HAND WASHING PRACTICES AT CRITICAL TIMES AMONG MOTHERS IN SELECTED HEALTH FACILITIES IN AKWA IBOM STATE

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ABSTRACT

***Background**: Poor hygiene practices, unsafe water supply and inadequate sanitation are important causes of diarrhoeal disease, one of the biggest killers of children in developing countries. Hand washing with soap and water, a simple act notably ignored, is known to significantly reduce diarrhoea risk by almost half. This study assessed the practices of hand washing with soap at critical times and the determinants of good hand washing practices among caregivers of under-five children in selected health facilities in Uyo.*

***Materials and Methods**- A descriptive cross sectional study was carried out among mothers and caregivers of under-five children in two selected primary health facilities in two local government areas in Uyo senatorial district of Akwa Ibom State who consecutively presented their babies for immunization. Data was collected using interviewer and self administered questionnaire on hand washing at critical times and type of hand washing practiced by mothers and analysed with SPSS version 17.0*

***Results**: Two hundred and nineteen mothers /care givers participated in the study with a mean age of 27.9 ± 5.4 years. All mothers had some form of formal education and majority (72.6%) were delivered of their babies in an orthodox setting. Sixty one point two percent, 47.0% and 84.9% always washed their hands before preparing food, before feeding child and after defecation respectively. Also, 25.6% and 51.6% always washed their hands before breastfeeding child and after cleaning up a child who defecates respectively .Sixty five (29.7%) were graded as having good hand washing practice,102 (46.6%) had fair hand washing practice while fifty two (23.7%) had poor hand washing practice. Good hand washing practice was significantly associated with delivery setting (p=0.008), availability of water source in their residence (p=0.000) and the point of receiving immunization for their babies (p=0.000).*

***Conclusion**: Health workers should intensify health education messages in and outside health facilities on the benefits of good hand washing practice among mothers. The provision of water to every home, a factor that promotes good hand washing should be a priority of government if the task of reducing child mortality is ever to be achieved.*

***Key words:** Mothers/ caregivers, hand washing, Practice, Uyo*

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INTRODUCTION

Diarrhoea remains one of the major public-health problems in developing countries with approximately 1.5 billion episodes reported yearly, a figure that has remained more or less constant over the last 20 years[1]. Diarrhoea kills about 2.5 million annually with the majority being children aged less than five years in developing countries [2]. Furthermore, it can lead to malnutrition, impaired physical growth and cognitive development.[3,4]

About 88% of diarrhoeal diseases is attributed to unsafe water supply, inadequate sanitation and poor hygiene practices.[5] Consequently, the improvement of water supply at the household or community level through provision of pipe borne water, provision of sanitary facilities and hygiene promotion interventions are identified strategies to control diarrhoea.

Specific activities at the domestic and community settings like hygiene education and promotion of adequate hand washing after defecation, after handling faeces (including children's faeces), and before handling food can prevent hygiene related diseases especially diarrhoea,[6] one million child deaths per year, reducing diarrhoea risk by as much as 47%.[7,8] Hand washing with soap and water (HWWS) is also known to significantly reduce respiratory and skin infection including trachoma.[9]

The Global hand washing day celebrated on October 15 of every year seeks to promote hand washing at critical times. The Federal Government of Nigeria/UNICEF Water, Sanitation and Hygiene (WASH) Programme, being implemented in all 36 States and the Federal Capital Territory aims to create safe water sources, sanitary facilities and hygiene education for communities and schools.[10] In 2008, one of the 3 targets for the International Year of Sanitation Action Plan for Nigeria was to conduct hand washing campaigns in all states and local government areas to reach 30 million people as part of its drive to meeting the millennium development goals.[10] This target has not been met because the practice is yet to gain momentum and acceptance in some parts of the country.[7] Studies has shown that HWWS at key junctures, such as after the toilet, or after cleaning up a child, is not a common practice, occurring on average at only 17% and 13% of occasions respectively.[11] However, the use of plain water for hand washing is about three times more frequent.[11] Main reason for low rates of hand washing with soap is that it is simply not a habit and not the absence of soap or water.[9] The challenge therefore, is to make hand washing with soap a habit and a social norm on a worldwide basis.

This study sought to determine the practice of hand washing with soap at critical times and the determinants of good hand washing practices among caregivers of under-five children in selected health facilities in Uyo Senatorial district in Akwa Ibom State, Nigeria. The findings of this study will be utilized in developing a hygiene education for mothers and care-givers with a specific content to correcting poor hand washing practices of mothers and encouraging mothers with good practice to make hand washing with soap a habit and a social norm in our locality.

Materials and Methods

The study was carried out in Akwa Ibom State, an oil rich southern state in Nigeria. The State has three (3) Senatorial districts, one of which is Uyo Senatorial district with nine (9) local government areas.

Two health centres were purposively selected from two local government areas in Uyo Senatorial district namely; the health clinic in the department of community health of the University of Uyo Teaching Hospital, in Uyo Local Government Area, the state capital city and another health centre at West Itam, in Itu LGA, a rural local government area in the same senatorial district.

The sample size was determined using the cross sectional study sample size formula, $n=Z^2pq/d^2$ by substituting, p of 17% being the prevalence of caregivers who used soap to wash hands after defecation in a study by Global-Public Private Partnership for Hand washing (PPPHW) in several sub Saharan African countries to obtain a sample size of 219.[12] The study population was mothers of under-five children who consecutively attended the immunization/well babies' clinics in the selected health centres until the minimum sample size was obtained. A code was indicated on the child health card presented by mothers already recruited to avoid double recruitment. A descriptive cross sectional study design was used for the study which lasted for a period of two weeks.

A pre-tested self and an interviewer-administered English language structured

questionnaire focusing on the practice of hand washing at critical times was used for data collection. A score of ' 1' was awarded when respondent always used soap and water to wash hands after defecation, cleaning a child, before food preparation, breast feeding or feeding a child; and '0' for all other practices which included using soap and water 'sometimes' or 'never' for these activities. For each caregiver, the minimum and maximum possible scores were 0 and 5.The hand washing practice for each respondent was graded as good if respondent scored 4 or 5, fair if score was 2 or 3 and poor if score was 0 or 1.

Data was analysed using SPSS version 17 statistical software. Results were presented in tables and charts. Chi-square test of association at statistical significance of 0.05 was calculated where appropriate. Approval to conduct the research was obtained from the ethical review committee of the University of Uyo Teaching Hospital and the State Ministry of Health, Akwa Ibom State while individual informed consent was obtained from the caregivers. Confidentiality was maintained throughout the conduct of the study.

RESULTS

Two hundred and nineteen mothers participated in the study. Their ages ranged from 15-42 years (mean of 27.9 $\pm$ 5.4 years) with a greater proportion (65.8%) of them in the age group 25-34 years. All respondents had some formal education with almost an equal proportion 95 (43.4%) and 102 (46.6%) having tertiary and secondary education respectively.

The parity of the mothers ranged from 1 to 8 and majority (63.5%) had more than one child. A greater proportion of the mothers (60.7%) were of the Ibibio tribe. (Table 1a)

Most (72.6%) delivered their babies in an orthodox setting. More than half of the mothers 130 (59.4%) presented their babies for immunization at the community health clinic of the teaching hospital. More than half 118 (53.9%) had a source of water supply in their residence with borehole 115 (52.5%) being the commonest source of water. Almost all, 211 (96.3%) respondents

Table 1(a): Socio demographic characteristics of Respondents in selected health facilities in Akwa Ibom State (n=219)

Characteristics	Frequency(n)	Percentage (%)
Age (in years)		
Less than 24	49	22.4
25-34	144	65.8
35-44	26	11.9
Educational Level		
Primary education	22	10.0
Secondary education	102	46.6
Post secondary education	95	43.4
Parity		
One child	80	36.5
More than one child	139	63.5
Tribe		
Ibibio	133	60.7
Annang	33	15.1
Igbos	29	13.2
Oron	9	4.1
Others	15	6.8

Table 1(b): Clinical characteristics of Respondents in Selected Health Facilities in Akwa Ibom State (n=219)

Characteristics	Frequency(n)	Percentage (%)
Place of Delivery of index Baby		
Teaching Hospital	91	41.6
Traditional Birth Attendant	39	17.8
Primary Health Centre	27	12.3
Private Hospital	22	10.0
General Hospital	19	8.7
Church	17	7.8
Home	4	1.8
Delivery settings		
Orthodox	159	72.6
Non Orthodox	60	27.4
Immunization service point		
PHC, West Itam		
Health Clinic,UUTH	89	40.6
	130	59.4
Water Source at home		
Yes	118	53.9
No	101	46.1
Type of water source at home (n=118)		
Borehole	115	97.5
Pipe borne water	3	2.5
Constant availability of soap at home		
Yes	211	96.3
No	8	3.7

Table 2: Self reported frequency of hand washing with soap at critical times by Mothers in selected health centres in Akwa Ibom State.

Variable	Always n (%)	Sometimes n (%)	Never n (%)
Hand washing before food preparation	134 (61.2)	80 (36.5)	5 (2.3)
Hand washing before feeding child	103 (47.0)	99 (45.2)	17 (7.8)
Hand washing after defecation	186 (84.9)	29 (13.2)	4 (1.8)
Hand washing before breastfeeding	56 (25.6)	139 (63.5)	24 (11.0)
Hand washing after cleaning soiled child	113 (51.6)	79 (36.1)	27 (12.3)

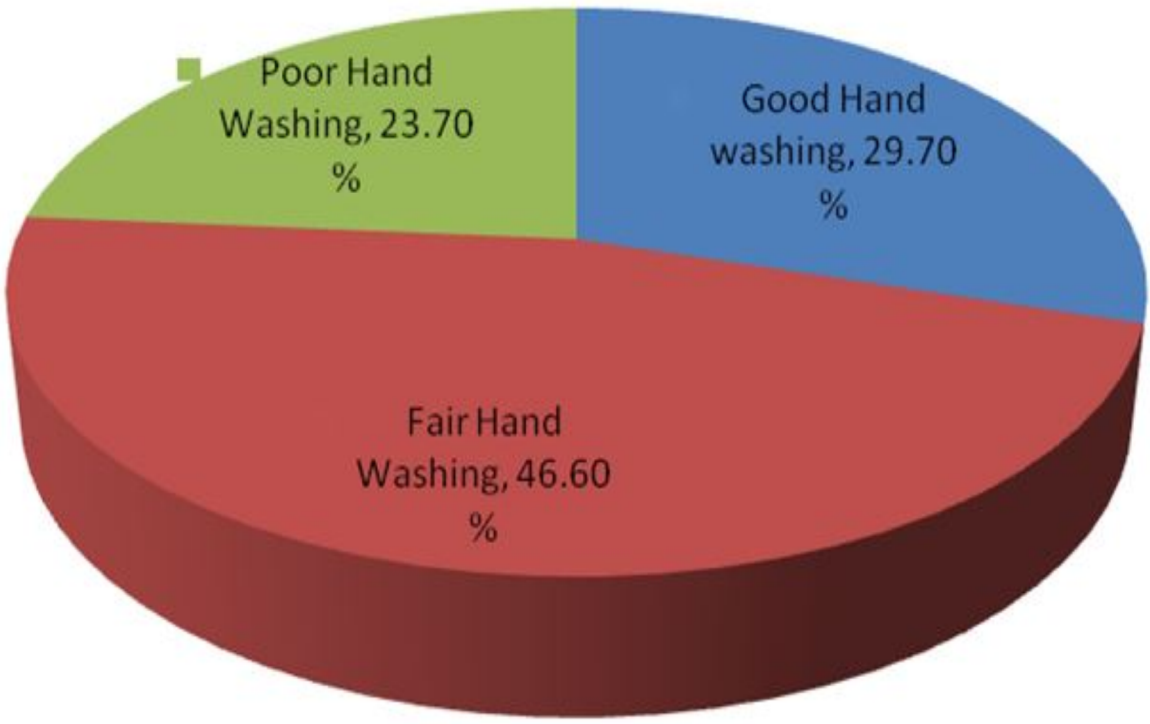

Figure 1. Type of Hand Washing Practiced by Mothers in selected health centres in Akwa Ibom State.

Table 3: Association Between Socio- demographic characteristics of Mothers and Hand washing Practice at critical times in selected health centres in Akwa Ibom State

Variables	Hand Washing Practice			Test Statistics
	Good n (%)	Fair n (%)	Poor n (%)	And Statistical values
Age group				X^2=2.470
Less than 24	17 (34.7)	22 (44.9)	10 (20.4)	P=0.650
25-34	39 (27.1)	67 (46.5)	38 (26.4)	
35-44	9 (34.6)	13 (50.0)	4 (15.4)	
Education				X^2=4.118
Primary	3 (13.6)	12 (54.5)	7 (31.8)	P =0.390
Secondary	29 (28.4)	48 (47.1)	25 (24.5)	
Tertiary	33 (34.7)	42 (44.2)	20 (21.1)	
Parity				X^2= 2.013
One child	28 (35.0)	36 (45.0)	16 (20.0)	P =0.365
More than one child	37 (26.6)	66 (47.5)	36 (25.9)	
Delivery settings				X^2= 9.735
Orthodox	51 (32.1)	79 (49.7)	29 (18.2)	*P= 0.008
Non orthodox	14 (23.3)	23 (38.3)	23 (38.3)	
Tribe				
Ibibio	38 (28.6)	65 (48.9)	30 (22.6)	X^2=14.89
Annang	6 (18.2)	14 (42.4)	13 (39.4)	P= 0.136
Oron	3 (33.3)	3 (33.3)	3 (33.3)	
Igbo	11 (37.9)	16 (55.2)	2 (6.9)	
Yoruba	1 (25.0)	2 (50.0)	1 (25.0)	
Others	6 (54.5)	2 (18.2)	3 (27.3)	
Immunization Point				X^2= 16.228
UUTH Health clinic	47 (36.2)	64 (49.2)	19 (14.6)	*P=0.000
PHC West Itam	18 (20.2)	38 (42.7)	33 (37.1)	
Water at Home				X^2= 17.397
Yes	49 (41.5)	47 (39.8)	22 (18.6)	*P=0.000
No	16 (15.8)	55 (54.5)	30 (29.7)	
Soap always available at Home				X^2=3.383
Yes	64 (30.3)	99 (46.9)	48 (22.7)	P=0.184
No	1 (12.5)	3 (37.5)	4 (50.0)	

*Significant p values

reported always having soap in their homes. (Table 1b)

One hundred and thirty four (61.2%) of 219 respondents claimed to always wash their hands before preparing food for their children while 80 (36.6%) and 5 (2.3%) claimed to do so sometimes and never respectively.

Regarding the practice of specifically washing their hands before feeding their children, 103 (47%) claimed to always do so while 99 (45.2%) do so sometimes and 16 (7.3%) never did so.

The majority of mothers 186 (84.9%) always wash their hands after defecating while only 29 (13.2%) and 4 (1.8%) do so sometimes and never respectively.

Only 56 (25.6%) mothers always wash their hands specifically before breastfeeding their babies while 139 (63.5%) and 24(11%) do so sometimes and never respectively.

On washing hands with soap and water after cleaning up a child who defecates, slightly more than half 113 (51.6%) mothers always do so while 79 (36%) and 27(12.3%) do so sometimes and never respectively. (Table 2)

Overall, 102 (46.6%) mothers were graded as having fair hand washing practice while 65 (29.7%) and 52 (23.7%) had good and poor hand washing practices respectively. (Figure 1)

Maternal practice of hand washing with soap and water was significantly ($p = 0.008$) associated with the delivery setting of mothers such that a greater proportion of mothers who were delivered of their babies in an orthodox setting showed good practice compared to those who were delivered of their babies in a non orthodox setting.

Respondents who had a source of water in their residence significantly ($p = 0.000$) practiced good hand washing than those without it. Practice of hand washing was also significantly associated with the place mothers presented their children for immunization with more mothers who received immunization in the teaching hospital health clinic practicing good hand washing ($p=0.000$) than mothers in the primary health centre. Although more mothers with more than one child and those with post secondary education practiced good hand washing, the difference was not statistically significant. There was no statistically significant association between practice of good hand washing and maternal age, tribe and availability of soap in the home. (Table 3)

Discussion

This study assessed the practice of hand washing among mothers of under-five children. From the findings, only 29.7% of the mothers practiced good hand washing, a figure slightly lower than the 34.3% reported by a similar study in Edo State.[13] This low practice of good HWWS was in spite of the availability of soap at all times and water for the majority. This concurs with the findings from other studies that the cause of low hand washing rates is rarely lack of soap as soap is present in the vast majority of households worldwide, [9] but it is commonly used for bathing and laundry and not hand washing. Lack of water is usually not a problem either, as hands can be effectively washed with little, or recycled water. In studies around the world, the main reason given for low rates of hand washing with soap is that it is simply not a habit.[14,15,16] This appears to be the reason for this low practice of HWWS in this setting

The least times of HWWS for the majority was before breast feeding (25.6%) and before feeding a child (47.0%).These figures compares to 27.5% and 38.2% respectively reported in a similar study by mothers in Edo state, [13] but higher than 0.4% and 0.5% rates observed in a study in Bangladesh.[17]

Before breastfeeding, most mothers never considered their hands dirty and traditionally never care to wash. Besides, breast feeding could be done anywhere and most times, the mothers claimed that water is not available in such places. As true as this assertion is, if mothers/care givers were to see HWWS as a habit, they would make

attempt to find water and wash their hands before breastfeeding. Some mothers reported applying native chalk on the breast 'to cool the breast' and not wash their hands thereafter.

To most of them, there was no need of washing their hands specifically before feeding the child since they had washed before preparing the food. For most of those who washed, only water was used as they never considered the hands to be dirty. The dirty hands may serve as a common route for easy transmission of faeco-oral diseases to the children.

A greater proportion (61.2%) of mothers/ care givers in this study practiced HWWS before preparing food for the child. Most women consider their hands dirty after having done other activities before preparing food for the baby and therefore, culturally wash with soap and water. The formal education attained by all mothers in the study and the health education received by the majority of them who delivered in an orthodox setting may be responsible for this. This reported prevalence is higher than 35.3% reported by mothers in a rural setting where some mothers had no formal education.[13]

For activities that involved possible contact with faeces, more than half (84.9%) and 51.6% of mothers reported always washing hands with soap and water after defecation and cleaning child's anus after a child defecates respectively. This finding is higher than 52.5% and 53.9% of a self reported HWWS study in a rural setting in Nigeria,[13] and significantly higher than 26% and 19% and 1% and 13% observed among mothers in Bangladesh and Burkina Faso respectively[17,18]. After these activities, most mothers do not only consider their hands dirty but also foul smelling and so culturally seek to wash their hands with soap and water not only to make it clean but to also have a pleasant odour. The higher prevalence in this study may be explained by the urban setting of the study location with possible more health awareness and the formal education advantage enjoyed by all mothers compared to 17.6% without a formal education in the study in the rural community in Edo state.[13] A positive correlation between maternal education and practice of hand washing with soap has been reported.[13] The lower values reported for the Bangladesh and Burkina Faso studies were probably because the studies reported observed HWWS amongst the mothers compared to the self reported HWWS in both Nigerian studies.

However, most mothers in this study considered washing their hands with soap and water a waste of time after cleaning their babies with baby wipes, the currently available commercial paper, some of which are alcohol free, used for cleaning babies anus after defecation.

The erroneous belief is that wiping their hands with the 'wipes' is equivalent, if not better than HWWS even when water and soap are available. This trend, should however be discouraged, as this is not proven to successfully remove the infectious agents responsible for diarrhoeal diseases. Human faeces are the main source of diarrheal pathogens that cause shigellosis, typhoid enteritis, cholera, other common endemic gastro-enteric infections, and some respiratory infections. HWWS interrupts the transmission of these disease agents and can significantly reduce diarrhoea and respiratory infections, as well as skin infections and trachoma.[9]

In this study, mothers who delivered their babies in an orthodox setting significantly practiced good hand washing than those who delivered in a non orthodox setting. Majority of the mothers were delivered of their babies in an orthodox setting thus suggesting some form of hygiene education given to them during their contacts with health workers. This could have improved their hand washing practice. While habits are often learned at an early age, there are opportunities for change, especially at life-changing events. A key event for mothers is the birth of a baby. Many mothers report that hand hygiene did not become

important to them until a baby was born and that if midwives or others involved with peri-natal care recommended hand washing with soap, it would likely take hold.[9]

Point of receipt of immunization service also significantly affected practice of good hand washing. Mothers who immunized their children in the University of Uyo Teaching Hospital Immunization Clinic significantly practiced good hand washing than mothers at the Primary Health Centre. The clinic at the teaching hospital has sufficient manpower comprising of doctors (consultants and resident doctors), nurses, and community health officers in training in the hospital. The clinic serves as a training point for these health workers who run the child welfare/immunization clinic giving health education on a regular basis to the women as they present their children for immunization. This is in addition to the health education given by the nurses in the unit. This reinforced education of the mothers may explain this good practice compared to those in the primary health centre where the few primary health care workers may be overwhelmed by the work load with little time paid to health education of their clients.

Mothers with post secondary education practiced more good hand washing than those with secondary and primary education though this difference was not statistically significant. The finding contrast that reported in Edo State where increasing level of maternal education was significantly associated with better hand washing practice.[13] This may be due to the fact that every mother in this study had the basic Primary education needed to understand the benefits of hand washing with soap and water.

The care-giver, usually the mother, provides the child's 'hygiene environment'. Hand washing programs should therefore target the mothers, whose hand washing behaviour can have the largest impact on disease reduction in the children and the whole family.

Mothers without source of water in their residence, who presented their children to primary health care centres for immunization and who deliver in non orthodox settings were more likely to practice poor hand washing in the study. They should therefore be targeted for a more aggressive health education on hand washing with soap and water while still encouraging the others to make hand washing with soap and water a habit.

CONCLUSION

Health education campaigns on the benefits of good hand washing practice among mothers should be intensified. The provision of water to every home, a factor that promotes good hand washing should be a priority of government if the task of reducing child mortality is ever to be achieved.

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