A Comparative Analysis of Knowledge, Sources of Information and Hand Hygiene Practice among Students in Public and Private Secondary Schools in Lagos State, Nigeria

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Abstract

Early childhood and teenage years of a human existence represent the most opportune period to inculcate most enduring life skills, including hand washing skills. For most individuals in this age, the school represents the dominant social system where beneficiaries spend a huge proportion of their time in school. This study therefore investigated how hand washing facilities available in schools and knowledge of this facilities influence actual practices of hand hygiene (HH) among secondary school students in Lagos State, Nigeria. Researchers were interested in drawing responses that would lead to providing answers to four key objectives of the study: availability of WASH facilities in schools, knowledge of participants, participants' sources of information, and actual practices of hand washing. The qualitative research design was adopted with a total of 10 participants each drawn from one government and one privately owned secondary school in Lagos State cutting across junior and senior classes for focus group sessions. The Protection motivation theory was adopted to understand the role of exposure to message as well as knowledge in imbibing this healthful practice. Findings show that most students generally feel that inadequacy of facilities makes it almost impossible for them to practice hand hygiene. They however admitted that the limited facilities provided are damaged or put to disuse by pupils. In spite of the fact most of the participants during the focus group discussion (FGD) sessions demonstrated a good knowledge of hand hygiene; they admitted that they do not practice it properly. Researchers therefore recommend that media campaign should be stepped up especially with emphasis on the value of hand hygiene over the cost.

Keywords: Knowledge; Attitude, Hand hygiene; information sources; Practice

Background

The risk of contracting deadly and infectious diseases are on the rise globally as diseases such as bird flu, and most recently in Nigeria, Ebola Virus Disease (EVD) and Lassa fever have joined the list which included well-known diseases such as polio, diarrheal, pneumonia and acute respiratory infections (ARI) which are in alarming proportion and call for global response, along with concerted national efforts. Since gathering of data for this study in mid 2019, the Coronavirus 2019, one of the three deadly strains of the Corona viruses affecting humans, has literally taken the world by storm, creating a public health emergency never seen in over a century. The 2019 strain are zoonotic viruses that affect the respiratory tract and is a more fatal version of the Severe Acute Respiratory Syndrome (SARS) discovered in China and the Middle East Acute Respiratory Syndrome (SARS) (NPHCA, 2020). The global scale of contraction and fatality of the COVID-19 makes it the worst health challenge of global consequence since the Spanish Flu Pandemic of 1918.

All of these risk factors make hand washing knowledge and practices an absolute life skill for young children who are at the most vulnerable stage of life because of constant and undifferentiated contact with others. It is equally important for them due to the fact that they are at the stage they can easily learn and imbibe life-changing healthful practices. Hand-washing is especially important for children and adolescents, as these age groups are the most susceptible to infections gained from unwashed hands (Besha, Guche and Yesuf 2016). There is also the need for hand-washing for children at this level because of their proximity to child care settings which can lead to higher risk for spreading of infectious diseases within the age group.

In spite of the fact that hand-washing generally improves teaching and learning processes by reducing sicknesses and diseases among school children thereby reducing absenteeism, its practice is still low in all the developing countries. In most nations of the world, absenteeism in school is still linked to improper practice of hand-washing which increases the risks of contagious diseases. For instance, Besha et al (2016) reported 54% reduction in school absenteeism in China, 40% in Egypt, 35% in Kenya, 27% in Philippines and 20% in Colombia as a result of quality health of children. These recorded successes have direct impact on knowledge acquisition and general growth of in-school children.

Within the context of social and behaviour change, communication plays a critical role at three different levels. The role of communication in addressing social and public health issues is not only about individual behaviour change but also about how the larger society manages and responds. It is about creating an enabling political and social environment for change in which sources of information especially the media play a critical role (UNICEF, 2005). The first area of concern for communication in behaviour change is at the level of policy advocacy. Approaches to advocacy usually begin with data and reasons for addressing development problems that appeal both to the mind and the heart of people in leadership positions. These reasons should also appeal to the self interests of all concerned. Advocacy is seen as an adaptive process that must be continuously employed in the process of gathering, organizing and formulating propositions to be communicated to top-level decision makers through various communicated channels.

At the second level, communication is also targeted social mobilization, which is regarded as the process of initiating and integrating all attempts at harmonizing feasible intersectoral social partners and allies to determine felt-need and raise awareness of, and demand for, a particular development objective within the perceived felt needs of the people. These partners include institutions of concern, groups and non-governmental organizations as well community and networks that can provide resources needed in actualizing behaviour change objective.

The third face of intervention of communication in behaviour change is the heart of the current study. It is about what UNICEF (2005) describes as behaviour development. It is aimed at changing knowledge, attitudes and practices of participant groups and stimulating and facilitating wider social change at the local and national level. BCC involves the use of qualitative and quantitative research data, disseminating information and measuring change in peoples' attitudes and behaviours. Information need not be limited to factual knowledge. It covers behaviour modeling, self-efficacy and empowerment of the people. Past programmes have demonstrated that behaviour development strategies are more successful when they are tied to social mobilisation and advocacy strategies. These strategies are also tied to objectives set for the programme.

Related Theory

Theorizing behaviour change relating to human health is approached in many ways. There the propositions that argue for change at individual levels, there are others that strive for interpersonal and yet others with priority on community and institutional level interventions. The Protection Motivation Theory (PMT) has come to the fore front as a leading proposition for understanding how health status and the fear of having different health challenges affect humans. As Block and Keller (1998) affirm the theory is rooted in the belief that viewing or being exposed to health related messages is crucial to effecting behaviour change. This is because exposing an individual to such messages sort of afford the individual the impetus to weigh up how severe a health challenge is, thereby reviewing his or her vulnerability and most likely accepting the efficacy of alternatives and recommendations the messages offer. It has some relevance to certain aspects of the Health Belief Model especially areas relating to severity and vulnerability.

Protection motivation theory states that stakeholders' motivations or intentions to protect them from harm are enhanced by four critical cognitions or perceptions: the severity of the risks, the personal vulnerability to the risks, self-efficacy or confidence in one's ability to perform the risk-reducing behaviour, and the response efficacy of the risk- reduction behavior (Rogers 1983). It also posits that people's intentions to protect themselves are weakened by the perceived costs of the risk-reducing behaviours and the perceived benefits of the alternative risk-enhancing behaviors. PMT is organized as two mediating sub-processes that consumers use in evaluating threats (threat-appraisal process) and in selecting among coping alternatives (coping appraisal). Assessments of threats (severity, vulnerability, and benefits) and coping factors (self -efficacy, response efficacy, and costs) combine to form a motivation in stakeholders to protect themselves from the risk. According to PMT, people can be motivated to engage in desirable health behaviours not only to avoid health risks but also to avoid social or interpersonal risks (Pechmann, Zhao, Goldberg, Reibling 2003). The research in PMT has focused on the impact of health information (e.g., antismoking messages) on the elicitation of both the appraisal of the threat and of the coping techniques (e.g. Mulilis and Duval 1995, Rippetoe& Rogers 1987, Floyd, Prentice-Dunn, & Rogers 2000) cited by Lindell and Perry (2004)

Method and Materials

Researchers were interested in drawing responses that would lead to providing answers to five key objectives of the study: handwashing facilities available in schools, knowledge of respondents, sources of information, and actual practices of handwashing. Participants were drawn from schools owned by government and private sector organisations in Lagos State. There were 10 participants in each of the two locations where the FGD sessions were held. The first session was held at a Lagos State Government owned secondary School in Ijanikin, Lagos, right inside the Science Laboratory of the School. That afforded the researchers the opportunity to unobtrusively observe the hand washing facilities in the school. The second FGD session took place in a privately owned secondary School in Ojo Local Government Area of the State. It took place in one of the classrooms after the school's official hours. The groups were mixed in terms of gender and level of education.

Discussion of Findings

Knowledge of Respondents about Handwashing

Respondents generally showed basic knowledge regarding handwashing. Participant X3 in the public school even volunteer his opinion on the time he feels that they should wash their hands. He said"we are supposed to wash our hands 3 times a day during break time, closing hour, and when you get home so we suppose to wash our hands to prevent us from germs." Most participants know that handwashing is basic around some of the activities they are engaged in on a daily basis. Participant X6, for instance believes that "more handwashing facilities should be at the gate because of the population of the students in the school, there should be more at the food vendors, strategic places to avoid the cue on other basins," Participant B added that"one should be at the gate, in front of the toilet, by the food vendors," while Participant J said "I think that one should be in front of the class and one should be inside the lad immediately they finish doing their practical they should wash their hands, and to provide water to everywhere in the school compound" Participants in both public and private school were unable to accurately describe the process of handwashing, they were also surprised that alcohol and ashes could be used.

From the above, quantitative and qualitative data indicate that secondary school students are knowledgeable on issues around hand hygiene. The role of parents, teachers, awareness campaigns

by corporate organisations (RB West Africa) and multilateral bodies such as the UNICEF and governmental bodies should be considered crucial in raising awareness on effective handwashing practices. However, the low level of knowledge on Global Handwashing Day among secondary school students calls for increased awareness campaigns to popularize not only the global day of handwashing, but also the importance of such annual event.

Sources of Information on Handwashing

Most participants identified a wide ranging sources that are interpersonal, group based and mass communication in nature. Participants in the session at public school however identified more options. For instance Participant J said yes:

When I was in primary school our teacher told us it was good so that it can prevent us from germs, when we go out for break and after break we must wash our hands, before we eat we must wash our hands and the hand washing during the time of Ebola, before you enter the school you will wash your hands and before you leave the school you will wash your hands.

Participant E identified a more specific source that was based on a campaign effort by a company. She said:

I was chosen as part of the people to go for an outing at a company at Beloxy area before we entered it was mandatory for every staff to put their hands into the basin and then something pour out then your hands will be washed which was for hygienic purpose

In addition, few of the participants could recall some campaign effort by some organisations on visits to their school either at primary school or secondary school level. Participant J recalled that

During our primary school the soap organization EVA came with the soap and basin to wash our hands with the soap and they told us we are to wash our palms and the back of our palms and in between our fingers and to our elbows.

Participant X1 said "Dettol company who produces antiseptics and soap came, gave our school soap that lasted us for 2-3 terms, we enjoyed it, and everyone wanted to wash their hands." He also recalled that there was a sharp drop in the willingness to practice handwashing when the soap and antiseptic product finished. His argument is that "just once in a while because it was a private school so our proprietor cared less because during that time Ebola had gone even now I heard that they don't wash it again"

Participants also identified mass media as major sources they got information from. Participant X2 said "I saw on television Dettol advertisement , Dettol normally use the medium of hand washing to advertise because it is used to prevent germs and I also pick it in newspaper, its everywhere". Participant X3 on the other said:

To me it's not everywhere anymore, because mostly individuals, private bodies were announcing this things in the time of Ebola and Lassa fever, and after that you hardly hear about washing hands in fact apart from washing your hands before eating they don't tell us to wash our hands like before, even the Dettol advert only focus on selling there soap they don't take washing of hands seriously in Nigeria

Participants in the private school also identified similar sources of information on handwashing to the ones identified by participants in the public school. Participant Letter A acknowledged that she has exposed to Dettol campaign saying "Yes, Dettol Company was at our primary school for awareness day, to talk about hand washing," while Participant Letter N said "I saw it in the newspaper and watched it on TV and Dettol Company visited our school to campaign."

Participants in the private school also identified similar sources of information on handwashing to the ones identified by participants in the public school. Participant Letter A acknowledged that she has exposed to Dettol campaign saying "Yes, Dettol Company was at our primary school for

awareness day, to talk about hand washing," while Participant Letter N said "I saw it in the newspaper and watched it on TV and Dettol Company visited our school to campaign." Reports by research assistants show convincingly that students are aware of campaigns on hand washing. One assistant wrote that part of "the School wall was designed with posters of hand washing campaigns from prominent organizations".

An often cited definition of public health campaign, offered by Rogers and Storey (1987) is that which sees it as purposive attempts to inform or influence behaviors in large audiences within a specified time period using an organized set of communication activities and featuring specific messages in multiple channels to motivate behavior change in individual and society (cited by Sood, Shefner-Rogers & Skinner (2014, p.83). Thus health campaign is purpose-directed, that is to produce desirable attitudinal and behaviour change in individual or large number of people in issues relating to personal and community health. Public health is an issue of critical importance to all members of any community, society and nation. In fact, public health is an issue of global concern. This study has identified the leading role of private sector organisations in awareness campaigns on hand hygiene in Nigeria. Notable among this group is RB West Africa, manufacturer of Dettol Soap, Harpic, Mortein, Durex, Airwick, Strepsils, Gaviscon and Nurofen other household hygiene products. Other private sector organisations are Carex Soap, Lifebuoy

The picture that emerges from the foregoing discussion is that interpersonal communication channels, involving parents, siblings and peers as well as group communication in classrooms are considered most effective channels of engaging with students in matters of inculcating information, knowledge and skills on hand washing practices. Moreover, the role of strategic partnerships with organized private sector has been shown to be very effective in sustainable handwashing campaign. It is in this light that we see the dominant contributions of RB West Africa and other hygiene products manufacturers. Moreover, the role of multilateral organisations such as the *Concern Universal*, UNICEF, Centre for Health Enhancement and Social Development (CHESD and *Wateraid* in raising awareness on hand hygiene cannot be down plaid. However, it is important for us to point out that, contrary to our expectations, media organisations seem not to be doing enough in creating mass awareness on hand hygiene practices. Notably, the potentials of entertainment media, computer games, animations and drama, video films and the like seem not to have been fully harnessed in issues of public health awareness campaigns.

Handwashing Facilities Available in Schools

Participants in the public school were mostly able to identify the facilities needed for effective handwashing. For instance, Participant B said "adequate water and from the right source , and if it will be in a school, there should be a tap, basin and it should be in different places and someone should be there to open the tap to avoid the germs on the tap handle." Participant F added that"for proper hand washing we need a basin, clean water, soap and sanitizer." They however failed to mention whether or not the sanitizer should be alcohol based.

When they were asked to discuss the availability and adequacy of those facilities in their school, they clearly establish the fact that those facilities are inadequate, unavailable and sometimes in dysfunctional state. Participant E said "we don't have any of those facilities, the water closet in the toilet are broken, the basin in the toilet are not well channeled even the basins in the lab that is meant for scientific use not for handwashing is not working." Participant B added that "the taps in the labs, I have never seen them running even when we are having practical's I don't see them running, we have to fetch water from the well to wash our hands" The inadequacies of handwashing facilities in the school is best captured by Participant K who said "there are no effective facilities for washing hands in the school, even in the toilet there is no water, except you fetch from the well"

Participants in the private school gave more cautious responses on the availability of facilities in for handwashing. Participant N clearly identified soap, water and basin as useful materials for handwashing and all other participants agreed with her. Participant "O"however revealed that "there are four wash hand basins in all, but there is no consistent running water, no soap and no towels or hand sanitizers"

Unobtrusive observation by our field officers confirms the claims of the FG members. In a field report submitted by one of the research assistants, it was noted that the school visited (a Millennium Secondary School in Lagos, Nigeria) "does not provide students with adequate facilities for hand washing especially wash hand basins and soaps." In another school, the field staff reported that "the School did not provide adequate hand washing items as well as running water… students provided sachet water for own use. Also, each student uses own tissue paper". Similar situation was reported with regard to the schools located in rural areas of the state that participated in the research.

The continual existence of pit latrines and open defecation do not represent the ideal state, so also is the little or non-availability of wash hand basins, soap, tissue paper and hand sanitizers, critical ingredients that facilitate proper hand hygiene. In a study, Doron et al (2011) found that strategic placement of hand-rub dispensers and information yielded an upsurge in the compliance rates in hand hygiene among medical doctors and nurses. The study identified factors contributing to the non-compliance of hand washing in the clinical setting, to include inconsistency and inadequacy of placement of sinks and hand sanitizer dispensers; insufficient reminders (visual and interpersonal) to clinicians from other staff and deficits in clinician knowledge, attitude and accountability.

Similarly, in another study conducted by Aigbiremolen. et al (2015), commonest reasons given for not washing hands regularly were: being too busy (19%) and non-availability of soaps (17.7%) and water (13.5%). The present study has thus established that insufficiency or inadequacy of toilets and handwashing facilities in secondary schools in Lagos State predisposes students to poor hand hygiene practices. This implies that provision of the right amount of toilets, running water, tissue paper, wash hand basins/sinks soap and hand sanitizers, although not widely available, are critical to effective hand hygiene practices among secondary students in Lagos State.

Practice of Handwashing among Participants

Participants' practice of handwashing is generally poor. This fact cut across class and nature of school (public/private). As Participant J in the public school puts it:

It's not everyone that practice washing hands because even in the school we don't practice it, immediately during break we just take our food and eat, going home in the bus we touch people sweating and still when we get home instead of us to wash our hands we just remove our uniform and eat so we don't practice it, it's rare for everyone to practice it.

Handwashing among pupils in public schools is most times limited to the period of meal and after using the toilet as evident in Participant L's submission that:

It's obvious not everyone practices washing our hands, but we are supposed to wash our hands after using the toilet, before eating, in fact before and after cooking but I don't think everyone does it , even me self I don't wash my hands every time but I do wash my hands after using the toilet.

The reasons advanced for failing to practice handwashing vary and have implications for different issues regarding campaigns on handwashing. Some participants believe inadequacy of facilities could be blamed for non-compliance. Participant D, for instance thinks that:

Washing hands is not practiced because there is no water in the immediate environment until you buy sachet water, which will make people lose interest because of the stress in getting the water,

you know it's essential to wash your hands after toilet and kitchen.

His position is supported by Participant B who feels that:

It's not about how many facilities in school, number one they are not working anymore, the number of five students cannot be in the toilet at the same time, the woman in charge of the toilet will not allow that, so I think the facilities brought as to be maintained

Other reasons advanced for non-compliance concern students attitude more. Participant X2'sopinion is that:

If we continue talking on this thing we are still going back to that particular point, the mentality of the student, the student that does not know what to use and the usage of the thing is not known, abuse will be inevitable normally all those students are in government school, not all of them have a proper background.

That position is supported by all participant and further amplified by Participant J who said

We students believe that we are in government school... cannot behave normal, because the government is providing (the facilities) we can destroy (then) because we are not paying school fees, even if the government provide this facilities students won't know how to use it so it will be useless.

The situation is similar in the private school session as participant generally agreed that handwashing is poorly practiced in the school. Participant Letter F revealed that they "mostly practice hand washing in school but without soap" while Letter M said that they "do not practice hand washing in school because there is no soap." They also believe inadequacies of facilities for handwashing is a strong hindrance to their practice of handwashing. Participant Letter M believes that "gender affects the attitude and practice especially females, because they have more personal hygiene to take care of like menstrual period and hair washing," that she believes makes them go extra mile in washing their hands sometimes with materials brought from home.

In an earlier but related study, Le and Luu (2013) investigated level of hand-washing behaviour and hand-washing with soap (HWWS) compliance, as well as identify associated factors among primary and secondary school students in the multi-ethnic rural area of northern Vietnam. Quantitative methods were added to face-to-face interviews with, and demonstration of hand-washing protocol to, 319 school children in first, fourth, and seventh grades. Le and Luu (2013) found that among the 319 school children interviewed, 66% reported HWWS. However, through the demonstration protocol, only 10 out of 319 school children, performed HWWS satisfactorily. The researchers therefore established that a huge gap exists between actual practice of hand-washing with soap and awareness of the practice. The percentage of students who washed their hands at recommended times (30–60 sec) was 58%. This proportion increased by grade (from 34% among grade 1 to 67% among grade 7; $p<0.05$). All 20 homes of schoolchildren visited had soap and water but none of the six schools had soap for hand-washing.

The Le and Luu (2013) study shows poor compliance of schoolchildren with HWWS in a multi-ethnic population in Vietnam. The study concludes that education on hand-washing needs to be prioritized among multi-ethnic children at school. Nigeria, particularly Lagos State that is investigated through the present research is equally an ethnically and religiously diverse country similar to Vietnamese situation, a country which, like Nigeria, has also experienced civil war and mistrust among its ethnic compositions. The present study has also established that though students have a good knowledge of hand hygiene protocols, practice of handwashing, as revealed through qualitative data, seems not to have matched the high level of knowledge about hand hygiene. Even the overwhelming data through questionnaire showing non-availability and or insufficiency of toilet facilities and handwashing and sanitizing resources in schools point attention to dis-incentives to proper hand hygiene in schools in Lagos State.

The above seems to be confirmed also with data through the response to an open-ended item on the questionnaire, some of the respondents claimed that it is difficult to practice proper handwashing because they find the exercise stressful and taskingrevealed that 62% of the respondents wash hand with soap and water after urinating, while and 68% do the same after defecating. This shows that the practice of hand washing after defecation is more popular than after urinating. Moreover, 55% of respondents wash their hands with soap and water after using the laboratory, while a mere 4 per cent always wash their hands after visiting or working in the cadaver room. The researchers however pointed out that poor hand hygiene by respondents who happen to be medical students could be responsible for spread of infection among colleagues and patients with the consequence to leading to what is termed Hospital Acquired Infection (HAI). The study recommended hand hygiene education and provision of alcohol gel sanitizer to help improve hand hygiene among medical practitioners. In our case in the present study, secondary school students, rather than medical students at university level were investigated. Although the present research did not carry out active participant observation of handwashing culture among secondary school students, data from focus group discussion established poor handwashing practices in the present study group.

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