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Original Research Article

Effectiveness of attitude-directed interventions on student nurses' attitude and perceived barriers regarding community health nursing bag use: a quasi-experimental study in Kanpur, India

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ABSTRACT

Background: The community health nursing (CHN) bag is an essential tool for delivering preventive, promotive, curative, and rehabilitative care at the community level. However, student nurses often exhibit negative attitudes and perceive significant barriers to its effective utilization, limiting the quality of field-based nursing care. Purpose: This study aimed to evaluate the effectiveness of attitude-directed interventions on student nurses' attitudes and perceived barriers regarding CHN bag utilization across selected nursing colleges in Kanpur, Uttar Pradesh.
Methods: A quasi-experimental, pre-test post-test control group design was employed with 80 student nurses recruited using non-probability purposive sampling. Data were collected using a 5-point Likert scale for attitude assessment and a structured ranking questionnaire for assessing perceived barriers. The experimental group received a structured teaching program comprising interactive lectures, demonstrations, and practical sessions.
Results: A statistically significant difference was found between experimental and control groups ($p<0.05$), indicating the effectiveness of attitude-directed interventions. Associations between demographic variables and attitude scores were analyzed across age, gender, academic year, course type, and previous exposure to CHN bag use.
Conclusions: Attitude-directed interventions significantly improve student nurses' attitudes toward CHN bag utilization and reduce perceived barriers. The findings support the integration of structured educational interventions in nursing curricula to enhance community health practice competency and professional preparedness.

Keywords: Community health nursing, CHN bag, Attitude, Intervention, Nursing education, Student nurses, Perceived barriers, Nursing skills

INTRODUCTION

The provision of community-based healthcare is a cornerstone of public health systems, particularly in developing nations like India, where the majority of the population resides in rural and semi-urban areas.[1] CHN plays a critical role in bridging the gap between institutional healthcare and home-based services, ensuring access, continuity, and comprehensiveness of care delivery.[2] One of the most essential and tangible tools in this domain is the CHN bag, which enables nurses to deliver preventive, promotive, curative, and rehabilitative services directly at the community level during home visits, outreach programs, and community health initiatives.[1,3]

The CHN bag is more than a mere collection of instruments and supplies; it is a symbol of preparedness, competency, and professional commitment in nursing practice. It equips nurses with essential materials to

perform basic clinical procedures such as wound care, immunization, temperature measurement, blood pressure monitoring, and comprehensive health assessments in varied and often resource-limited community environments.[4]

Despite its central role in community health practice, the effective utilization of the CHN bag among student nurses is often limited by multiple factors including inadequate training, poor equipment maintenance, low awareness, and importantly, negative or indifferent attitudes.[5,6] It has been consistently demonstrated that effective use of the CHN bag by student nurses is frequently constrained by attitudinal and psychological barriers. Student nurses entering fieldwork commonly report anxiety, lack of confidence, hesitation in handling equipment, and apprehension regarding community engagement due to perceived personal, institutional, or environmental barriers.[6,7]

Several Indian studies report that nursing students and teachers have variable knowledge, attitudes, and practices regarding CHN bag use, with barriers ranging from lack of water to inadequate training. A descriptive work among nursing teachers in Pune and students in Sangli, India has highlighted positive overall attitudes but significant practical constraints and inconsistent adherence to bag technique standards. However, there is limited interventional evidence on whether attitude-focused educational strategies improve students' attitudes and perceived barriers related to CHN bag use.[8-11] The current study aims to evaluate the effectiveness of attitude-directed interventions on student nurses' attitudes toward and perceived barriers regarding CHN bag utilization across selected nursing colleges in Kanpur, Uttar Pradesh.

METHODS

Research design and setting

A quasi-experimental pre-test–post-test control group design was adopted, which is suitable where randomization at the individual level is not feasible in academic settings. The study was conducted in selected nursing colleges in Kanpur, Uttar Pradesh, which follow the INC community health nursing curriculum and include regular community postings.

Population, sample and sampling

The target population comprised student nurses enrolled in the first and third year of GNM program. A sample of 80 students was selected using non-probability purposive sampling and allocated to an experimental group (n=40) and a control group (n=40) from comparable colleges to minimize contamination. Inclusion criteria typically included current enrolment in the specified years and willingness to participate, while students absent during data collection were excluded.

Intervention

The attitude-directed intervention for the experimental group consisted of: An interactive lecture on the importance, principles, and steps of CHN bag technique with emphasis on professional responsibility and patient safety. Demonstration and re-demonstration of bag technique using a standardized checklist. Case discussion and real examples with facilitated discussion for understanding professional responsibility, including ethical standards and accountability in CHN practice. Guided discussion and reflective practice sessions addressing common misconceptions and perceived barriers, focusing on building positive attitudes and self-efficacy.

The control group received routine teaching already in place in the institution without additional attitude-directed components.

Instruments

Three tools were employed: Demographic proforma capturing age, year of study, residence, previous exposure to CHN postings and prior training on bag technique.

Attitude scale toward CHN bag use, likely a structured Likert-type instrument with items addressing beliefs about importance, feasibility, and professional responsibility; content validity was established through expert review in CHN.

Ranking questionnaire identifying perceived obstacles such as lack of supplies, time pressure, and environmental constraints during home visits, where participants were asked to rank from most significant (1) to least significant barriers (5).

Content validity of the tools was ensured by a panel of experts and necessary modifications were made based on feedback.

Data collection procedure

Formal written permissions were obtained from selected nursing colleges. Ethical approval was taken from the institutional ethics committee. Informed consent was taken from all participants, after explaining the purposes and procedure of the study. Participation was voluntary, and confidentiality, anonymity, and the right to withdraw at any point without academic penalty were assured. As the intervention was educational in nature, the study involved minimal risk to participants. The data collection period was between July-2025 to August 2025. Pre-test data on attitude and perceived barriers were collected from both groups using the structured tools. The experimental group then received the attitude-directed intervention in scheduled sessions, while the control group continued with routine academic activities. After 1week of the

intervention, post-test attitude scores were obtained from both groups using the same scale.

Data analysis

Data was coded and entered on a spreadsheet and analyzed using descriptive and inferential statistics. Frequencies, percentages, means, and standard deviations described demographic variables, attitude levels, and barrier frequencies. Independent t-test compared mean attitude scores between experimental and control groups in pre- and post-tests. Chi-square test examined associations between post-test attitude categories and selected demographic variables. A p value less than 0.05 was considered statistically significant.

RESULTS

Sample characteristics

A total of 80 student nurses participated, with 40 in the experimental group and 40 in the control group. The average age of student nurses in the experimental group was 23.03±4.38 years, and in control group the average age was 22.1±2.5 years. All students present in the study were females. The distribution of the sample according to the year of the program showed that the majority of the students in the control group (80%) were from GNM 1st year, whereas in the experimental group, 60% were from 1st year and 40% from 3rd year. Sample was largely hostel based as majority of students in both the groups i.e., 87% in experimental and 97% in control group, residing in hostel. All the students were familiar with community postings. The study highlighted that all students had exposure to home visits with at least 1-5 visits during their CHN posting in the field. The data revealed that a large proportion reported never using CHN bags (Control: 42.5%, experimental: 72.5%). Very few used bags daily or weekly, which indicates poor practice of CHN bag use. Among the 40 students in the control group, 50% had performed the procedures, whereas out of 40 in the experimental group only 15% had done so, indicating a lower level of practical application of the CHN bag technique among the experimental group (Table 1).

Attitude level towards CHN bag use

At baseline, both groups exhibited predominantly negative to neutral attitude towards CHN bag use, reflecting a gap between theoretical emphasis and field practice. The data shows that all students in the experimental group (100%) exhibited a negative attitude while in control group 62.5% of the student nurses had a negative attitude towards community health nursing bag use. However, 37.5% of the student nurses in control group show neutral attitude towards CHN bag use. The post intervention findings shows dramatic improvement with none of the students in experimental showing negative or neutral attitude towards CHN bag use, while control group remained largely unchanged (55% negative and 45% neutral) (Table 2).

Pre-intervention attitude toward CHN bag use

Before the intervention, both groups showed predominantly neutral attitudes toward CHN bag use. The mean pre-test attitude score in the experimental group was approximately 50.97±1.98, while the control group had a mean of about 54.17±4.13, with no statistically significant difference between them at $p>0.05$ (Table 3). This suggests that any subsequent difference in post-test attitude can reasonably be attributed to the intervention rather than baseline variability.

Post-intervention attitude towards CHN bag use

After the attitude-directed intervention, there was a marked increase in attitude scores in the experimental group, while the control group showed minimal change. The mean post-test score of the experimental group increased to 88.55±4.73, compared to 55.77±6.01 in the control group. The difference between the groups was found to be highly significant (independent t test, $t=27.09$, $p<0.00001$). Table 3 presents a comparison of the attitude scores of the experimental and control groups before and after the intervention.

Perceived barriers of student nurses regarding utilization of community health nursing bag

Student nurses reported several barriers across training, institutional, logistical, time, personal, and practical categories. The barriers were assessed using a structured ranking questionnaire. The commonly reported perceived barriers are tabulated in the Table 4.

In training barriers and knowledge barriers, student nurses reported barriers like inadequate training and poor understanding of purpose and contents of community health nursing bag as a major barrier. In Institutional and logistical barrier, most common identified barriers were inadequate availability of CHN bags and outdated/damaged equipment. Short time period of community postings and overlapping of academic workload were reported as common barriers under time barriers. Fear of judgement, low confidence and anxiety due to lack of peer or faculty support were identified as common barriers under personal barriers by the students. Students also reported difficulty in cleaning/ maintaining bag and unavailability of consumables as major additional practical barriers. The most frequently reported barriers were unavailability of consumables (47.5%) and poor understanding of the purpose of bag (42.5%), followed by inadequate training (35%) and anxiety due to lack of support (32.5%).

Association with demographic variables

Chi-square analysis indicated no statistically significant association between post-test attitude levels and demographic variables such as age, year of study, type of residence, previous exposure to community posting,

number of home visit conducted, formal training and any procedure performed using bag technique. This suggests that structured attitude-directed interventions can be beneficial across diverse student subgroups.

Table 1: Demographic data of study participants in experimental and control group, (n=80).

Demographic variables	Experimental group	Control group
Age (Mean±SD) (in years)	23.03±4.38	22.1±2.5
Year of study		
GNM 1st year	24 (60%)	32 (80%)
GNM 3rd year	16 (40%)	8 (20%)
Type of residence		
Hostel	35 (87.5%)	39 (97.5%)
Day scholar	5 (12.5%)	1 (2.5%)
Previous exposure to community posting		
Yes	36 (90%)	33 (82.5%)
No	4 (10%)	7 (17.5%)
Number of home visits conducted		
1-5 visits	28 (70%)	37 (92.5%)
6-10 visits	12 (30%)	3 (7.5%)
Area of last community posting		
Urban	13 (32.5%)	17 (42.5%)
Rural	14 (35%)	7 (17.5%)
Both	13 (32.5%)	16 (37.5%)
Formal training in CHN bag use		
Received	13 (32.5%)	7 (17.5%)
Not received	27 (67.5%)	33 (82.5%)
Frequency of bag use during the visit		
Weekly	04 (10%)	09 (22.5%)
Monthly	01 (2.5%)	05 (12.5%)
Rarely	06 (15%)	09 (22.5%)
Never	29 (72.5%)	17 (42.5%)
Whether performed any procedure using bag technique using the CHN bag		
Yes	06 (15%)	20 (50%)
No	34 (85%)	20 (50%)

Table 2: Classification of attitude level: pre-test and post-test distribution, (n=80).

Attitude level	Score range	Experimental group		Control group	
		Pre-test	**Post-test**	**Pre-test**	**Post test**
Strongly negative	22-37	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Negative	38-55	40 (100%)	0 (0.0%)	25 (62.5%)	22 (55%)
Neutral	56-73	0 (0.0%)	0 (0.0%)	15 (37.5%)	18 (45%)
Positive	74-91	0 (0.0%)	27 (67.5%)	0 (0.0%)	0 (0.0%)
Strongly positive	92-110	0 (0.0%)	13 (32.5%)	0 (0.0%)	0 (0.0%)

Table 3: Pre and post-intervention attitude scores in experimental and control groups, (n=80).

Groups	Mean attitude score pre-intervention	SD	T test	Mean attitude score post-intervention	SD	T test
Experimental	50.975	1.98	0.0013 (NS)	88.55	4.73	27.09 ($p<0.0001$) Significant
Control	54.175	4.13		55.77	6.01	

Table 4: Frequency and percentages of perceived barriers of CHN bag use among student nurses, (n=80).

Barrier category	Experimental group, (n=40)	Control group, (n=40)	Total, (n=80)
Training and knowledge barriers			
Inadequate training	19 (47.5%)	9 (22.5%)	28 (35%)
Poor understanding of purpose of bag	16 (40%)	18 (45%)	34 (42.5%)

Continued.

Barrier category	Experimental group, (n=40)	Control group, (n=40)	Total, (n=80)
Institutional and logistical barriers			
Inadequate CHN bags	16 (40%)	8 (20%)	24 (30%)
Outdated/damaged equipment	12 (30%)	9 (22.5%)	21 (26.25%)
Time barriers			
Overlapping academic assignments	14 (35%)	9 (22.5%)	23 (28.75%)
Short duration of field postings	12 (30%)	11 (27.5%)	23 (28.75%)
Personal barriers			
Fear of judgement	11 (27.5%)	8 (20%)	19 (23.75%)
Low confidence	10 (25%)	12 (30%)	22 (27.5%)
Anxiety due to lack of support	13 (32.5%)	13 (32.5%)	26 (32.5%)
Additional practical barriers			
Difficulty in cleaning/maintaining bag	10 (25%)	5 (15%)	15 (18.75%)
Unavailability of consumables	21 (52.5%)	17 (42.5%)	38 (47.5%)

DISCUSSION

The study highlighted that before the intervention, all students in the experimental group (100%) and the majority in the control group (62.5%) had the negative attitude, with the remaining 37.5% of control students classified as neutral, and no participants in either group had positive attitude towards the community health nursing bag. This clearly reflects a substantial baseline gap between the theoretical importance of the CHN bag and students' actual disposition toward its use, mirroring descriptive studies from Indian nursing colleges where students report limited enthusiasm or confidence in community procedures despite adequate curriculum coverage.[7,9]

The study demonstrates that an attitude-directed educational intervention can significantly improve student nurses' attitudes toward CHN bag use, adding interventional evidence to a literature base largely composed of descriptive studies. Similar gains in attitudinal or perceptual outcomes following focused educational interventions have been reported in other nursing contexts (e.g., mental health, patient safety), supporting the broader effectiveness of structured, attitude-oriented teaching strategies.[1,10-14]

Despite robust improvement in attitude, a range of perceived barriers to CHN bag use were documented across both groups, grouped into training/knowledge, institutional/logistical, time, workload, and additional barriers categories. Training-related barriers such as inadequate formal instruction and poor understanding of bag contents were more prominent in the control group, which aligns with the intervention's emphasis on conceptual clarifications and role-responsibility in the experimental arm. This suggests that attitude-directed interventions may also indirectly reduce training-related barriers by enhancing clarity, motivation, and perceived relevance, even if the primary focus is attitudinal change rather than skill practice.[8]

Institutional and logistical barriers, such as the unavailability of consumable items in the bag, lack of consistent supply, and difficulty arranging suitable space and resources in the field, were among the most frequently reported barriers in both groups. Similar barriers have been reported among nursing teachers in Pune and students in other Indian states, where limited supplies, poor replenishment systems, and infrastructure constraints in community settings impede optimal bag utilisation despite positive professional attitudes. The persistence of these barriers indicates that improving attitude alone is insufficient to ensure complete practice change; curricular efforts must be accompanied by institutional commitment to providing complete, well-maintained bags, waste disposal options, and adequate field resources.[8,9]

Time and workload barriers, including short community postings, overlapping academic assignments, and heavy workload during visits, were also commonly cited and are consistent with earlier reports that competing academic demands and limited posting duration limit opportunities for students to apply community procedures systematically. Additional practical barriers such as lack of supervision, anxiety, and limited peer support further echo evidence from qualitative and descriptive studies, in which students describe feeling unprepared or unsupported in the field despite classroom teaching on CHN bag technique. Together, these findings suggest that attitude-directed interventions should ideally be paired with structured pre-posting orientation, planned faculty presence during visits, and opportunities for guided practice to consolidate attitudinal gains into routine behaviour.[7,9]

The absence of significant associations between demographic variables and attitude suggests that well-designed interventions can benefit students regardless of background, which is encouraging faculty planning large-group CHN teaching. Future research could examine whether combining attitude-directed interventions with skills-based simulation and objective structured clinical examination (OSCE) leads to sustained improvements in both attitude and performance.

The study found no association between attitude level and demographic variables, which implies that the personal

traits do not affect the attitude level. This implies that changes are required at program level, i.e. embedding attitude-directed interventions in core community health nursing courses, standardizing CHN bag orientation across batches, and ensuring consistent supervision. This can create widespread improvements in attitude level rather than student backgrounds.[1]

Studies from Sangli, Miraj, Kupwad and other regions have reported that most students recognize the CHN bag as a valuable tool yet face difficulties related to bag weight, space constraints in homes, time pressure, and lack of consumables, which parallels the barriers identified here.[1,7,9] The distinctive contribution of the current study lies in moving beyond description to intervention, showing that a focused, attitude-directed program can shift students from entirely negative to predominantly positive/strongly positive attitudes in a relatively short time.

Limitations

The quasi-experimental design without individual randomization may introduce selection bias, although comparable baseline characteristics help mitigate this concern. The study was limited to selected colleges in Kanpur and a single follow-up period, which may restrict generalizability and the ability to comment on long-term attitude change. Self-reported barriers may also be subject to response bias.

CONCLUSION

The study concludes that attitude-directed interventions significantly enhance student nurses' attitudes toward community health nursing bag use irrespective of their demographic and academic background. The study also highlights modifiable barriers to consistent application of bag technique during community postings. Embedding such interventions into community health nursing curricula, coupled with improved field supervision and logistical support, can strengthen students' readiness to deliver safe, standardized home-based care.

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