ASSESSING THE CAPACITY OF COMMUNITY HEALTH WORKERS ON THE CURRENT MANAGEMENT OF CHILDHOOD DIARRHEA IN JIGAWA STATE, NIGERIA.

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Abstract

**Background**: Even though the lives of an estimated three quarters of a million children are being saved each year, over three million children are still dying from readily preventable diarrheal disease and this may partly be due to insufficient knowledge and skills by the healthcare provider to make diagnosis, provide appropriate care and take give major home key messages.

**Methods**: The study was descriptive cross sectional involving all the Primary Health Care centers in six LGAs of Jigawa State in January 2013. Two health workers from each PHC were assessed using a pre-test self administered questionnaire. Data was analyzed using SPSS 16.0.

**Results**: Among 335 interviewed Community health workers, 54.9% were CHOS/CHEWS, 22.1% JCHEWS, 5.7% nurses and others (EHA, CA etc) made up 17.3%. Correct definition, types and key messages of diarrhea was known by 50%. In practice 48% would give an antibiotic combination with ORS. 30% constituted Salt sugar Solution correctly and about 20% would add zinc tablet as an adjunct therapy. Across individuals educational cadre, there was no statistical difference in knowledge and practices in management of diarrhea except in classification of dehydration (p=0.00) where CHO/CHEWS performed better and composition of Low ORS (p=0.00) were nurses responded better.

**Conclusion**: The identified gap in this study among these healthcare providers in managing childhood diarrhea at the community is a clarion call for immediate action to improve their knowledge and practice capacity at all levels through series or training and continuous retraining.

**Key words**: Diarrhea, knowledge, practices, zinc Low osmolarity ORS, health workers

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Introduction

Even though the lives of an estimated three quarters of a million children are being saved each year, over three million children are still dying from readily preventable diarrheal disease. Integrated Management of Childhood Illnesses (IMCI) is a strategy formulated by the World Health organization (WHO) and United Nations Children's Fund (UNICEF) in 1996 that integrates all available measures for disease prevention and health problems during childhood, for early detection and effective treatment. This strategy is carried out in three ways through improving health workers performance for prevention and treatment of childhood disease such as diarrhea, malaria, pneumonia, organization and operation of health services and involvement of family and community care practices (C-IMCI).

Community health workers are the building block of any health system bringing health services to villages across developing countries and the backbone of the Primary Health Care system in Nigeria. Travis et al showed that the health system in many developing countries is too weak and fragile to scale up essential infant and childhood intervention. Various factors may be a challenge however one of the major challenges is the capacity of health care providers to appropriately provide these interventions. Today only 44% of children who have diarrhea receive appropriate assessment and management by a health care giver.

Diarrhoea which is defined as the passage of three or more loose or liquid stools in a 24 hour period is caused by viruses, bacteria, parasite and fungus with malnutrition and poor hygienic practices being risk factors for its development. In May 2004, WHO and UNICEF issued a joint statement that two life saving but simple interventions could decrease diarrhea associated death; zinc supplementation and Low Osmolarity ORS. ORT is a simple, cheap and effective method which can be easily taught by knowledgeable health workers to child caregivers. The previous standard ORS used has reduced mortality from diarrhea but not reduce the duration that children suffer from diarrhea resulting in mothers and caregivers using
Antibiotics and other antidiarrhea drugs. However with the introduction of the new low osmolarity ORS, the duration of loose stool decreases by and with zinc supplementation as an adjunct therapy it has been shown to decrease the severity and duration of the current episode of diarrhea and prevent reoccurrence in the next 2 to 3 months.3

In order to target mother’s confusion and lack of understanding about how to recognize diarrhea and its danger signs, the importance of ORT, crucial need for immediate oral fluid replacement with low osmolarity ORS and zinc tablets, correct preparation of home-made sugar salt solution, when to use it and how to use it and when to return when danger signs are lurking, she must come in contact with a community health worker who is equipped with this information.6 The correct knowledge and treatment of diarrhea is one of the most powerful tools to reduce mortality.

Over the years the WHO/UNICEF programs recognized that to improve management of diarrhea, health providers should be educated.1 However, a one time off training is not enough. Thus it is timely to assess capacity of community health workers on the current home management of childhood diseases.

Subjects and Methods:
This was a descriptive cross sectional study involving six LGA’s (Dutse, Gumel, Babura, Kafin Hausa, Miga and Buji) in Jigawa State and carried out in January 2013. Two health workers each from 201 facilities were assessed using a pre-tested self administered questionnaire. Jigawa is located in the North Western region of Nigeria. State projected population from 2006 census at an annual increase of 3% is 5,026,617 with the under five population of 1,005,323. It is a sahelian state with 27 LGAs and shares border with Niger Republic. According to NDHS 2008, the diarrhea prevalence is 34.9%. Statistical analysis was done using SPSS version 16.0. Pearson's chi square and Fischer's exact test was used to test association between categorical variables. Data was represented in tables as frequencies and percentages. Statistical significance was set at p<0.05.

Results
Of 402 health professionals, 335 completed the questionnaires (83.8%). Females were 89 and males 246 giving a F: M ratio of 1:2.7. Years of care of under fives ranged from 1 to 33 with a mean of 10.31± 6.48 years. One hundred and ninety one (57.0%) of them had been caring for under five for less than 10 years, while 144 (43.3%) more than 10 years. Senior Community health extension workers (CHEWs) and Community health Officers (CHOs) constituted 54.9%, Junior CHEW, 22.1%, nurses 5.7% and others like Clinical Assistants, Environmental health assisitants made up17.3% (Fig 1).

![Characteristics of Health Workers](image)

Fig1: Characteristics of health workers interviewed

Clinically defined diarrhea according to WHO of ≥ 3 or more liquid/loose watery stool in a 24 hour period was correct in 52.8% of the workers and incorrect in 46.6%. However, 57.6% were able to give the different types of diarrhoea as acute watery, acute bloody (dysentry) and persistent diarrhoea. Specific organisms such as viruses, bacteria, parasites and fungus were stated as causes of diarrhea in only 18.8% with 55.8% attributing causes to contaminations, poor hygienic practices and poor breastfeeding beliefs. However, 22.1% either did not know the causes or gave an incorrect answer (Table 1).

Two or more complications associated with diarrhea were correctly stated by 157 (46.9%) health professionals, 9% gave incorrect complications and 12.2% did not know any complication resulting from diarrhoea in under fives. In assessing dehydration, a major complication of diarrhea, only 23.3% correctly classified dehydration into no (or mild), some (or moderate) and severe dehydration with 40.3% not able to classify dehydration at all. The composition of new Low Osmolarity ORS is known by only 18 (5.4%) of the health workers. A significant number were able to give at least one correct take home key message on home management of diarrhea, 189 (56.4%) with 46 (13.7%) of them able to give two or more correct key messages.

Practices in managing diarrhea represented in Table 2 shows that 47.2% of the health workers would use antibiotics to treat diarrhea.
Among those using antibiotics metronidazole (41.1%) was the most common mentioned (not shown). Sixty percent and 63% of the health workers did not know the dose nor the duration of Zinc tablets to be used with only 23.6% and 20.6% knowing either the dose or duration of zinc use respectively. Correct zinc dosage and duration of intake for 10 days was seen in only 57 (17.1%).

Table 3 shows the relationship between the educational statuses of these health workers and their knowledge about childhood diarrhea. There was no statistical significant association between the individual’s current educational status and the definition of diarrhea (p=0.13), types of diarrhea (p=0.34), causes (p=0.07), complications (p=0.06), and number of key messages known (p=0.30). However, correct knowledge of composition of Low osmolarity ORS was highest among the nurses and this was of statistical significance ($\chi^2 = 143.42$, df=6, p=0.00) and more CHOs and senior CHEW were able to properly classify dehydration into one or more categories ($\chi^2 = 56.69$, df=6, p=0.00).

In table 4, irrespective of the educational status over 40% would give an antibiotic combination to treat diarrhea. More Nurses gave low osmolarity ORS and Zinc then CHOs and CHEWS, while the least group to give low osmolarity ORS and Zinc or Zinc tablets alone were the Junior CHEWs. No statistical significance was seen (p=0.14). No significant difference in practice of zinc tablets given in terms of dosage (p=0.09) or duration (p=0.06) and constitution of SSS by education (p=0.36).
Discussion

The result of this study indicates that community health workers in Jigawa state have identifiable gaps in their knowledge and skills in managing diarrhea in children less than five years. Nearly half (46.6%) of them may fail to recognize early, the episodes of diarrhea. Ande et al. in Oyo Nigeria among Village health workers noted that only 22% VHWs and 21% of TBAs also gave a correct account of the major way to recognize diarrhea.

Studies have shown that diarrhea is mainly caused by viruses and few non-invasive bacteria and treatment with fluids alone rather than medications would improve the outcome. 

The inability of the community health workers to identify that most childhood diarrheas are viral in nature is probably the reason why many are known to give antibiotics even when specific signs (bloody diarrhea) and systemic illness were not reported. This practice is clearly seen in the response of the participants in this study on how they treat diarrhea, with over 40% of them admitting to prescribing antibiotics along with ORS. A significant number these health workers use anti diarrheals such as diastop, loperamide and kaolin across all cadres of care (14.9%). These are contraindicated in children due to their toxicities.

Similarly, Okora and Jones reported in Nigeria that the prescribing patterns in childhood diarrhea revealed oral fluids (100%), antimicrobials (40.3%) anti-protozoals (24.6%) and anti-diarrhoeals. The duration of most diarrheas are mild self-limiting and this frequent use of antimicrobial would lead to increased cost, drug resistance and worsening of the diarrhea through antimicrobial side effect.
The WHO states that quality training of community health workers has the potential to accelerate uptake, ensure zinc is used correctly, increase Low ORS use, decrease unnecessary antibiotic use, increase referrals and thus decrease morbidity and mortality. Flores et al[15] showed that distance learning with tutoring improves some aspect of diarrhea case management in frontline health workers in Guatemala. Community health workers such as the JCHEW, CHEW, CHO and nurses are the frontline practitioners who come in contact with the caregivers and children on daily basis at the community level and need to receive periodic trainings and supervision on child hood illnesses like diarrhea.

**Conclusion:**
In order to achieve the Millennium development goals 4 and 6 by 2015, there is an urgent need to revitalize, maintain and enhance the skills of community-health workers in assessing and managing children with diarrhea through periodic re-fresher and update courses.

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**References**