Using Action Research to Improve Hand Washing among Staff and Pupils of St. Paul Primary School Nsambya, Makindye Division – Kampala District, Uganda .

Henry Pecos Nvule[a,1], **Arthur Kiconco**[a]

[a] Uganda Martyrs University

Abstract

Background:[a]
Many private and public schools in Kampala and Nsambya specifically do not provide soap and water at school near toilets or pit latrines for hand washing. Even though some schools do provide these supplies, problems such as vandalism by pupils make it difficult to maintain them, thereby preventing consistent and effective hand washing by pupils. This action research carried at St. Paul primary school was done to address the most common health problem of hand hygiene, and ways of how to improve hand hygiene.

Methodology:
Meetings, interviews, and a focus group discussion were the methods used for data collection. Respondents were administrators, head teacher, support staff, and pupils at St. Paul primary school Nsambya, Makindye Kampala districts. Qualitative content analysis was used to explore stakeholders' experiences.

Results:
A total population of 670 that include the pupils, teachers, and support staff, out of the total population, 652(97.3%)are pupils (376 girls and 275 boys as displayed on the notice board), 15 (2.2%) are teachers and 3 (0.5%) are support staff. Health challenges included lack of sanitary pads for the girls which makes them uncomfortable at school, hunger at school since no meals are provided at school, over falling sick and lack of medical care at school, Pupils are sent to a nearby hospital, poor hygiene of some members of the community.

Conclusion and recommendations :
Stakeholders were awakened by the approach, as they were more responsive to health challenges and possible local solutions. Nonetheless, the use of participatory action was considered in full knowledge of the undesirable and complex experiences, such as uncertainty, conflict, and stress. For maintenance of hand washing supplies and providing ongoing education to promote effective hand washing among pupils was communicated to the pupils and school management.

[a]submitted: 11th/02/2021 accepted: 18th/05/2021 email: nvupec@gmail.com

1 Background:

Action research is emerging as an important method for health-related research activity and particularly as a method for supporting organizational change. Wood *et al.,* (2014) asserts that an action research paradigm may offer suitable ways to navigate new educational pathways suited for improving and sustaining social life in the 21st century.

According to Lingard *et al.,* (2008) Action research which is also known as Participatory Action Research (PAR) or community-based study is an approach commonly used for improving conditions and practices in a range of healthcare environments. Reason *et al.,* (2006) stated that Action research is defined as an interactive inquiry process that balances problem-solving actions implemented in a collaborative context with data-driven collaborative analysis or research to understand underlying causes enabling future predictions about personal and organizational change. Johnson *et al.,* (2012) suggested that Accomplishing this requires active collaboration between the researcher and the clients as a primary aspect of the research.

Saunders *et al.,* (2003) quoted that action research differs from other forms of applied research because of its "explicit focus on action", in particular the aim to endorse change and Experience in a specific situation generate insights and understanding which can inform actions in similar situations.

Action research is undertaken in a school setting is a reflective process that allows for inquiry and discussion as components, it is a collaborative activity among colleagues searching for solutions to every day, real problems experienced in schools, or looking for ways to improve instruction and increase pupil's achievement through ensuring a healthy environment. A school setting is good to choose because it allows instilling health-promoting activities right away from the grass root to pupils' health enabling them to acquire a healthy productive lifestyle. It also requires that participants identify their major challenges and find lasting and sustainable solutions to the identified challenges through the principle of oneness and community participation.

Action research in schools is an influential tool for primary school-going pupils health investigation that serves as a purposeful activity that aims at identifying health challenges in specific situations hence aiming at creating change in health well being through reaching a wide community for the implementation of health programs; this study will identify health challenges faced by staff and pupils of St. Paul primary school, it is necessary to consider Action research in the school setting. At the same time, it allows them to try out ideas, to improve or make changes, and increase their understanding and awareness of their health challenges.

St. Paul primary school is one of the private schools found at Nsambya Makindye division Kampala district. This school is found along Nsambya, Kevina road. It serves a community of both low-income earners and those below the poverty line. The pupils that receive the school services, many can't afford a school uniform and daily scholastic material. Due to the poor hygiene conditions like hand washing facilities, poor infrastructure like an uncemented classroom, open window, poor staff housing that cause a health threat to the staff and pupils to bring about a need for action research.

Being that the school is still underdeveloped, there are so many issues surrounding the school like ongoing construction during study hours that leading to noise and sound pollution, having seen some of the health issues that act as an eye-opener to anyone passing by the school leads to drawing of attention. No record for health-promoting activity has been documented or practically been evidenced as suggested by the students.

The school has a population of 652 both male and female pupils, the school runs from primary one to primary seven. Their is no great performance not for the last 4 years of primary leaving exams. The school has two pit latrines one for the staff and the other for the pupils which are separated into boys' and girls' sides which indicates good practice.

METHODOLOGY

Community Entry

A pre-visit was made to the school, while there, the researcher was introduced to the headteacher and administrators for self-introduction, and the purpose of the visit was then explained of expected roles and expectations from the school staff and pupils. The researcher answered the questions asked and thereafter be sought administrative support.

An introductory letter was obtained from Uganda martyrs university that was used to authorize the permission to carry out action research in the given community.

The researcher chose a group of five pupils to work with closely on voluntary grounds and included them on the research team, these helped in organizing training and materials for use.

Problem identification (community diagnosis)

During community diagnosis, a dedicated committee and working group were set up to manage

and coordinate the process. The committee included administrative staff, class teachers, pupils' representatives, and school support staff, representatives

Procedures of data collection

As for the community data, it was collected by conducting surveys through transect walks, face-to-face interviews through meetings, and focus group discussions.

The transect walk was conducted by the research team and community members. The information collected during the walk was used to draw a map based on the discussions held amongst the participants and photographs taken.

The information collected during the transect walk was used to draw a diagram map and provides a basis for discussion amongst participants

Face-to-face interviews through Community meetings were held with the committee member than with the entire community through pupils' assemblies.

Focused group discussion ensured the proper function of the project through monitoring the activities being implemented.

Data collection tools

The data collection tools included an observation checklist, cameras for photovoice, and a group discussion guide

Collected data was then analyzed and interpreted by the researcher through, trends and projections are useful for monitoring changes over some time for future planning

The production of the community diagnosis report was made at the end, efforts were put onto communication to ensure that targeted actions are taken.

The report was disseminated through presentations at meetings of the committee members and to the university.

Problem Prioritization

A Prioritization Matrix was used to come up with the high standing problem as described below. A matrix is one of the more commonly used tools for prioritization and is ideal when health challenges in a school are restricted to focusing only on one priority health challenge, they provide a visual method for prioritizing and account for criteria with varying degrees of importance. The Matrix was used to rank problems or issues generated through brainstorming, using weighted criteria that are important to the school

The following steps were applied in a prioritization matrix to prioritize the found health challenges.

- A matrix was created and a list of all health challenges vertically down on the y-axis (vertical axis) of the matrix and all the rating horizontally across the x-axis of the matrix so that each row is represented by a health challenge and each column is represented by a rating, an additional column for the priority score will be added.
- Rate against specified challenge, fill in cells of the matrix by rating each health challenge against its importance which will be established by the team before beginning the process. The rating scale will include the following:

3 = Frequency

2 = Important

1 = feasibility

- Calculate priority scores - Once the cells of the matrix have been filled, calculate the final priority score for each health problem by adding the scores across the row.
- Assign ranks to the health problems with the highest priority score receiving a rank of '1.

Problem analysis

Problem analysis is the phase in which the negative aspects of a given situation are identified, establishing the cause and effect relationship between the observed problems.

During problem analysis, a combination of analysis methods was used to come up with the root cause of the problems this included Brian storming and problem tree

The problem tree analysis belongs to the family of participatory planning techniques, in which all parties involved identify and analyze the needs together, creating ownership and commitment among the involved parties.

According to Campbell *et al.,* (2016) Applying the problem tree method supports the identification of the main problems along with their root causes and effects. This method, therefore, showed the staff and pupils how to formulate clear and manageable solutions to improve their health challenges. The final combined solution and problem trees were clear and easy to interpret Solutions associated with a specific problem factor (Robinson *et al.,* 2005)

Root cause analysis

Root cause analysis was done following the step-by-step procedure of tree analysis

1. Identified the existing problems within the school community through community diagnosis.

2. Defined the core problem.

3. Formulated the cause of the core problem and Considered that the problems identified in step 1 can also be the cause of the core problem.

4. Formulated the effects (consequences) of the core problem Consider that the problems identified in step 1 can also be effects of the core problem.

5. Drew a diagram (problem tree) that represents cause-effect relationships (problem hierarchy) The focal problem is placed in the Centre of the diagram, forming the trunk of the tree, Causes were placed below and effects above, in sub-dividing roots and branches.

Quality control

Validity

Validity refers to the essential truthfulness of a piece of data. Democratic validity was considered through Having multiple perspectives of all of the staff and pupils involved in the study to be accurately represented and the study was conducted dependably and competently to ensure Process validity.

Questionnaire and group discussion guidelines were carefully designed to have them easily and clearly understood by both the interviewer and the respondents. In so doing, we were able to capture only the intended information.

Participating key informants were carefully selected and guided to be able to collect the right data from the targeted sources, and be able to properly document all the collected data

Reliability

Reliability relates to researchers' claims regarding the accuracy of their data. It was achieved by pretesting the research tools, questionnaire, and checklist in similar settings and comparing the results before the tool was eventually used to collect data in the real research area

Ethical consideration

Ethical approval for this intervention was received from Uganda Martyr's University and Research ethics were fully implemented throughout the study, participation in the research was fully voluntarily

The headteacher, teachers, and pupils 'committees, and school authorities were consulted, and the principles guiding the work were accepted in advance by all.

Confidentiality was maintained throughout the process of action research and it was the researcher's responsibility.

2 Limitations, and delimitation:

Poor response from participants because of the bias from school staff. The researcher was able to clearly explain the importance of action research.

Failure to implement and sustain some of the suggested solutions due to attitude of staff, pupil benefits of proper hand hygiene was explained to ensure client satisfaction.

The geographical limitations. The staff ensured to identify a convenient room for discussions and an appropriate channel for feedback was used.

The latest literature was not reviewed properly because it required a lot of time yet there was a limited time frame.

Reflection

Questions were about health promotion values, health, and physical activities, pupil's welfare that influence health as well as aspects that needed improvement. It also involved thinking about the environmental, health, physical, organizational and ethical factors that impact existing or new ways of doing things.

The positive areas were recognized along with an honest assessment of areas that needed to be developed. The reflective process was led through learning from staff and pupils, by observing, talking to them, and participating during the implementation of activities.

RESULTS FROM COMMUNITY DIAGNOSIS

3 Results from community diagnosis.

The established research question was used as a guide for the collection of data putting in mind the study objectives. At the time of community diagnosis, different meetings were held with the members of the school community which included the pupils in different groups (class leaders for the different classes and prefects), the administration (head/deputy headteacher and bursar), teachers, and support staffs (cooks). The support staff did not consent to take a picture during the meeting.

The findings of the community diagnosis presented below were collected using the different

data collection methods that include focused group discussions, transect walks, key informants' interviews, and face-to-face interviews. The results are presented in Tables, bar, pie charts, narrative form, and pictorial taken during the process following the research question as per the specific objectives.

School Community population

St. Paul primary school has a total population of 670 that include pupils, teachers, and support staff, out of the total population, 652(97.3%)are pupils (376 girls and 275 boys as displayed on the notice board), 15 (2.2%) are teachers and 3 (0.5%) are support staff. The majority of the respondent were pupils.

3.1 Problem identification (community diagnosis)

As discussed earlier in the previous section on school community population, the community was broken down into three groups pupils, teachers, and support staff, a well-planned and scheduled visits were made to all groups, meeting with teachers, meeting with support staff, due to a large number of pupils, class meetings from primary one to seven were held to Identify the different problems affecting each class.

The entire school was covered through a transact walk led by the deputy headteacher, health prefect, and researcher. During the movement, the following were noticed and documented, a clean compound with gazed areas for proper rubbish collection and clean tap water. Two toilets were seen one for the teacher and the other one pupil who noticed has a health challenge to have a single toilet.

During the focus group discussion a list of health problems which the members of the group came up as they were discussing and these included lack of sanitary pads for the girls which makes them uncomfortable at school, hunger at school since no meals are provided at school, missing class, over falling sick and lack of medical care at school, Pupils are sent to a nearby hospital, too much housework at home, poor hygiene of some members of the community and even some are forced to take a bath at school and last but not the least lack of support by the parents to provide the basic needs. All these impacts on the performance of the pupils in school and need to be addressed.

During these community meetings, a clear explanation of the purpose of action research was shared with the members. Pupils, teachers, and support staff were tasked in their respective meetings to mention health challenges affecting their community, and Tabulated below are some of the health challenges mentioned in the different meetings held at all levels.

Table 1:A table of identified health challenges at St. Paul primary school community.

3.2 Problem prioritization

All the health challenges identified after from the school community were then subjected to independent prioritization using the developed prioritization matrix which was clearly explained to the school community using the prioritization matrix guided by the researcher.

The health challenges were prioritized according to feasibility, importance, and frequency. All members of the school community had an opportunity to choose for any category then the weight was applied as shown in the table.

All the collected data were analyzed by the researcher and the key problems discovered that were affecting the community, included poor hand hygiene which was the biggest public health concern which impacted much on the health of the pupils and contributed to the increased frequency in the sickness of pupils and leading to absenteeism from school, poor hand hygiene may lead to diarrhea diseases that lead to poor turn up at school as cited by some of the participants.

Table 2: results for prioritization of health problems from pupils at St. Paul primary school following the important key of frequency, importance and feasibility.

Basing on the priority score as the ranking system matrix the school community managed to come up with three priority problems, these were lack of hand washing water and soap with the highest score followed by lack of sanitary towels for girls, and third was lack of safe drinking water in consideration of all the result obtained from the specific groups. As a requirement for action research, the health problem with the highest score was considered for an intervention using the available resources.

Problem analysis:

A problem tree was used to determine the root cause and effects of the problem, the hand hygiene problem incorporated into the problem tree, the members of the community started brainstorming

Table 1. A table of identified health challenges at St. Paul primary school community.

Pupils from primary one to seven	Teachers	Support staff	Key informant interview
Lack of hand washing water and soap	lack of sanitary pads for girls	Dirty toilets	Lack of hand washing water and soap
Dirty toilets and compound	poor staff accommodation	Dusty class room and leaking room	Dirty toilets and compound
Dusty class room and leaking room	Lack of hand washing water and soap		Dusty class room and leaking room
Lack of safe drinking water	Dirty toilets and compound		lack of sanitary pads for girls
Lack of enough balanced diet	Dusty class room and leaking room		
lack of sanitary pads for girls			

Figure 1. Problem identification Photo

Table 2. results for prioritization of health problems from pupils at St. Paul primary school following the important key of frequency, importance and feasibility

Health problem identified	Frequent X weight	Important X weight	FeasibilityX weight	priority scores
Lack of hand washing water and soap	98x 3=294	64x 2=128	20x1 =20	442
Dirty toilets and compound	59x3=177	43x2=86	15x1=15	278
Dusty class room and leaking room	45x3=135	34x2=68	34x1=34	237
Lack of safe drinking water	67x3=201	47x2=94	14x1=14	309
Lack of enough balanced diet	10x3=30	27x2=54	12x1=12	96
Cracking walls for primary one and three	78x3=234	16x2=32	28x1=28	294
lack of sanitary pads for girls	88x3=264	32x2=64	38x1=38	366

Table 3. 3: Results for prioritization of health problems from Teachers at St. Paul primary school following the important key of frequency, importance and feasibility

Health problem identified	Frequent X weight	Important X weight	FeasibilityX weight	priority scores
lack of sanitary pads for girls	4x3=12	5x2=10	6x1=6	28
poor staff accommodation	2x3=6	2x2=4	2x1=2	12
Lack of hand washing water and soap	6x3=18	2x2=4	7x1=7	29
Dirty toilets and compound	1x3=3	2x2=4	0x1=0	7
Dusty class room and leaking room	1x3=3	4x2=8	0x1=0	11

Table 4. 4: Results for prioritization of health problems from Support staff at St. Paul primary school following the important key of frequency, importance and feasibility

Health problem identified	Frequent X weight	Important X weight	FeasibilityX weight	priority scores
Dirty toilets	2x3=6	3x2=6	1x1=1	13
Dusty class room and leaking room	1x3=3	0x2=0	2x1=2	5

Table 5. 5: Results for prioritization of health problems from key informants at St. Paul primary school following the important key of frequency, importance and feasibility

Health problem identified	Frequent X weight	Important X weight	FeasibilityX weight	priority scores
Lack of hand washing water and soap	2x3=6	3x2=6	4x1=4	16
Dirty toilets and compound	1x3=3	2x2=4	0x1=0	7
Dusty class room and leaking room	2x3=6	1x2=2	2x1=2	10
lack of sanitary pads for girls	2x3=6	1x2=2	1x1=1	9

the possible causes. This was documented on the diagram. The causes suggested by the community as shown below.

Looking at the cause and effect of the identified problem through the root cause analysis using brainstorming and problem tree, the community discovered that there was a need for quick intervention to address the big burden. This was achieved through collaboration with the entire school community that included the teachers, support staff, and pupils.

THE INTERVENTION OR INNOVATION

Improvement of objectives

To improve hand hygiene at St. Paul primary school through empowering the community with knowledge and skills in hand washing to promote good hygiene.

Theory of change

UNICEF 2014, explained the theory of change as activities undertaken to produce a series of results that contribute to the achievement of final intended impacts.

The health belief model was used to conduct the educational sessions. The components of the Health belief model, cues to action, and self-efficacy were used as a guideline in each health talk/ education.

3.3 Plan of action:

During this intervention, the plan of action detailed the strategies and activities which were aiming at solving and addressing the problem of poor hand hygiene at St. Paul primary school. This plan involved meeting with the school community and selecting a research committee to work with through the process. This team was to take the lead in all actions that were agreed on to promote good hand hygiene practices.

Meetings were held with community members through which an action plan was formulated to highlight the interventions and this was guided by the health belief model for the key intervention strategies which were cantered on change of the community members attitude towards personal hygiene. The community members came up with the following strategic plan.

Increasing awareness through sensitization leading to capacity building of community members on proper hand hygiene.

Health education for the pupils will be done verbally and also by the use of information, education, and communication material. These will involve drafting flip charts and posters illustrating good hand hygiene practices in all classes and other strategic areas like latrines and assembly points that remind the pupils of the importance of proper 'hand hygiene. These materials will contain key messages like wash hands with soap after toilet and before eating, torching the soil, dirty water, handshaking, body skin, after coughing and tummy, and cut nails weekly.

The research team also health educated the teachers and non-teaching staff on the benefits of good hand hygiene in relationship to performance because poor hand hygiene leads to the spread of disease and ill health leads to absenteeism of the pupils due to sickness which directly affects the performance of the pupils.

The research team was aware that the teachers had direct influence over the children and winning their support was very crucial through the sensitization process. Integrating health talks in the school daily routines in classes and on the assemblies will create ownership of the program and its sustainability.

Empowering the community for behavior change

Health teams were formulated to facilitate the sustainability of health activities, these community members were to lead the rest of the group in health promotion programs at school. The formulated health research team will be trained in skills of hand hygiene, these teams will pass on the skills to the rest of the school community.

Peer educators headed by the health perfect will meet on regular basis to discussion on how to sensitize and teach good hand hygiene practices to the community members in the different classes to promote behavior change hence building community capacity to make informed decision on matters concerning their hand hygiene and the surrounding environment through active participation Committee member will ensure the provision of clean water, soap, clean hand washing centers, regular update of reminder posters all over the school, and clean toilets and tissue papers, this will be done on daily basis and monthly like reminder posters.

Advocating for community full participation and involvement

The collaborative effort will be emphasized to tackle the different activities, community participa-

Table 6. Theory ofchange

Concepts of Health Belief Model	Intervention
Perceived Susceptibility One's chances of exposing him/her self to dirty environment.	• The community at risk was defined and Personalized risk based on each person's behaviors like personal habits such as hand washing habits were explored. • Perceived susceptibility was heightened by showing pupils and teachers pictures of children undergoing disease due poor hand hygiene practices. • statistics of absenteeism due to hand related diseases in school was presented. • The community was explained to good hand washing only at school does not guarantee immunity from poor hand hygiene.
Perceived Severity Looked at how serious is poor	• Pupils were asked to reflect on the problem of poor hand washing and the issue associated with it

Table 7. Theory of change

hand washing and its impact on personal health.	• Who is affected and how poor hand washing can be a big problem to the community if not handled well?
Perceived Benefits of proper hand hygiene were shared.	• Advantage of proper hand washing in preventing infectious diseases was clarified and described. • Difference between good hand hygiene and poor hand hygiene was discussed • It was emphasized that proper hand washing should not stop only at school but also carried back home because its important to ensure that disease avoided at all times. • Action to be taken to ensure good hand washing was defined, when to wash hands before and after what, where to get safe water and soap to use during hand washing, how to teach other on the steps of hand washing was shared
Perceived Barriers	• Identified the barriers that may after them during the intervention steps and these were reduced through reassurance, incentives and assistance • In order to address lack of knowledge about availability of hand washing Centre equipped with clean water and soap as a perceived barrier face – to – face instruction was conducted and children were showed how to wash the hand using the available resources. • To eliminate financial barriers the researcher and community teams used the available resources to come up with the intervention on better hand washing like old jerrycans to hold water and strips to pin the instruction (posters) on the ways to show pupils wat to be done during hand washing.
Cues to Action	

Table 8. Theory of change

Includes concepts of cue or trigger to action	• All the information about the washing hands before and after touching dirty environment was provided to the community in the forms of verbal and written reminders. • Considering all other components of the health belief model special cues to action was provided to increase their awareness • They were informed of the result on improved compliance with proper hand washing as good health behavior.
Self-Efficacy looks at conviction that one can successfully execute the health behavior required to produce the outcome	• After each educational session they were asked to express their feeling about the confidence they have in their ability to perform proper hand washing. • Based on their confidence in proper hand hygiene training and guidance was provided.

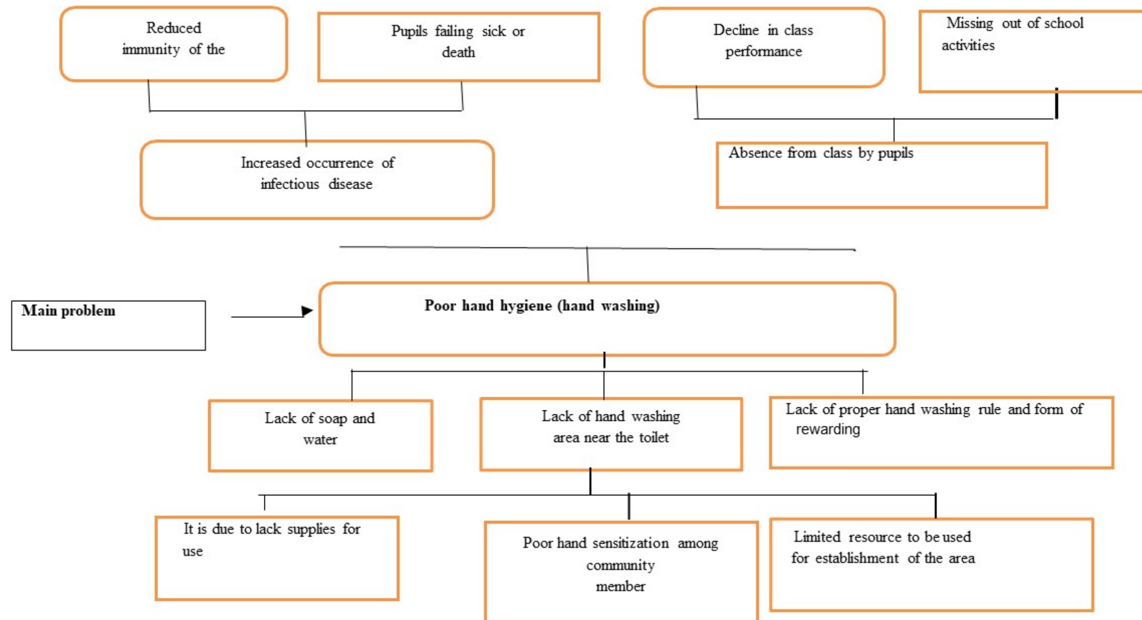

Figure 2. Problem analysis tree with cause and effect

tion and involvement will be one of the strategies used.

Locally available resources will be used to implement the different activities with continuous engagement of the different stakeholders throughout the different phases, this will be helped in the sustainability of the project because the resources were readily available to the community and not being utilized.

The time frame of the implementation of interventions/innovation

Action plan showing the time frame and the implementation to improve on poor hand hygiene.

Monitor and evaluation

This was done by the researcher and research team which was done following weekly visits to the school to check on the progress of the activities being implemented. Performance evaluation meetings with the school headteacher and health team leaders to evaluate the activities.

Community-based monitoring and review meetings:

Community-based monitoring is an integral part of the project, the community members will gather and have a meeting headed by the community leadership team on how far the project has achieved in regards to improvement of hand hygiene, the meeting which will focus on the progress of the project against indicators, success, lessons, and failures. These meetings will also be attended by all stakeholders in the project to review the project progress and suggest recommendations on the best ways to proceed.

Project evaluations:

The health lead team and the researcher propose to carry out two evaluation exercises to measure progress against project proposed goal and objectives, challenges and offer recommendations to the community

Reliability and validity

Reliability

This was observed through involving the community members in the activities that were agreed on during the meeting, the proceedings were documented and kept for future reference. It was also ensured by doing periodic monitoring by making visits to the community during the implementation process to ensure that the actual reflection of the action research report is really what is on the ground.

Validity

Different research methods were used to ensure the essential truthfulness of the research work was obtained from the ground. Triangulation was used

Table 9. The time frame and the implementation to improve on poor hand hygiene.

Activity	Time frame WeeklyMonthly	Person responsible	Indicator	Out come
Formation of the health lead team	Once	Researcher and health prefect	Health team	For implementation of the project
Health education of the health lead team	Twice	Researcher	Number of health talks conducted	Leaders acquire knowledge on hand hygiene
Health education of the Community	Twice	Team leaders	Health talks held	Pupils acquire knowledge on hand hygiene
Drafting of IEC materials	Twice	Researcher and selected committee	Posters Flip charts	Procedure to followed
Disseminating to of the materials the Community	Once	Team leaders	Posters on the class walls, Filled flip charts	Acting has reminders

Table 10. The time frame and the implementation to improve on poor hand hygiene.

Sensitizing the community on good hand hygiene practices	Twice	Researcher and team members	Change in community member conducting proper hand washing	Reducing on the poor practices and myths in the community
Demonstration on proper hand washing step by step	Daily For one week	Team members and researchers	Establishment of step by step procedure on to the washing centers	Acquire the skill of proper hand washing
Demonstration on how to use the already available resource to have a hand washing Centre.	Twice	Researcher	Hand washing Centre	Presence of hand washing Centre
Providing feed back to the community about success, achievements and failures	Once	Researcher and team leader	Reports on the achievements and failure	Find areas for improvement and sustainability
Monitoring and evaluation	Once	Team leaders	Reports	Find areas for improvement and sustainability

whereby different research methods were used and also going back to the community to confirm the results in the final action research report.

Lessons learnt/self-evaluation

1. Community participation has been key in the drafting of the designs of the intervention, having realized that individual interventions have resulted in better results. The variation in team members' understanding of the community is an opportunity to explore the variety of innovations that can be applied to solve a community problem.

2. Integration of health promotion programs in the existing school programs cuts the cost and the time which may impede health promotion activities in the school. For better knowledge and practice, the health education intervention program was very much fruitful to the growing pupils for their better health.

IMPLEMENTATION OF ACTION PLAN

3.4 Summary of actions carried out and outputs

Action carried out and output

COMMUNICATION STRATEGY FOR THE IMPLEMENTATION

The communication strategy was developed to address the communication needs of the study and involves the following: Rationale, needs and priorities, Aims and objectives, Method and implementation, Evaluation and Feedback, and future.

The rationale of the communication plan

There is the need to change the health behavior and promote healthy habits of pupils. This will improve the well-being of the community members and provide a healthy supportive environment.

Aim

• To effectively promote prevention habits towards poor hand hygiene to the school community, motivating and empowering community members to take responsibility for managing their hand hygiene more sustainably.

Objectives

• To provide information about proper hand hygiene St. Paul primary school community members

• To increase community participation in the implementation of proper hand hygiene

• To develop targeted communication campaigns to inform and motivate stakeholders

• To develop our understanding of key stakeholders, partners, audiences, and the best methods of how to engage them.

3.5 Theoretical model for the strategy

The researcher and the community used the health belief model as a guide to design messages that will prompt behavioral change. The health belief model is linked to a person, behavior and the environment. The messages will communicate causes of poor hand hygiene, the impact on human health and the effect of the surrounding environment, and how to improve poor hand hygiene. The community members should see that adopting good behavioral practices is likely to prevent or reduce the risk at an acceptable cost with few barriers. The knowledge and skills shared will make the pupils feel competent to change the behavior (self-efficacy). The triggers of this behavior change (clue) will include repeated messages delivered to the community members through the tools adopted by the community.

Audience

• Primary audience: St. Paul primary school community members.

• Secondary audience: Parents and local leaders

• Tertiary audiences: Ministry of health, and ministry of education and sports.

SWOT Analysis

Our Strength: The community is well organized, existing information, there is evidence of the existing knowledge gaps, and there was support from the local leader, the community is willing to accept the information and the availability of manilas and flip charts for the community mobilization notices.

Our Weakness: Monetary constraints and Limited time for health education.

Opportunities: Committee, community, and teacher meetings and Presence of the health committee in school.

Threats: Resistance from some community members and tight schedule at school

Communication Tools/ methods: Health education, demonstrations, role plays, drama post, Community meetings, Signage in the compound and hand washing centers, and Focus groups.

Tasks

1. Mobilization for training and health education
2. Hold stakeholders meeting
3. Scheduling of activities

Assigning roles to respective stakeholders

Resources Needed: Manpower**,** Financial resources**,** Stationary (pens, markers, manila, papers, counter books)**,** IEC Materials, **and** Health lead team to receive complaints.

Feedback: Through Assemblies and Health promotion teams to receive complaints**.**

Key/take home Messages

Health is created and lived by people within the setting of their everyday life, where they learn, work, play, and love (Ottawa charter).

So that community members understand and are engaged in proper hand hygiene practices, we must provide clear, concise, and easy to understand messages to increase awareness of hand hygiene, maintain and grow participation, and promote behavior change in low or non-participation groups.

Key messaging can be broken down into the following areas include Providing feedback on the

Table 11. Summary of actions carried out and outputs:

INPUT	OUT PUT
I. Participatory Health education on proper hand washing	
Health education on proper hand washing to teacher, Non- teaching staff and chosen team leader • Write up were made on proper hand washing using Manila papers and markers that were pinned on class rooms walls. • Team heads mobilized all the team member and madam Jane made invitation for the class teachers in one of the class. • Discussions were guided based on proper hand washing practices and poor hand washing practices. On proper hand washing practice, we looked at the benefits while on the poor hand washing skills we focused on the impact on health of pupils. • Every member was involved in coming up with key messages on impact of poor hand washing was recorded on Manila papers.	• knowledge and skills on how to improve hand washing efficiently using available local resources was acquired. • The school teachers, non- teaching staff,team leaders and members acquired skills on how to draft key messages about proper hand washing that will be conducting the sensitization and awareness campaigns.
30-minute School health talk at assemblies every Monday of the week. • Assemblies make the biggest gathering in a school and this was the best opportunities to share knowledge on proper hand washing and impact of poor hand washing skills.	• The entire school population excluding the non- teaching staff received knowledge and skill on hand hygiene and proper hand washing. • Selected committee team will always speak head discussion on proper hand

Table 12. Participatory Health education on proper hand washing

• The researcher, selected committee team and Teacher Jane using our already written manila posters displayed to the pupils and teachers the ways of proper hand washing and effect of poor hand washing skills. • Our task was to educate the school pupils on good hand washing technique and benefits of sustaining good hand washing practices. • This activity was done weekly at every being of the week for one month.	washing and poor hand hygiene skills to the school community.
II. Community sensitization and awareness campaigns	
Creating and obtaining posters to be displayed talking about proper hand washing skills • These posters were created and obtained by selected teams with the help of the researcher and displayed and strategic positions designed with Specific key messages on proper hand washing. • The information was displayed on posters in and outof class room, eating grounds(kitchen)and toilets. • A committee was formed and comprised of the health prefect, health teacher and all class monitors. The committee had the responsibility of ensuring the awareness campaigns take place at least twice a month.	• Posters acted as information reminders to community members of the importance of proper hand washing techniques and skills. • Improved hand washing skills through copying from the posters.
III. Improving on availability of hand washing materials in order to ensure effective hand hygiene	
The school had afew of resources not use to due to limited knowledge availability of clean water but no hand washing station, used the available old jerrycan	Soap, hand washing jerrycans with stands and water collection container were provided.

Table 13. Participatory Health education on proper hand washing

and developed a hand washing Centre. however, the pupils were tasked to bring small pieces of soap with them from, this was only applicable to primary five to seven pupils complied. the school management promised to include it in its coming financial year.

successes and achievements of residents and Information on proper hand hygiene. Poor hygiene predisposes us to diseases while the practice of proper hand hygiene practices which

Include hand washing after visiting the latrines and before eating anything.

Branding and Identity

We branded ourselves with St. Paul's clean hands. This will utilize photos of pupils carrying out handwashing activities and posters with simple, positive messages.

Sustainability plan

The community and the research team employed one of the health promotion strategies from the Ottawa charter for health promotion of enabling: enabling all people to achieve their full health potential through providing a supportive environment, access to information, life skills, and opportunities to make healthy choices. To maintain the implementation strategies, the community leadership team with the help of the researcher took the initiative to develop the skills of the community members through health education and sharing of the leadership roles among the community members to create ownership of the project.

The community members also thought of the use of periodic continuous sensitization and awareness campaigns in the community about proper hand hygiene and its effect on health. This will continue providing information to the residents hence continuation with the project even after the researcher has pulled out of the community.

They also thought of using and providing feedback to the community members about the success and achievement regarding improvement of hand hygiene, this acts as motivation.

Risks anticipated included: Misinterpretation or failure to understand the messages, Failure of pupils to turn up for health education sessions due to tight schedule, and Failure of the message to reach the target population.

Plan for Measurement of the communication strategy

Monitoring will be based on Objectively Verifiable Indicators (OVIs) and Means of Verification (MOV) as indicated in the table below.

3.6 Plan for Measurement of the communication strategy Reflection of the Interventions

The action research exercise was a great learning experience for the researcher and the community members. When there is awareness about a particular problem, insight is created about that problem and how it influences health. This made the community members adopt possible behavioral changes and practices. Community members learned that through involvement and participation, some issues could be solved easily as seen in the hand washing.

The health education session was beneficial to the community where they learned about the impacts of waste on their health and how to improve waste management. They also learned that health issues can be solved by themselves using locally available resources such as old sacs as storage for wastes.

The implementation was a practical experience, community members had the sense of ownership of the activities since everyone's input was valued and because they prioritized the problem themselves not just one. FullPractical participation of the community members gave the leadership team to discover feasible and cost-effective ways of designing the health messages and displaying them in the most convenient places. Time was always a challenge to the implementation of the interventions since the interventions were done alongside the school calendar.

The implementation of the interventions resulted in the acquisition of skills among the community members: mobilization skills, communication skills, planning skills, monitoring and evaluation skills, and designing of key health promotion messages which are crucial for the empowerment of the community.

Table 14. Monitoring will be based on ObjectivelyVerifiable Indicators (OVIs) and Means of Verification (MOV).

Activity	Output indicator	Means of verification	Assumptions
Mobilization for trainings and health education for teachers	Number of trainings and health education conducted	Attendance list	All activities were conducted,
Health education for pupils on assemblies	Number of health talks conducted on the assemblies.	Health education on the time table	Assemblies convene on daily basis
Drafting of health messages	Number of health messages drafted	Messages available on the compound	Availability of materials to draft the messages
Health education through drama	Number of dram show conducted	Drama scripts and attendance	Pupils attend in good numbers.

The key to the success of health promotion in any setting involves the availability of information, development of personal skills, developing an enabling environment that enhances health promotion activities.

Lessons learned and way forward

Learning is a continuous process, and we keep advancing with Every interaction with communities that can help shape and inform the implementation strategies that are feasible within a particular community.

• During the implantation of the health promotion program, the following were learning experiences as listed down.

• limited time for the implementation of the health promotion programs hence more time should be allocated to health promotion programs to promote hand hygiene.

• Parents' input is important since their participation is instrumental in supporting the activities in school and the requirements that may be needed by the child to promote hand hygiene.

• Health education should also be part of the curriculum because it influences health behavior and promotes good health which is a key to the success of the pupils in academics and other extracurricular activities like sports.

An enabling environment is a key to the success of health promotion in any setting which involves sharing of information, development of personal skills, developing an enabling environment that enhances health promotion activities. These are key action areas that are paramount to the success and maintaining health promotion in the school. Health promotion activities at schools should always involve headteachers and non-teaching staff members to avoid conflicting with health promotion activities

DISCUSSION:

4 Discussion of the results from the implementation section

A health community is achieved through the implantation of health-promoting programs like hand hygiene, during this intervention community members received knowledge and skills that will be used to sustain their problems. With constructive guidance, community members can easily identify and acquire the necessary support within and even beyond their community.

From these interventions, the research team and the community noted that pupils appreciate more when their teachers or fellow pupils demonstrate certain intervention, as this was observed especially during the hand washing demonstrations where even the teachers actively participated and demonstrate how thorough cleaning had to be done. It was also noted that lack of clean water and soap used for cleaning can contribute to poor hand hygiene but the introduction of the reward culture by the head teacher to the best pupil with proper hand hygiene practice yielded more results.

Most of the members whose views were borrowed by the group in addressing the community problem were much more willing to always contribute to the process at all times. The school administration has a pivotal role in promoting hand hygiene in the school and any other public health intervention should always put into consideration their role because they can either sabotage or promote the program.

Community involvement through engaging the parents in school activities is crucial for health promotion in schools since it creates a partnership that results in sharing and maximizing resources. This enables the parents to respond more effectively to the health needs of the pupils. The parents have a role in keeping their children in good personal hygiene like proper hand washing.

The success of a public health intervention in school requires collective efforts from all parties these include the parents and the community working together to promote the health and well being of the pupils.

Interpretation of outputs

Knowledge and skills on how to improve hand washing efficiently using available local resources were shared with teachers, parents' pupils and non-teaching staff**.** The community members attained knowledge about proper hand washing practices, effects of dirty hands on their health and the environment, this was evident when a random sample of community members was asked questions regarding proper waste management, and they could easily answer all the questions being asked.

The community leadership team also attained knowledge on how to design and draft key, simple and efficient messages about proper hand hygiene through hand washing and maintaining fingernails short to the rest of the community members as part of the sustainability plan.

The health education messages on proper hand hygiene like hand washing, cutting long nails short that were passed on by teachers, and the health promotion team were also given to stakeholders which were beneficial. Since they acquired skills that enabled them to design health message that was easily understood by the community. The community members who engaged in health education on the assemblies acquired communication skills that cannot be only applied in the school but also can be applied at their homes.

These messages were disseminated in form of posters, Flipcharts, drama, and songs these were analyzed based on their accessibility to the community members and the community members were positive that the messages are available at all important places in the school leading to are healthy communicating environment.

5 Ensuring community participation and involvement

The formation of a health promotion steering committee mainly composed of the community members facilitated the participation and involvement of the community identifying, prioritizing, and finding the solutions to their problems. And assuming leadership responsibilities to enhance the intervention agreed on by the community members.

The roles of the health promotion team were evident and their impact was felt by the community, they identified places in the school that needed hand washing stations and advocated for the resources and materials. They spearheaded the health education campaigns in the school and organized the drama activities. They mobilized the pupils for hand hygiene activities like hand washing. They monitored all activities that were put in place to promote the health of the pupils in the school. They assumed leadership roles that transformed the community into a health-promoting environment.

The hygiene competitions increased community involvement and participation. The pupil was organized and motivated in their respective houses by the marks which they strived to achieve through the daily cleaning. The spirit of togetherness portrayed by the house members facilitated the behavior change with minimal effort.

6 Provision of materials for hand hygiene practices

The combined effort of teachers and the pupils ensured that materials that were needed for the hand washing were in place. The materials were very important in transforming the hand washing practices of the school. No external support was sought to provide the materials and this showed the degree of community involvement portrayed and how

committed they are to achieve better health in the community. The analysis of this output was based on whether the materials needed to perform hand washing were available and the community members managed to discover that all the necessary material was in place but not in use.

Sustainability plan

The information gathered throughout the intervention process was captured by community members, and they suggested to use as a continuous process to improving hand washing at school, this was to be effective through the establishment of a sustainability plan by the health promotion team with the consultations from the community members these included the following:

- Allocating funds from the school budget that will be used to buy and maintain materials like soap, water at school. This suggestion was seconded by the headteacher and the health teacher. It was agreed upon that the health-promoting programs be integrated into the school program to maintain the spirit heath behavior of healthy people.
- Health education was incorporated on the school year plan, health talks would include on the class timetable and the health teacher with the established health team would be responsible for conducting every morning at assembly points and Wednesdays in different classes. It was agreed upon by the community that the health promotion team would continue having monthly meetings to review the progress of the interventions and make necessary changes.
- It was agreed upon by the community members that parents should at least once in the term have a meeting at school where they can discuss the matters concerning hygiene practices of their children at school and this would strengthen the partnership'

7 Conclusion

When the community is empowered with knowledge and skills and allowed to solve their problems, a spirit of ownership is developed through their full participation and involvement. Activities will be done willingly without any external force through team lead supervision.

A school is faced with several health challenges but it's through community participation to identify the most pressing problem among the many, so school community members should be allowed to prioritize their problems not just thinking.

Therefore, for all health promotion programs to be successful in a school, the school community members should be involved at every stage of planning, prioritization, and implementation. This will aid in the sustainability of the project after the scheduled time frame for implementation is done. Behavioral change is dynamic and it's a gradual process hence time is required for individuals to adapt to the new desired health behaviors

Recommendations :

Listed below can be considered for proper sustainability and improving health-promoting activities

The school should have a well-documented standard operating procedure on hand washing which can be used to integrate other aspects like health education into the school curriculum.

There is no way the school can change the health of the pupil without the involvement of the parents so there is a need to strengthen communication between the school and parents. This can be done by convening regular meetings with the parents to discuss key issues in the school and hygiene and sanitation should be on the agenda.

The educative drama portrayed by the selected health team should be taken to other classes to spread the information on proper hand hygiene.

If resources allow the posters and the flip chart messages should be put in durable materials to make them durable

Self-evaluation

Action research is a better way to solve issues regarding health promotion programs in a school setting because it involves all the stakeholders from the beginning to the end, this creates a sense of ownership in the community members.

This action research tackled almost all the Ottawa charter action areas;

- building a public policy: the community advocated for policy on health promotion activities that could incorporate health education in the school curriculum.
- Creating a supportive environment: that would enhance the activities of hand hygiene in the school by providing the necessary materials that help in maintaining the hygiene at school
- Strengthening community action: through ensuring full community participation that included

all teachers, administrators, pupils, and other non-teaching staff.

• Developing personal skills. The health education conducted helped in developing knowledge and skill to facilitate adoption and coping up with desirable health-promoting behavior

The research project on hand hygiene majoring on hand washing carried out at St. Paul primary school was successful, this success was based on proper problem identification, prioritization, and establishing the best intervention through the involvement of the entire school community member but the project needed more time to measure the impact however the outcomes where promising.

7.1 Abbreviation

FGD: Focused Group Discussion IEC : information education materials

MOE: Ministry of Educations and Sports WHO: World Health Organization

CDC: Centre for disease control and prevention WASH: Water, Sanitation and Hygiene NGO: Non-Government Organisation

WinS: Water, Sanitation and Hygiene in Schools UMU: Uganda Martyrs University

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