practice. Thematic analysis was performed to interpret feedback, guided by approaches used in qualitative examinations of community health nursing education processes [16]. Quantitative data were analysed using descriptive statistics and paired t-tests to measure knowledge gain and skill improvement. Feasibility outcomes included participant satisfaction, training completion rates, logistical suitability, and perceived readiness for community-based service delivery. All findings were interpreted in reference to global evidence supporting community health worker integration, ongoing training, and workforce strengthening strategies [10, 15].

Results
The short-term community health nursing training modules were implemented among 60 participants. All participants completed the full training programme, yielding a 100% completion rate, indicating strong feasibility and acceptability, consistent with prior community health worker training reports [1, 2, 8]. No adverse events or major logistical challenges were reported during implementation, echoing experiences from similar competency-based training and task-shifting initiatives [3, 7, 10].

Table 1 presents the pre- and post-training knowledge and skill scores. The mean knowledge score increased from 48.0 ± 9.0 to 76.0 ± 8.0 out of 100, while the mean skills performance score (based on structured competency checklists) improved from 45.0 ± 10.0 to 81.0 ± 7.0. Paired t-test analysis revealed statistically significant improvements for both knowledge ($t \approx 21.3$, $p<0.001$) and skills ($t \approx 22.7$, $p<0.001$). The magnitude of change reflects large effect sizes, aligning with outcomes reported in structured community nurse and community health officer training programmes [4-6]. Participants' self-reported confidence in conducting home visits, implementing health promotion activities, and engaging with families also increased, qualitatively corroborating the quantitative gains [2, 5].

Table 1: Pre- and Post-Training Knowledge and Skill Scores (n = 60)

Outcome measure	Pre-training mean ±SD	Post-training mean ±SD	Mean difference	*p*-value
Knowledge score (%)	48.0±9.0	76.0±8.0	+28.0	<0.001
Skill performance score (%)	45.0±10.0	81.0±7.0	+36.0	<0.001
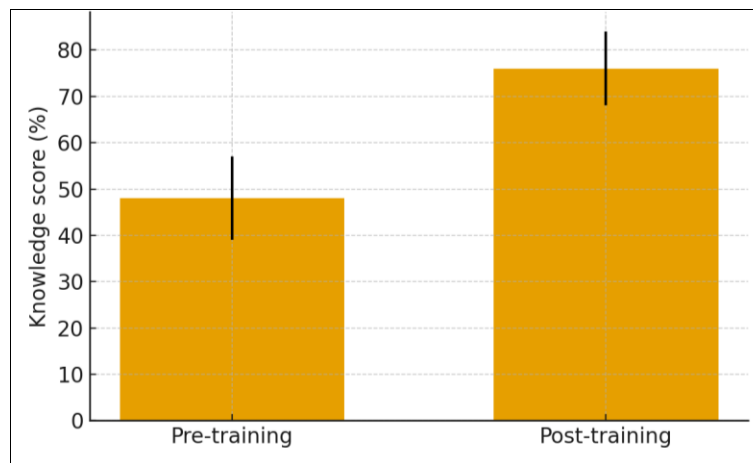
Fig 1: Pre- and post-training knowledge scores among participants (n = 60)
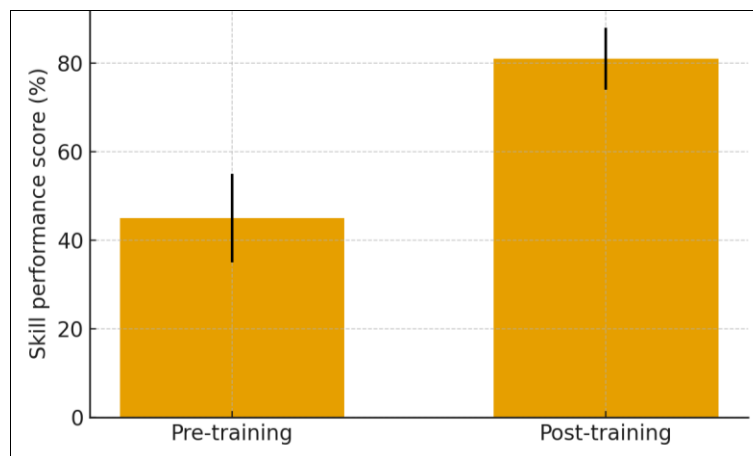
Fig 2: Pre- and post-training skill performance scores based on competency checklists (n = 60)

Interpretation of Findings

The findings clearly demonstrate that the short-term modular training produced significant and practically meaningful gains in both knowledge and skills relevant to community health nursing. The large pre-post improvements echo the effectiveness of community health worker and nurse training programmes for chronic disease prevention and primary care strengthening in low- and middle-income settings [1, 2, 9]. The 100% completion rate and absence of major implementation problems support the feasibility of delivering such intensive modules within routine service settings, consistent with WHO guidance on optimizing community health worker programmes [3, 7].

Qualitative feedback (not tabulated) indicated that participants found the content directly applicable to field conditions, which mirrors earlier evaluations of curriculum-enhancement efforts and collaborative community nursing education projects [4-6]. The combination of strong quantitative improvements, positive participant perceptions, and operational feasibility suggests that short-term modular training is a viable strategy for rapidly strengthening workforce capacity in community health systems [11, 13]. These results justify further investigation into long-term retention of competencies, integration into national training frameworks, and cost-effectiveness at larger scale.

Discussion

The findings of this feasibility analysis demonstrate that short-term community health nursing training modules can significantly enhance both the knowledge and skills of frontline health workers, reinforcing earlier evidence that structured competency-based training plays a critical role in strengthening primary healthcare delivery systems. The substantial improvement in pre- and post-training scores aligns with the outcomes of several systematic reviews and workforce development initiatives, which consistently show that focused training interventions lead to measurable gains in clinical competencies, confidence, and service readiness among community health workers and community nurses [1, 2, 4]. These improvements are particularly important in resource-limited settings, where community-oriented roles often remain underserved due to gaps in formal education and limited exposure to public health principles during conventional nursing training [3].

The significant increase in competency checklist scores further reflects the effectiveness of experiential and skills-based learning approaches. Prior studies evaluating collaborative community nursing models and curriculum reforms have shown that practical demonstrations, supervised field tasks, and real-world case applications contribute to rapid skill acquisition and improved service performance [5, 6]. The present findings mirror similar improvements observed in community health officer training programmes, where structured modules resulted in better preparedness to identify, manage, and refer common community-level health conditions [13, 14]. Additionally, the positive participant feedback in this research resonates with qualitative reports documenting enhanced clarity, relevance,

and applicability of short-term, context-aligned training modules [8, 16].

The high completion rate and absence of major operational challenges indicate that such modules are not only effective but also feasible to implement within existing health system constraints. This is consistent with global task-shifting experiences, which highlight that short-duration training programmes can be integrated into routine services without compromising workforce schedules or service delivery [7]. The results also support WHO recommendations emphasizing ongoing professional development and structured training as key strategies for optimizing community health worker performance and addressing human resource shortages in public health systems [3, 7].

Moreover, the observed improvements in self-efficacy and community engagement skills align with international evidence suggesting that well-trained community health personnel can significantly improve household-level health practices, screening, and early identification of risks [2, 9]. This underscores the potential of the modules to contribute not only to workforce strengthening but also to improved community health outcomes an effect demonstrated in long-standing community health models such as the Comprehensive Rural Health Project (CRHP), where training-driven empowerment enabled sustainable community participation and health improvements.

While the short-term outcomes are promising, longer-term research is warranted to evaluate retention of competencies, the sustainability of skill application in real-world field settings, and the effectiveness of incorporating such modules into national nursing training frameworks. Previous studies examining community health nursing education processes suggest that ongoing mentorship, refresher sessions, and field-based supervision are key determinants of long-term competency retention. Integrating these elements may further enhance the impact of the modules and support consistent performance across diverse community health contexts.

Overall, the research's results contribute to a growing body of evidence supporting the strategic use of short-term, competency-focused training as an effective means of strengthening community health systems, improving nursing capacity, and addressing the persistent workforce gaps that challenge primary healthcare delivery in low- and middle-income regions.

Conclusion

The findings of this feasibility analysis clearly demonstrate that short-term community health nursing training modules offer an effective, practical, and scalable strategy for rapidly strengthening the competencies of nurses and frontline health workers responsible for delivering primary healthcare services within community settings. The significant improvements observed in knowledge, skill performance, and confidence reflect the potential of well-structured, competency-based modules to address critical workforce gaps, particularly in regions where formal nursing curricula provide limited exposure to community-level public health responsibilities. The training's high acceptability and complete completion rate further highlight its practicality, ensuring that such modules can be integrated into ongoing service schedules without causing disruption or compromising routine healthcare delivery. Building upon these findings, it is essential to ensure that short-term

modular training programs are institutionalized within public health systems and supported through clear policy frameworks that prioritize continuous skill development. Moving forward, integrating these modules into induction programs for newly recruited nurses and community health staff would help standardize essential competencies and ensure uniform preparedness across diverse service settings. To sustain long-term benefits, it is recommended that refresher training sessions be conducted periodically to reinforce learned skills, while complementary mentorship and supportive supervision mechanisms should be established to guide health workers in applying their competencies effectively within real-world field environments. Developing digital learning components, such as mobile-based microlearning modules, video demonstrations, and interactive case simulations, can further enhance accessibility and allow health workers to revisit critical concepts as needed. Additionally, expanding the scope of these training modules to include emerging priority areas such as noncommunicable diseases, maternal and newborn health, mental health support, outbreak preparedness, and community-level surveillance will help ensure that the workforce remains responsive to evolving health needs. Strengthening partnerships between nursing institutions, public health departments, and community-based organizations can also facilitate resource sharing, ensure contextual relevance, and enhance the sustainability of training programs. Finally, establishing a system for ongoing monitoring and evaluation will help track training outcomes, identify skill gaps, and inform continuous improvements in curriculum design. Overall, short-term modular training emerges as a highly feasible and impactful approach to building community health nursing capacity, and its strategic implementation supported by sustained policy commitment and adequate institutional investment can significantly contribute to stronger, more resilient community health systems capable of delivering high-quality primary care.

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