EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 11
Issue: 1
01-07
Year: 2024

HAND WASHING PRACTISES AMONG RURAL HEALTHCARE WORKERS: IMPLICATION TO CHILD HEALTH

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Article Received on 30/10/2023 **Article Revised on 20/11/2023** **Article Accepted on 10/12/2023**

ABSTRACT

Background: Hand washing can be defined as the process of cleansing the whole hands with water and, or soap for the purpose of removal of dirt, chemical or microbial agents. Community Directed Distributors of Key House Hold Practices are rural based health care workers who also care for their children. **Aim:** To assess the profile of this category of health workers, their knowledge, attitude and practise of hand-washing. **Method:** A multi stage sampling technique was used and subjects were community directed distributors of key house hold practices in Anambra East Local Government Area in Anambra State, South-East Nigeria. One hundred and sixty one (161) questionnaires were distributed, returned and analysed. All data were analysed statistically using SPSS version 16.0 and where possible presented as mean± standard deviation. A one-way analysis of variance (ANOVA) and Chi Square were used to compare data. Test of significance was adjudged with p-value and a value less or equal to 0.05 was taken as significant. **Results**: There was a female predominance among the community directed distributors health workers with a mean age of 29.5±6.5 years. Their educational level was predominantly secondary while a few had no formal education. Hand washing habits among our studied group was very poor. Their different levels of education had no significant influence on their behaviour. As low as 5% of CDDs washed their hands either with or without soap after attending a child who had defecated and only 4% of them washed their hands with soap before feeding their children. These are about the most important aspect of basic hygiene for everybody talks less of people who are supposed to be better informed. This unhygienic practice may not affect only the mother/caregiver but, the child and the society at large. **Conclusion:** Occasions of hand washing was generally very poor among this class of health-workers. Their poor hygienic behaviour could be a major militating factor against child's health and to a larger extent the member of the larger society they lead.

KEYWORDS: Hand washing practices; Community Directed Distributors; Hygiene and Child's health.

INTRODUCTION

Community Directed Distributors (CDDs) are persons appointed or elected by the community, trained by institutionalized health systems to serve their communities in areas of dire health needs.[1][2]

According to World Health Organization[3], CDD was initially set up in the 90s to distribute ivermectin but, has now been integrated to take part in the effective implementation of Community Directed Interventions (CDI).

The people selected to become CDDs are generally perceived by the community as being honest and trustworthy, having good conduct, integrity and literacy. As volunteers, their motivation is mainly by gains in recognition, self-esteem and knowledge, rather than cash incentives.[1][2]

Many simple, affordable and effective disease control measures have had limited impact due to poor access to health facility especially by the poorer populations (urban and rural) and inadequate community participation. A proven strategy to address the problem of access to health interventions is the Community Directed Interventions (CDI) approach, which has been used successfully in rural areas.[4]

Key house hold practices include actions taken by CDDs and other child care givers to prevent diseases to the index child or other people in the same environment as

well as home management of certain illnesses and health seeking behaviour.[5][6]

Hand washing can be defined as the process of cleansing the whole hands with water and, or soap for the purpose of removal of dirt, chemical or microbial agents. WHO further divides hand washing into hand-antiseptsis, hand-disinfection, hand-cleansing, hygienic handrub, hygienic handwash and surgical hand antisepsis/surgical hand preparation/presurgical hand preparation.[7] Emphasis is on the whole hands as both hands must be washed against each other for at least 15-30 seconds using generous amount of water.[5]

In a study carried out in Pakistan only 15% of CDDs and child care givers washed their hands before preparing food and only 8.8% washed their hands after attending a child who had defecated.[8]

In a research done among nursery and primary pupils in Enugu, South-East Nigeria, Ilechukwu *et al*[9] found that the rate of helminthic infection varied significantly with hand washing habits after defecations and with different habits of washing fruits before eating among the pupils.

In a similar manner Ekpo *et al*[10], demonstrated that their results indicated that burden of parasite infections and poor sanitary conditions are of greater public health importance in government-owned schools than in privately owned schools in South-Western Nigeria.

From a work carried in Enugu, south-east Nigeria, it was recommended that hand washing should not only be strictly practiced among healthcare staff their stethoscopes should be disinfected before after use on each patient.[9]

A work done in Ghana found out that the most effective way of stopping infection is to stop faecal material getting into the child's environment by safe disposal of faeces and washing hands with soap once faecal material has contaminated them in the home.[11]

Ignorance among the women, house chores and economic factor were among the reasons for non washing of their hands after attending a child who had defecated.[12]

MATERIALS AND METHODS

STUDY AREA

Study area was Anambra East Local Area. Anambra East Local Government Area is one out of the 21 Local Government Areas in Anambra State.

Anambra State is one out of the five States in South-Eastern Nigeria.

Anambra East Local Government is made of ten major towns and many villages. The towns are Aguleri, Enugwu Aguleri, Eziagulu Otu Aguleri, Enugu Otu Aguleri, Otuocha, Umuoba Anam, Umuleri, Igbariam, Nando and Nsugbe. The Local Government Area has a population of 153,331 comprising 77,804 males and 75,527 females.[13] The people are predominantly subsistence farmers and petty traders.

STUDY POPULATION/INCLUSION CRITERIA

Study population was Community Directed Distributors in Anambra East Local Government Area selected by their various communities and undergoing training or retraining as at the time of data collection.

Study Design: The survey employed a descriptive cross-sectional study among Community Directed Distributors selected by their various communities during their one week training or retraining in 2014.

Sampling Technique: A multistage sampling technique (Probability sampling) was adopted for the study.[14] The entire state was divided into 21 Local Government Area (Stage One). Out of the 21 Local Government Areas of the state (Clusters), Anambra East was chosen (Stage Two). Anambra East has about thirty communities with each community selecting between 4 and 7 CDDs (Stage Three). There were two towns with three classes each where CDDs were undergoing training at that period of data collection.

Each class had about 30 CDDs making a total of one hundred and eighty (180) CDDs for the whole of the Local Government Area. One hundred and sixty one (161) questionnaires were then distributed.

Sample Size Calculation

The sample size formula was used to test the statistical suitability of the number of questionnaire thus

$$N = \frac{Z^2PQ}{d^2}$$

Where:

N = Minimize Sample Size.

Z = Standard normal deviate (1.96) at 95%confidence limit,

P=Prevalence (10.6% hand washing among CDDs),

Q = 1-P and d = Degree of precision at 5% (0.05).

Extrapolating therefore we have $\frac{(1.96)^2 \times 0.106 \times (1-0.106)}{(0.05)}$

$= \frac{3.85 \times 0.106 \times 0.894}{0.0025}$. N = 145.936.

Adding 10% attrition to sample size (10% of 145.936 +145.936) = 160.529.

Our desired sample size is therefore at least 160.529 and was taken as 161 CDDs.

Ethical Consideration

The study, its content and purpose were orally explained to the Director of Training of the CDDs at Awka and his consent granted. On the site/field permissions were obtained from Training Coordinator and Resource

Persons before access to the CDDs was gained. The contents and purpose of the questionnaire were again explained to the CDDs in languages clearly understood by them and their consent granted before questionnaires were distributed.

DATA COLLECTION

Umulaeri and Agulaeri towns in Anambra East Local Government Area were visited on the 19th day of February, 2014. The CDDs were located at Nneyi Development Hall (Umuleri) with three classes.

Another three classes were located at Aguleri Civic Hall to make a total of six classes with total CDDs of 180. Typical and standard questionnaire from CDD/WHO initiative was downloaded and used as such. 161 questionnaires were distributed to the CDDs present at training sites on 19/02/2014. The assistance of their resource persons was solicited to read the questionnaire line after line for all the twenty three line questions and further explain to them in their local languages any clause that was not clear to any of them. There was however no influence on their choice of answer.

Most questions required only "Ticking or marking" as sentences were avoided. Completed questionnaires were returned at will whenever completed. There were no given time frame but, all questionnaires were returned on the same day.[15]

Statistical Analysis

All returned questionnaires were statistically analysed using Special Statistical Package for Social Sciences (SPSS) 16.0 version. Analysis of variance (ANOVA) was used and where possible presented as mean± standard deviation. Pearson Chi-Square was used for comparative statistics to check for the influence of level of education on certain behavioural pattern.[16]

Probability value (p. Value) of less than or equal to 0.05 was taken as significant.[17]

SOME LIMITATIONS TO THIS STUDY

The work covered only those who were present at the scene of data collection.

There were financial and transport challenges in reaching out to the villages to meet the CDDs. Some of the respondents had poor or no understanding at answering some aspects of the questionnaire.

RESULTS

Result on demography:- All the 161 distributed questionnaires were returned. There was no questionnaire that was wholesomely uncompleted but, some specific questions were not answered in virtually all questionnaires. All unanswered questions were represented as "No Response" in the specific sub-segment. From the survey, there was a female predominance. Out of the 161 CDDs, 109 (67.7%) were females while 52 (32.3%) were males (Table 1). There was a predominance of ages 29-38 with a frequency of 62 (37.2%). This was followed by 18-28 with a frequency of 36 (22.4%). Then those between 39 and 48 took the third position with a frequency of 34(21.1%).

The fourth in frequency was the age 49-58 with a frequency of 23(14.3%) while the oldest group, of 59-68 had a frequency of 8(5.0%) (Table 2).

Secondary education had predominance with a frequency of 71(44.1%), followed by tertiary education with a frequency of 60 (37.3%).

The primary education had a frequency of 22 (13.7%) while those with no formal education had a frequency of 8 (4.9%) (Table 3).

Table 1: Gender Distribution of CDDs.

Variables	Frequency	Percentage
Females	109	67.7
Males	52	32.3
Total	161	100

Table 2: Age Distribution of CDDs.

Variables	Frequency	Percentage
18-28	36	22.4
29-38	62	37.2
39-48	32	21.1
49-58	23	14.3
59-68	08	05

Table 3: Educational Qualification of CDDs.

Variables	Frequency	Percentage
No formal	8	4.9
Primary	22	13.7
Secondary	71	44.1
Tertiary	60	37.3
Total	161	100

Result on hand-washing practises

Occasions of hand washing especially before and after food did not seem to be popular among the CDDs. Out of 161 CDDs, 93(57.8%) washed their hands with soap after using the toilet while 22 (13.7%) did without soap. On the other hand 23 (14.3%) washed their hands with soap before eating but, 68 (42.2%) did without soap. While 15(9.3%) washed with soap before preparing food 12 (7.5%) did without soap. Again 6 (3.7%) washed with soap after eating but, only 29(18.0%) did without soap (Table 4). Equal number of 8 (5.0%) washed their hands either with or without soap after attending a child who had defecated. 4(2.5%) CDDs had their hands washed with soap before feeding a child while 9(5.6%) did without soap. While 6 CDDs washed their hands with soap at other non-specified occasions 9 (5.6%) did without soap.

Two CDDs could not affix to any given option of washing with soap while 4 (2.5%) also could not without soap. A total of 4 CDDs had their hands washed with soap at other non specified occasions as well as before and after eating, after using the toilets, before preparing food and before feeding a child (Table 4). There was no significant (Chi Sq= 38.65) ($p<0.35$) influence of educational qualification on pattern of hand washing with soap among the CDDs (Fig.1).

Table 4: Occasions of Hand Washing Among the CDDs.

Variables	Frequency WITH SOAP	Percentage	Frequency NO SOAP	Percentage
1)After toilet	93	57.8	22	13.7
2).Before eating	23	14.3	68	42.2
3)After attending a child who had defecated	8	5.0	8	5.0
4)After eating	6	3.7	29	18
5)Before preparing food	15	9.3	12	7.5
6)Before feeding a child	4	2.5	9	5.6
7)Others	6	3.7	9	5.6
1,2,4,5,6,7	4	2.5	Nil	Nil
No Response	2	1.2	4	2.5
Total	161	100.0	161	100.0

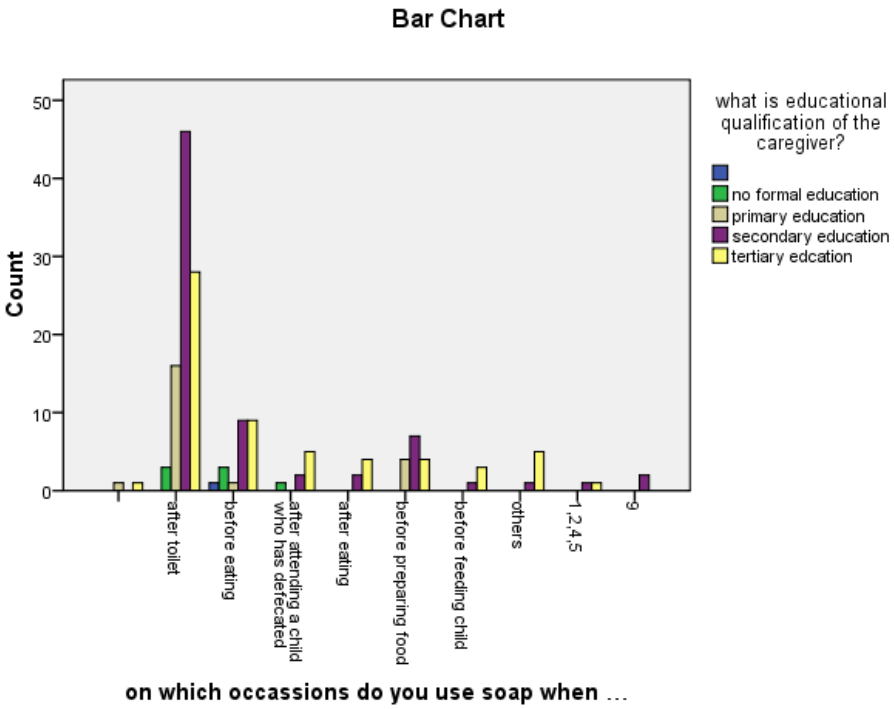

Fig 1: Educational Level and Hand Washing.

Figure shows a comparative bar chart of influence of educational levels on hand washing with soap among CDDs. No significant (Chi Sq= 38.65) ($p<0.35$) influence was demonstrated.

DISCUSSION

Standard public health interventions to improve hand hygiene in communities with high levels of child mortality encourage community residents to wash their hands with soap at five separate key times, a recommendation that would require mothers living in impoverished households to typically wash hands with soap more than ten times per day.[18]

Our work showed a female predominance among this group of healthcare workers. This is a welcomed development bearing in mind the aim of this work as women in Africa carryout most domestic and childcare activities.

Educational level of CDDs gives a lot of reasons to worry about. Majority were secondary levels. Primary educational level and no formal education had 37.2% and 4.3% respectively. In Uganda, 3.5% CDDs had no formal education[19] [20], Ibadan had 2%[4] [21] with no formal education while Pakistan had 8.8% CDDs with no formal education.[8] Poor educational qualification therefore seems a global problem.

Hand washing habits among our studied group was very poor. Their different levels of education had no significant influence on their behaviour. As low as 5% of CDDs washed their hands either with or without soap after attending a child who had defecated. This is about the most important aspect of basic hygiene for everybody talks less of people who are supposed to be better informed.

This unhygienic practice may not affect only the mother/caregiver but, the child and the society at large. Then making matter worse, only 4% of them washed their hands with soap before feeding their children.

In a similar study carried out in Ghana, it was found that as few as 4% of mothers engaged in hand washing with soap and water after defecation, and only 2% after cleaning a child's bottom.[11] But, each year more than 2 million children die from diarrhoeal diseases; the same number again die from acute respiratory infections.[11] [12]

Water sources in low-income countries and rural areas were more likely to be contaminated with faecal contaminants.[22] Although, microbial contamination is widespread and affects all water source types, including piped supplies.[22] In rural Bangladeshi, a minority of the residents washed both hands with soap at key hand washing times, though rinsing hands with only water was more common thus to realize the health benefits of hand washing, efforts to improve handwashing in these communities should target adding soap to current hand rinsing practices.[23] When hands are washed at recommended times like before preparing food is particularly, an important opportunity to prevent childhood diarrhoea while hand washing with water alone can also significantly reduce childhood diarrhoea.[18] [24]

In another similar study carried out among community directed distributors on key household practices in Pakistan; only 10.6% washed their hands after attending to a child who had defecated.[8]

Hand washing practice with soap before eating was much lower than after defecation and in baseline data, 8% reported to wash their hands with soap which significantly increased to 22% in end line.[25] These authors also found that hand washing knowledge and practices before cooking food, before serving food and while handling babies is considerably limited than other critical times.

Our findings support the work of Ajayi., *et al*,.[4] on the faulty pattern of selection or appointment of the CDDs else how can people of such academic and ill-informed background carry out this kind of onerous task?

The CDDs are supposed to be a bridge to the less informed class of Nigerians. This indeed is "The Blinds Leading The Blinds".

Again only about 7.5% washed their hands with soap while just 9.5% washed without soap before preparing their family food.

By extension constitutes further danger to their families and to the entire society at large. Communal cooking abounds in our rural settings and this category of people may be cooks during larger ceremonies.

The work of Scott *et al*.,[21] however puts it that it is not enough to blame mothers but, a thorough look into the reason for their behaviour should be undertaken. To justify the point, a work carried out in Kenya demonstrated a statistically significant increase in the number of females who washed their hands properly and timely when they were provided with portable water.[26]

It is estimated that over half of health care facilities in developing countries lack access to hand washing facilities.[27] Consequently, the risk of healthcare-associated infections in developing countries is approximately 2–20 times greater than in higher-income countries.[28]

Interventions programme in Kenyan schools brought improvement in proper hand washing techniques after the school programme was introduced and a decrease in the median percentage of students with acute respiratory illness among those exposed to the programme but, however, no decrease in acute diarrhoea was seen.[29]

CONCLUSION

Occasions of hand washing was generally very poor among this class of health-workers. Their poor hygienic

behaviour could be a major militating factor against child's health and to a larger extent the member of the larger society they lead or care for.

We recommend proper and further education of this category of healthcare workers. Provision of portable water in most part of our rural and urban communities is also imperative.

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