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Study of Contributing Factors to Hygiene among Differently-Abled People in Kano State Rehabilitation Centre, Nigeria

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Abstract: ***Introduction: Differently-abled people may be particularly susceptible to Health hazard either as a direct consequence of their disability or due of lack awareness regarding personal and environmental hygiene. Objectives: This study compares the knowledge, attitude, and practice of hygiene among the disabled in Kano state Rehabilitation center. Methods: Cross sectional study design was used for this study. The sample size estimate of 8% margin of error, 95% confidence interval Z= 1.96, and proportion of disabled was set as 50% since no study on similar study on was conducted. Sample size using the formula*** $\frac{Z^2(PQ)}{d^2}$ ***was calculated as 150. And the sampling technique adopted was stratified random sampling (Equal allocation) and interview using a semi- structured questionnaire. Data consisted of knowledge about hygiene, personal hygiene characteristics, and Attitudes towards hygiene, were analyzed using Microsoft Excel and SPSS version 19.0. Statistical significance for all comparing groups was defined as a p-value less than 0.05. Results: A total of 121 of 150 questionnaires were completed and returned (response rate = 80.6%). About 73% of mean score for hygiene practice were the blind that perform most and also attitude with 88%. Multivariate test, Wilk'slamda is 0.00 (p-value < 0.05) we have significant multivariate effect for the combined dependent variables. As such the group differs on their response based on the dependent variables. Test of between-subject effects, indicate that Knowledge differentiate the group, (p-value = 0.009), attitude (p-value=0.00), practice (p-value=0.00) which are significantly different, as such the mean scores differs across the group of the Disabled. Post hoc test, suggest practice played much role than attitudes on their hygiene. The state government should give emphasis on their knowledge which significantly differ less among the differently-abled. Conclusion: Study findings indicates the need for more knowledge and improvement of attitudes of hygiene education in the rehabilitation center, and provide objective evidence that may guide the development of comprehensive health and hygiene intervention programs in Kano state rehabilitation centers. Successful implementation of these programs is likely to substantially attenuate the transmissible disease burden borne by differently- abled in the state.***

Keywords: Disabled, Hygiene practice, Knowledge, Attitudes, Rehabilitation center.

1. Introduction and Background

A large proportion of the world's illness and death is caused by communicable diseases and 62% and 31% of all deaths in Africa and Southeast Asia respectively, are caused by infectious disease.[1]It is especially notable in developing countries where acute respiratory and intestinal infections are the causes of morbidity and mortality among young children.[2]Inadequate sanitary conditions and poor hygiene practices play major roles in the increased burden of communicable disease within these developing countries. Promotion is to help people to understand and develop good hygiene practices, so as to prevent disease and promote positive attitudes towards cleanliness. Several community development activities can be used to achieve this goal, including education and learning programs, encouraging community management of environmental health facilities, and social mobilization and organization.

Beletsky, T. Ezer, et al. reported in 2013 that People with Disabilities constitute the "largest and most disadvantaged group" in the world. There is an implied negativity and fear about disability that colors each term describing people with challenges. During 2009, 22% of men and 23% of women in the UK reported a longstanding condition that limited activities.[3]Such disabilities can cause increased morbidity, mortality and healthcare need.[4,5]There is need to conduct this kind of study on disabled, especially physical ones, can increase a person's susceptibility to disease and maintaining appropriate levels of hygiene more difficult. For example, a physically-impaired person who moves by crawling runs a high risk of obtaining infections in their hands. The negative impact on health and hygiene of not washing ones hands at critical times is well recognized.[6]Availability of toilets especially designed for the differently-abled, safe drinking water goes a long way in restoring the self-esteem and confidence of these people. According to the last census in Nigeria, the total number of physically disabled Nigerians is about 900,000 persons out of 165,000,000.[7]

The Kano state government under the leadership of GovernorRabiu Musa Kwakwaso has decided to implement a Rehabilitation program for people with disability, those that are Blind, Deaf, Affected by leprosy and physically challenged (limps). The four groups are thought computer studies, handcrafts, trading, and others (meaning a profession outside the rehabilitation center) for duration of two years. Where the disabled selected are from the entire 44 local governments 2014 ministry for special duties kano state.[8]Previous hygiene studies have indicated that approximately 52% of students were classified as having adequate knowledge of proper hygiene. Most students reported hand washing before meals (99.0%), but only 36.2% reported using soap. Although 76.7% of students reported that washing hands after defecation was important, only 14.8% reported actually following this practice.[9] Also another studyindicates that those with proper hand washing practices are less likely to report gastrointestinal and respiratory symptoms.[10,11] Hand washing with soap has been reported to reduce diarrheal morbidity by 44% and respiratory infections by 23%.[1,12]

In addition to having proper resource and facilities, hygiene practices are highly influenced by Student's Knowledge and

Attitude towards Hygiene. In a study conducted in Senegal, reasons given for not washing hands included stubbornness (not wanting to follow what adults say), laziness, the rush to go to breaks, the time it takes away from playing, and the dirt and smell of the toilets.[13]Despite these negative attitudes towards hand washing, many children practice good hand washing behavior.[13]A study conducted by the United Nations Children's Fund (UNICEF) and the Ethiopian Ministry of Health found that study participants in rural Ethiopia had poor status regarding knowledge, attitudes, and practices (KAP) of hygiene.[11] Approximately 60% of children surveyed did not know about the possible transmission of diseases through human waste.[11]Simple hygienic measures such as washing hands with soap were poorly practiced, especially in rural areas.[11]

An integrated approach is required, linking prevention and rehabilitation with empowerment strategies and changes in attitudes of the Disabled. Hence the different groups are evaluated on their performance on response of hygiene practice, knowledge, and attitude. As such emphasis will be given on the group that performs least to improve their hygiene. Information from this study will serve as baseline data for future based hygiene intervention programs in the Rehabilitation centers.

2. Rationale of the study

The topic hygiene has been selected for the study because it is one of the commonest influence of reducing morbidity and mortality among differently abled people in Kano state, the study will help us to know the knowledge, attitudes, practice of hygiene of the Differently-abled (Deaf, Blind, people affected by leprosy and physically challenged).[14]

2.1 Objectives

This study compares the knowledge, attitude, and practice of hygiene among the disabled in Kano state Rehabilitation center. Extent to which proper knowledge of hygiene was associated with personal hygiene characteristics

2.2 Hypothesis

H_0: There is no difference in the knowledge, attitude, and practice of hygiene between the groups (Blind, Deaf, Physically challenged, People affected by leprosy).
H_1: There is difference between the groups.

3. Materials and Methods

3.1 Subjects

This cross-sectional epidemiologic study was conducted in Fagge local government Kano State, Nigeria from June 12 to July 5, 2014. Kano is located in the North West zone and is popularly known as center of commerce in Nigeria. It is located about 600 km from Abuja, the capital city of Nigeria. Nigeria has an estimated population of 165,000,000 with about 900, 000 being physically disabled and an area of 992 square kilometers with 61% living in rural settings (census 2006). The study was conducted at Kano state rehabilitation center, Fagge local government, a government-owned institution which provides free education and different types of profession to differently-abled.

The sample size estimate of 8% margin of error, 95% confidence interval Z= 1.96, and proportion of disabled was set as 50% since no study on similar study on was conducted. Thus n (sample size)=$\frac{Z^2(PQ)}{d^2}$ was calculated as 150. And the sampling technique adopted was stratified random sampling (Equal allocation), where $n_h = \frac{n}{l}$, h= 1,2,3,4 groups and l = 4 groups which implies 37 participants each blind, deaf person affected by leprosy and physically challenged. Based on the sampling frame for each group Simple random sampling (without replacement) was conducted to select 37 members each group. This cross-sectional study comprised of 121 Differently-abled people whom were present during the interview using a semi-structured questionnaire. The study population comprised of all differently-abled in the rehabilitation center. These were chosen because infectious diseases could affect them as a result of improper hygiene. People absent (N=90) during the survey period were excluded. The final sample size was 121 people (43 female and 78 male). Blind were 31, physically challenged were 30, person affected by leprosy were 32, Deaf were 28.

The study staff communicated the objectives of the study to the participants and participation was completely voluntary. Study participants provided oral consent prior to participating. Approval from The office of commissioner special duties to the state governor through the special adviser for Disabled was granted prior to the commencement of this study.

3.2 Instruments and Procedure

Study staff consisted of five research interviewers. Each person was interviewed using a structured questionnaire in a room specifically dedicated for this study. The questionnaire was initially drafted in English, translated to Hausa, and then pre-tested in Government school for Disabled, Tudun Maliki Kano state to assess the suitability with regards to duration, language appropriateness, content validity, and question comprehensibility. Approval of commencement of the study was from ministry of special duties Kano state.

3.3 Variable Specification

The questionnaire consisted of: demographic information, profession, gender, literacy (no, yes); and frequencies of bathing, washing feet/hair, brushing teeth, and changing clothes (every 1-7 days, 7-14 days, >14 day). Means of refuse disposal (waste bin, burring, burning and in drainage). They were asked as to whether their drinking water for the day prior to interview was boiled (no, yes) and about the type of Material used for anal cleansing (paper, leaf, stone, grass, water, nothing, other), bathing(soap, water only, other), and teeth cleaning (twigs, water only, other). Other questions included: if hands were washed during the day prior to interview (no, yes); reasons for washing hands (after defecation, before meals, after meals); materials used for hand washing(soap and water, water only); hand washing preference (before meals, after meals, don't know); and hand

washing importance (after defecation, before meals, after meals).

Knowledge about sanitation was also assessed. Disabled who answered 'yes' to all the following questions were classified as having adequate knowledge of proper hygiene and are given the highest score: if boiling water kills germs, if water containers need cleaning and covering, and if human feces contains germs.

Attitude towards hygiene was also assessed. If disability cannot prevent hygiene practice, drinking good water and sanitation improved health? Disabled who answer strongly agreed were classified as having best attitude of proper hygiene.

3.4 Data Analysis

Data were entered into Microsoft Excel 2010. Statistical analysis was done using SPSS (Version 19.0, SPSS Inc. Chicago, IL, USA). Frequency tables and charts were used to quantify the occurrence of hygiene practices. Mean scores were used to classify frequency distributions of disabled' attitudes and practices according to appropriate knowledge. Multivariate analysis was use to compares the knowledge, attitude, and practice of hygiene among the disabled in order to determine the associations. All reported p-values are two-tailed and statistical significance was set at 0.05.

4. Results

Table 1 shows the socio-demographic characteristics. Also from a total of 121 disabled (mean age= 23.2 years old), approximately 35.5% of them were females (mean age=22.4 years old) and 64.4% of them were males (mean age =24.9years old). Figure 1, approximately one-third of the disabled reported not bathing with soap (i.e. poor hygiene practice).

Similarly, approximately 9% (N=41), 2% (N=16),12% (N=29), and 21% (N=13) reported not brushing their teeth, washing their feet, washing or changing their clothes, and washing their hair for at least 14 days, respectively. Taking baths and washing hair were the least common hygiene practices. The vast majority of disabled (92%) reported using twigs to clean their teeth.

In table 2 for mean scores, physically challenge has a least score of 1.17 on knowledge and blind has the highest score of 3.52 on Attitude. In table 3, the multivariate test, the outcomes reported in the status box. By Wilks' lambda p-value which is 0.00 we have significant multivariate effect for the combined dependent variables, that is we accept our alternative hypothesis that the group differs based on the variables. Which implies that hygiene practice, knowledge and attitudes play a role in their hygiene. Since they differ, as such we look for were they differ in the group, that justifies the most important that variable that differentiate the group. That leads us to Post hoc analyses.

Table 4, gives a summary of the post hoc test, we can see hygiene practice in all possible combination of the groups, as such hygiene practice play much role than attitudes and knowledge. Emphasis should be on their knowledge which significantly differ less among the groups. Also people affected by leprosy have to be integrated on their knowledge, attitude and practice, because none of the variable differentiates the group.

5. Discussion

In this study of differently-abled, we assessed the knowledge, attitudes and practices of hygiene. Of the disabled surveyed, 41% were classified as having poor knowledge of hygiene. This knowledge is necessary for the practice of proper hygiene in the rehabilitation center. Only 14.8% of the disabled washed hands after defecation the day prior to the interview. We also found that out of the personal hygiene characteristics assessed, blind were having poor knowledge among the groups. Overall our findings are consistent with previous studies that have documented knowledge and practices of hygiene among school children in developing countries.[15,16]

Overall, the majority of disabled reported washing hands before meals. The percentages of disabled who reported the importance of and the preference for hand washing before eating were 99.7% and 98.8%, respectively. These high proportions are consistent with the high proportion of disabled who reported actually washing their hands before meals (99.0%).Notably, the self-reported frequency of hand washing before meals among disabled in our study is substantially higher than frequencies reported from studies of children in other countries. For instance, studies from the Philippines and Colombia indicated that 75.9% and46.9% of students, respectively, reported washing hands before meals[10]. The considerably higher frequency of hand washing before meals among disabled may be due, inpart, to the Nigeria cultural tradition and ceremonial practice of washing hands beforemeals[17] or the desire for clean, fresh hands before eating.[11] However, only 36.2% of disabled who washed their hands reported using soap. This is similar to the Philippines and Turkey studies where an average of 37.7% and 42.4% of children, respectively, washed their hands with soap.[16]

Invariable, almost 48 percent were not having proper knowledge on hygiene. To improve and increase their understanding in this concept, there is need for public health intervention plans like public health clubs and awareness programs.

Well-designed and well-located hand washing facilities and latrines that include adequate amounts of soap and water, are essential in promoting hygiene. If hygiene intervention programs implement these two important factors—education and resources—the needs of disabled can be better met and can thereby result in decreased risk of disease[18].

In conclusion, school rehabilitation center-based hygiene education is vital in order to decrease the rates of transmissible diseases.[15] Disabled if thought are very likely to adopt healthy behaviors at a younger age. They can also be agents of change by spreading what they have learned in school to their family and community members. Future studies regarding KAP should specifically assess the

attitudes that disabled have towards hygiene, availability of water and sanitation facilities at home and at school rehabilitation center, and the reasons behindhand washing. Enhanced, comprehensive knowledge about these issues should be used to improve low-cost but highly effective programs that will meaningfully attenuate the burden of transmissible disease among disabled in rural settings. The limitation of the study is that the questionnaire is not reliable as it was not adopted and was not properly drafted; also the required sample estimated was not covered.

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Table1: Demographics

Disability	N(Total=121)	%
Blind	31	25.6
Physically challenged	30	24.8
Person affected with leprosy	32	26.4
Deaf	28	23.1
Gender		
Male	78	64.4
Female	43	35.5
Blind literate		
Yes	26	21
No	5	4.1
Physically challenge		
Yes	16	13.2
No	14	11.6
Person affected by leprosy		
Yes	11	9
No	21	17.4
Deaf		
Yes	19	15.7
No	9	7

Table 2: Mean scores

Physically challenged	*Mean scores*			*Frequency*
	Attitudes	*Practice*	*knowledge*	
Blind	3.52	1.82	1.56	31
Physically challenged	2.33	1.32	1.17	30
Deaf	3.11	1.74	1.81	28
Person affected by leprosy	2.68	1.46	1.41	32

Table 3: Test of between-subject effects

Source Dependent variable	*Sig.*
Status mean score of hygiene practices	0.000
mean score of attitudes	0.000
mean score of knowledge	0.034

P-values < 0.05, all are significant

Table 4: Summary of post hoc analysis

	Blind	*Physically challenged*	*Deaf*	*Affected by leprosy*
Blind	-------	(A) , (B)	------	(A) (B)
Physically challenged		----------	(A) (B)	
Deaf		(C)	-----	(A)
Affected by leprosy				---------

P-values < 0.05 are significant
A – Hygiene practices scores
B – Attitudes scores
C – Knowledge scores

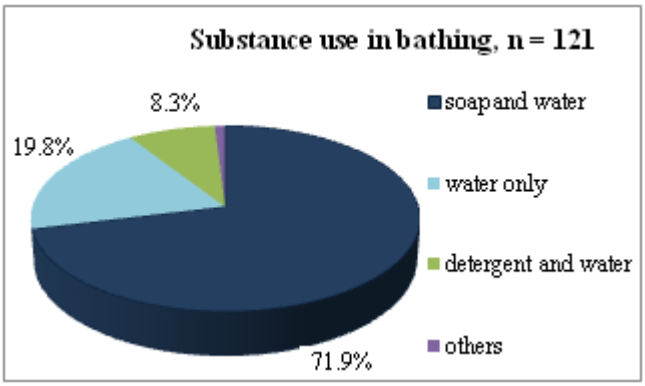

Figure 1: Substance use in bathing

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