



## Influence of Placement of Nurse Trainees on Community Hygiene and Sanitation Practices in Masaka District, Uganda

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| Article History                                                                                                                                 | Abstract                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| Received: 22 May 2026<br>Accepted: 26 Jun 2026<br>Published: 03 Aug 2026                                                                        | Hygiene and sanitation problems still pose a threat to communicable diseases such as diarrhoea, cholera, and typhoid in several third-world countries like Uganda. Nurse trainees are vital in community health education in terms of sensitising households on better hygiene and sanitation practices. This study examined the impact of placement of nurses on household hygiene and sanitation practices in Masaka District, Uganda. The study adopted a mixed-method research design on a purposively selected sample: 44 nurse trainees, 92 households, and 6 key informants. Data was collected using a structured questionnaire, an observation checklist and key informant interviews. Analysis was done using descriptive statistics and thematic analysis. The findings showed that there were improvements in household hygiene and sanitation after the placement of nursing students in the households. Access to sites where hand washing could be done was increased from 38.0% to 72.8%, whereas the frequency of hand washing was increased from 28.3% to 65.2%. Access to latrines was increased from 54.3% to 82.6%, and the percentage of open defecation was reduced from 52.2% to 85.9%. The nursing students went to houses, demonstrated hand washing, advocated for safe handling of water, recommended latrine use, and worked with community groups. In conclusion, household hygiene and sanitation in the Masaka district improved due to the placement of nursing students. Community placement of nursing students is a useful strategy for preventing health care. This study recommends that training institutions and policy makers should adopt nurse trainee placements as a way of improving community hygiene and sanitation. |
| License: CC BY 4.0 <sup>1*</sup><br><br>Open Access article. | <b>Keywords:</b> Nursing trainees, hygiene, sanitation, community health, behaviour change, Uganda                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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## Introduction

Hygiene and sanitation play an integral part in ensuring the health and well-being of society as they are involved in disease prevention, environmental sanitation, and the well-being of individuals. Sanitary conditions and proper hygiene help significantly in the prevention of infectious diseases such as cholera, typhoid, dysentery, and diarrhoea that are major threats to millions of people across the globe (World Health Organisation, 2024). Improvements in sanitation have traditionally been linked with lower incidence of infectious diseases and death rate, especially among rapidly expanding urban populations (Baker et al., 2022). While there have been significant developments around the globe regarding WASH practices, there remain huge disparities, particularly in developing nations where numerous communities are deprived of proper sanitation facilities, efficient waste management, and clean water supply (Dickin & Gabrielsson, 2023).

Worldwide, poor sanitation and hygiene are major causes of avoidable health problems. The World Health Organisation indicates that there are billions of people around the world who have no access to safely managed sanitation facilities, whereas others use unimproved facilities for sanitation and open defecation (WHO, 2024). Poor hygiene practices, especially improper hand washing and unsafely managed water, make disease transmission from the faeces through the mouth easier (Tawaeesan et al., 2026).

In sub-Saharan Africa, sanitation issues are compounded by fast population growth, high urbanisation levels, poverty, and poor sanitation infrastructure. There is data to show that the number of people who have access to safely managed sanitation facilities is a fraction of the total population, and most areas suffer poor waste management and sanitation (Base et al., 2024; Omohwovo, 2024). Some of these problems relating to sanitation and hygiene are evident in Uganda. While some reforms on issues of WASH have been adopted by the country, the prevalence of diseases linked to poor sanitation is still common among several districts in the country (ceccarelli et al., 2026). The national health policy of Uganda focuses on preventive measures and the involvement of the community, which are critical components that make up better health standards within communities in Uganda (Nyonjo & Nakibuule, 2024). Sadly, even with a health policy in place, the poor hygiene and sanitation within the community threaten human health (Owiredu et al., 2025).

Masaka district of Uganda has sanitation and hygiene challenges despite the efforts made by various authorities to ensure public health and sanitation. There are several diseases in Masaka district that result from improper disposal of waste, inadequate hand washing, and poor

sanitation (Musoke et al., 2018). Additionally, Musoke et al. highlighted that various campaigns have been carried out in the district to improve the state of sanitation, such as environmental sanitation and disease prevention, through various activities such as cleaning campaigns.

Nursing trainees have an essential function to play in advocating for hygiene and sanitation in the community. Community-oriented nursing education makes it possible for nursing trainees to engage in health promotional activities such as household visits, sensitisation on sanitation, hand washing practices, and health education sessions (Zeydani et al., 2023). Through this engagement, nursing trainees help to create awareness regarding sanitation and hygiene practices and improve their communication and practical skills at the same time. According to the literature on community health nursing, nursing trainees' placements increase preventive healthcare services and expand health promotion activities to reach disadvantaged communities (Sharma et al., 2019). This shows that nursing trainees' involvement in sanitation promotion can be a cost-effective approach in the promotion of community hygiene and sanitation.

Several empirical research works have been carried out on the correlation between nursing trainee placement and hygiene improvement initiatives. For example, Ntaro et al. (2025) carried out a quasi-experimental study in rural Uganda, which found that households receiving hygiene education from trainees showed a significant improvement in hygiene knowledge and hand washing behaviours. The same was observed by (Omari et al. (2026) in their findings concerning the impact of outreach services in Kenya, where literacy and transmission pathways for diseases were understood well.

Although there is an increasing amount of evidence to support community-based education in the field of nursing, there are still some critical areas that need further research attention. Previous research has mainly concentrated its efforts on hygiene awareness and knowledge improvement while ignoring the practical impacts of these programs in terms of sanitation and hygiene practices. Moreover, some of the researchers used self-reporting measures for the study (Omari et al., 2026), and very few studies are conducted within the area of concern (Masaka District in Uganda). Although nursing trainee placements are carried out regularly among the community health sector in Masaka District, not much is known about whether such placements have an actual impact on the sanitation behaviours observed in households, including behaviours such as hand washing, safe water handling, waste management, toilet utilisation, and overall environmental hygiene. Filling

this gap is critical for a number of reasons. Firstly, poor sanitation and hygiene continue to be major sources of avoidable sicknesses and losses in Uganda (Katushabe). Secondly, evaluating the success of placements of nursing trainees may assist in developing evidence-based initiatives for health campaigns within communities and the training of nurses. Thirdly, research findings may promote cooperation among training centres, district health systems, and the community structure in improving preventive healthcare.

Against the highlighted background, this current study assessed the effect of placing nurse trainees in their respective communities on the hygiene and sanitation behaviour among people living in Masaka District, Uganda. This study sought to produce empirical data that could be used to help make policy decisions regarding community-based nursing training in Masaka District.

### Methodology

A mixed-methods approach was used in this study because it allows for a broad examination of the effect of placing nursing trainees on hygiene and sanitation practices. Combining the two research designs gives both the breadth of the quantity of changes measured, as well as depth to the exploration of human behaviour.

The study was carried out in Masaka District in Central Uganda. The region is characterised by increasing rates of urbanisation and continuous problems related to sanitation, waste disposal and hygiene. The area has various institutions which train health care workers, and hence, there are regularly many nursing trainees placed in the community (Nsimbe et al., 2018). A sample size of 44 nursing trainees, 92 households, and 6 key informants were purposively selected. Sample size considerations were based on the table by Krejcie and Morgan (1970) that helps in identifying sample sizes required for research purposes.

Data was collected using structured questionnaires, observation checklists and key informant interviews. The pre- and post-observation assessments were carried out, as the effect of nursing trainees' placement in the community on hygiene and sanitation practices was investigated using an observational assessment tool, and a questionnaire was administered to all nursing trainees involved in placement in the community. Data on the community, households and key persons were collected. Quantitative data were analysed using descriptive while qualitative data were analysed using thematic analysis.

Ethics clearance was granted by the Research Ethics Committee of the University of Port Harcourt, Nigeria (UPH/R&D/REC/EXEC/004/028). All subjects

participating in the study were asked to provide consent after receiving a clear explanation of the nature of the study. Anonymity and confidentiality were guaranteed for all participants. It was also explained to all participants that participation is voluntary, and at any time, any participant could withdraw from the study.

## Results

### Quantitative results

All 44 nursing trainees returned filled questionnaires, all 92 households participated in both pre and post-observation, and all 6 key informants participated in the interview (Hence 100% response rates).

**Table 1:** Demographic Characteristics of Nursing Trainees ( $n = 44$ )

| Variable                     | Frequency | Percentage (%) |
|------------------------------|-----------|----------------|
| <b>Gender</b>                |           |                |
| Male                         | 14        | 31.8           |
| Female                       | 30        | 68.2           |
| <b>Age Group</b>             |           |                |
| 18–24                        | 20        | 45.5           |
| 25–30                        | 18        | 40.9           |
| 31 and above                 | 6         | 13.6           |
| <b>Duration of Placement</b> |           |                |
| Less than 1 month            | 6         | 13.6           |
| 1–3 months                   | 20        | 45.5           |
| 4–6 months                   | 12        | 27.3           |
| More than 6 months           | 6         | 13.6           |
| <b>Area of Placement</b>     |           |                |
| Rural                        | 22        | 50.0           |
| Peri-urban                   | 14        | 31.8           |
| Urban                        | 8         | 18.2           |

Table 2 showed pre and post placement hygiene status in households. Initially (baseline), indicators for hygiene status were relatively low with less access to water supply for hand washing (38.0%), less access to soap/ash (30.4%) and with poor evidence of hand washing behaviour (28.3%). After the placement of trainees, almost all hygiene indicators improved significantly. Access to hand washing facilities improved to 72.8%, while access to soap/ash improved to 69.6% and evidence of hand washing behaviour improved by over twofold (65.2%), suggesting that not only the infrastructure but also the behaviour has been influenced by the intervention. Similarly, safe disposal of drinking water improved from 45.7% to 80.4%, and hygiene related indicators like environmental hygiene improved to 82.6%. The changes were between 28% and 39% in almost all indicators, proving that there was a significant change in the hygiene status at household level.

**Table 2:** Pre and Post Placement Hygiene Practices in Households ( $n = 92$ )

| Hygiene Indicator                          | Pre (Yes) | Pre (%) | Post (Yes) | Post (%) | % Change |
|--------------------------------------------|-----------|---------|------------|----------|----------|
| Presence of handwashing facility           | 35        | 38.0    | 67         | 72.8     | +34.8    |
| Availability of water at handwashing point | 39        | 42.4    | 72         | 78.3     | +35.9    |
| Availability of soap/ash                   | 28        | 30.4    | 64         | 69.6     | +39.2    |
| Evidence of handwashing practice           | 26        | 28.3    | 60         | 65.2     | +36.9    |
| Safe storage of drinking water             | 42        | 45.7    | 74         | 80.4     | +34.7    |
| Clean household compound                   | 46        | 50.0    | 76         | 82.6     | +32.6    |
| Good personal hygiene observed             | 44        | 47.8    | 70         | 76.1     | +28.3    |

**Table 3:** Pre and Post Placement Sanitation Practices in Households (n = 92)

| Sanitation Indicator             | Pre (Yes) | Pre (%) | Post (Yes) | Post (%) | % Change |
|----------------------------------|-----------|---------|------------|----------|----------|
| Presence of a functional latrine | 50        | 54.3    | 76         | 82.6     | +28.3    |
| Latrine cleanliness              | 36        | 39.1    | 68         | 73.9     | +34.8    |
| Evidence of latrine use          | 44        | 47.8    | 72         | 78.3     | +30.5    |
| Absence of open defecation       | 48        | 52.2    | 79         | 85.9     | +33.7    |
| Proper solid waste disposal      | 38        | 41.3    | 69         | 75.0     | +33.7    |
| Absence of scattered waste       | 41        | 44.6    | 73         | 79.3     | +34.7    |
| Proper wastewater disposal       | 34        | 36.9    | 65         | 70.7     | +33.8    |

Table 3 shows the pre and post placement practice in the households. Initially, 54.3% of households had functional latrines, while only 39.1% of households had clean latrines. The data show that after the intervention, functional latrines reached 82.6% and latrine cleanliness reached 73.9%. Also, evidence of use reached 78.3%, which is 47.8% before the intervention. Absence of open defecation reached 85.9% after and before 52.2%. Disposal of solid waste and wastewater increased up to 75.0% and 70.7%, respectively. The increase in sanitation indicators were between 28% and 35%.

**Table 4:** Roles Played by Nursing Trainees in Promoting Hygiene and Sanitation (n = 44)

| Statement                           | Mean | Std. Deviation |
|-------------------------------------|------|----------------|
| Conduct household visits            | 4.2  | 0.8            |
| Demonstrate handwashing techniques  | 4.4  | 0.6            |
| Educate on safe water handling      | 4.3  | 0.7            |
| Promote proper waste disposal       | 4.1  | 0.9            |
| Encourage latrine use               | 4.3  | 0.7            |
| Participate in sanitation campaigns | 4.2  | 0.8            |
| Mobilise against open defecation    | 4.1  | 0.9            |
| Identify sanitation risks           | 4.0  | 0.8            |
| Collaborate with VHTs/LCs           | 4.3  | 0.7            |
| Follow up households                | 4.2  | 0.8            |

From Table 4, nursing students participated in various hygiene and sanitation promotion roles. Most activities registered mean values of at least 4.0, indicating a consensus from respondents that students participated.

Demonstration of hand washing techniques (Mean = 4.4) was the top-rated activity, revealing a greater emphasis on practice skills teaching in nursing training on handwashing. High-level activities also included educating the households about water use and storage (Mean = 4.3), promotion of toilet use (Mean = 4.3) and working with community groups (Mean = 4.3). Home

visits (Mean = 4.2) and home follow-ups (Mean = 4.2) also demonstrated continued involvement of students in the community.

### Qualitative results

#### Perceived baseline hygiene and sanitation conditions

Key informants described the situation before the placement of nurse trainees as generally characterised by poor hygiene and sanitation practices. Respondents noted that many households lacked basic hygiene facilities and had limited awareness of proper sanitation practices.

One respondent explained:

“Before the trainees came, many people did not take hygiene seriously. Handwashing was not common, and even where water was available, people did not use it properly.”

Another informant stated:

“There were issues with open defecation and poor waste disposal. People did not fully understand the health risks.”

### **Improvement in hygiene practices**

Key informants consistently reported noticeable improvements in hygiene practices following the placement of nurse trainees. The most commonly mentioned changes included increased handwashing, better handling of drinking water, and improved household cleanliness.

One respondent noted:

“Since the nurse trainees started coming, people have improved on handwashing because they are continuously taught and shown how to do it properly.”

Another added:

“Households now keep their water in clean and covered containers. This was not common before.”

### **Improvement in Sanitation Practices**

Respondents also reported significant improvements in sanitation practices within the community. Key areas of change included increased latrine use, improved cleanliness of sanitation facilities, better waste management, and reduced open defecation.

One key informant stated:

“There is a big change in sanitation. People are now using latrines more and keeping them clean.”

Another respondent observed:

“Open defecation has reduced because people are now more aware of the dangers and have been encouraged to use latrines.”

In addition, some respondents highlighted improvements in environmental sanitation:

“People are now disposing of waste properly and keeping their compounds clean compared to before.”

### **Role of nursing trainees in driving change**

Key informants emphasised that the observed improvements were largely driven by the active involvement of nursing trainees in the community. Trainees were described as playing multiple roles, including educators, demonstrators, mobilizers, and follow-up agents.

One respondent explained:

“The trainees move from house to house, teaching people and demonstrating what to do. That has helped a lot because people learn by seeing.”

Another informant stated:

“They also organise community meetings and work with us (VHTs) to educate people about sanitation.”

Respondents further highlighted the importance of continuous engagement:

“They don’t just teach once and go. They come back to check if people are doing what they were taught.”

### **Community response to the intervention**

The majority of key informants reported that community members responded positively to the presence and activities of nurse trainees. This positive reception appeared to facilitate the adoption of improved hygiene and sanitation practices.

One informant noted:

“People listen to them because they see them as health workers and trust the information they give.”

Another added:

“The community is cooperative, especially when trainees involve local leaders during sensitisation.”

However, some respondents also hinted at initial resistance:

“At first, some people were reluctant to change, but with time and continuous teaching, they started accepting the messages.”

### **Challenges affecting hygiene and sanitation improvement**

Despite the observed improvements, key informants identified several challenges that may limit the sustainability of hygiene and sanitation practices.

Some respondents mentioned resource-related constraints:

“Some households still lack materials like soap, even if they understand its importance.”

Others highlighted structural challenges:

“In some areas, building latrines is difficult due to soil conditions or lack of space.”

### **Discussion**

This research sought to analyse the impact of the positioning of nurse trainees on the hygiene and sanitation practices in Masaka District in Uganda. The results showed that there was an improvement in hygiene

behaviour within the households due to the placement of the nursing students. The presence of hand washing facilities improved after placement. The availability of soap or ash also improved. There was also an improvement in the behaviour of hand washing. Clean drinking water also improved. Cleanliness of the house also went improved. Qualitative findings confirmed the quantitative results. The key informants indicated poor hygiene practices before the interventions, such as low hand washing practices and improper handling of water. The trainees continuously educated the households on good hygiene practices, including appropriate hand washing procedures. According to one respondent, households started practising proper hand washing due to the trainees who kept educating and demonstrating how to wash hands. Another respondent revealed that families started storing water in clean and covered jerry cans following the interventions. These results indicate that repeat involvement, demonstration, and follow-up visits at home were key factors in achieving the success witnessed. They provide evidence to the notion that community nursing placements serve as effective public health interventions outside the realm of training alone (Makita & Calanzani, 2026). The results corroborates those found by Ntaro et al. (2025), where there were marked increases in the level of awareness about hygiene and hand washing after the delivery of training-based hygiene education in rural Uganda by the trainees. In a similar vein, Omari et al. (2026) observed that student nurses' interventions in Kenya led to improved levels of hygiene awareness and knowledge about disease prevention in households. Unlike the Ntaro et al. (2025), which mainly focused on increasing the level of awareness of hygiene issues, the current study provides evidence of household behavioural change.

This study also noted that there were marked enhancements in terms of the practice of sanitation following the employment of nurse trainees. There was an increase in the availability of working latrines, an improvement in latrine sanitation, and latrine usage. There were improvements in open defecation and proper handling of solid waste and wastewater. These results show that nurse trainees were able to contribute positively to the practice of environmental sanitation. The qualitative findings corroborated these results as most of the informants mentioned that there was an increase in the use of latrines, proper waste disposal and sanitation of facilities and decreased open defecation

since the implementation of the project. According to one of the informants, there was "a big change in sanitation" due to increased use and cleaning of the latrines, while another said there was less open defecation because people had become more health-conscious about their practices. This implies that sensitisation by trainees helped in improving community behaviour towards sanitation. These results are consistent with the work of Ntaro et al. (2025) on communities participating in trainee engagements, which showed increased awareness of the importance of proper sanitation in Western Uganda. Also, in another study, Deepak et al. (2020) observed a reduction in instances of open defecation among communities whose members were actively engaged as trainees in sanitation projects in Nepal.

The other significant observation pertained to the involvement of the nurse trainees in the promotion of hygiene and sanitation practices. Nurse trainees were significantly involved in the execution of house visits, showing how to wash hands, educating on the proper handling of safe water, encouraging the use of latrines, collaborating with Village Health Teams (VHTs), and others. The mean scores of activities in this domain were relatively high (at least mean 4.0). Qualitative findings indicated that the nurse trainees visited households, showed techniques, convened community meetings, and returned several times. The participants observed that nurse trainees collaborated with village administrators and Village Health Teams (VHTs). These results are in line with the studies conducted by (Makita & Calanzani, 2026), which highlighted that nursing trainees played an important role in sanitation education and environmental health promotion. Likewise, Blomgren et al. (2024) referred to nursing trainees as "compliance influencers," who promote compliance with hygienic and sanitary practices through positive reinforcement and repeated interaction.

This study had few limitations. The observation assessment used during the survey, together with the self-reported information collected from households, may have led to observer bias and social desirability bias. More so, the study only took place in a particular geographic area in the Masaka district, making the results of the study not easily generalisable. Moreover, the short study period made it difficult to find out if the improvements were sustainable over time. Poverty, sanitation facilities, and water scarcity can negatively



impact the sustainable practice of hygiene and sanitation (Deepak et al., 2020).

## Conclusion

The findings of this research study provide empirical evidence that nurse trainee placement in communities is a viable method for enhancing the preventive health behaviour and environmental sanitation practices of the community population. Through its emphasis on behavioural changes rather than awareness alone, this research study adds to existing knowledge in the field of community health nursing.

This study recommends that training institutions and policy makers should adopt nurse trainee placements as a way of improving community hygiene and sanitation. There is need for reinforcement of the community attachments for the nursing students to help create hygiene and sanitation practices in households. Health departments for each district make provisions for participation of the nursing students in public health campaigns within communities. Measures for regular supervision and monitoring need to be made to ensure sustainable improvement in terms of hygiene and sanitation practices within the community members. The government and developmental organisations should ensure provision of the necessary facilities for hygiene and sanitation such as access to clean water, soap, and waste removal services. More studies need to be undertaken on sustainability of the hygiene and sanitation interventions by the nurse trainees in communities.

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