

Comparison of knowledge on diarrheal disease management between two types of community-based distributors in Oyo State, Nigeria

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Abstract

Community-based distributors (CBDs) have been trained and utilized to promote a variety of health commodities. In addition, a variety of different types of community residents have been trained ranging from traditional birth attendants (TBAs) to patent medicine vendors. A training programme for CBD agents in the Akinyele Local Government Area of Oyo State, Nigeria, provided the opportunity to compare the knowledge of two different types of CBD agents, TBAs and volunteer village health workers (VHWs). Although VHWs were younger and better educated than the TBAs, the two groups had similar levels of knowledge about diarrhea recognition, cause and prevention. It was common for the respondents to confuse diarrhea and dehydration in their answers about signs (recognition) and prevention, showing that at least they had some perception that the two conditions were connected. Overall knowledge results showed some gaps that may likely be a natural result of knowledge decay. The major lesson learned is that

the type of CBD agent may not be as important as the fact that they receive follow-up after they have been trained.

Introduction

Community-based distribution (CBD) is a strategy that has been used to ensure that a variety of basic health commodities, services and skills reach the grassroots. Such health 'products' include Vitamin A (el Bushra *et al.*, 1992), ivermectin to control onchocerciasis (Amazigo *et al.*, 2002), family planning commodities (Beksinska *et al.*, 2000; Kaler and Watkins, 2001), home-made salt/sugar solution (SSS) for diarrheal diseases (Pugh, 1989), prepackaged antimalarial drugs (Brieger *et al.*, 2002/03) and iodine capsules (Peterson *et al.*, 1999), to name a few.

In addition to the variety of services provided, CBD workers themselves come in a variety of forms. Traditional birth attendants (TBAs), not surprisingly, have been involved in the distribution of family planning commodities (Rogers and Solomon, 1975), as have women traders in large markets (Webb *et al.*, 1991), youth peer educators (Brieger *et al.*, 2001) and female village counselors (Luck *et al.*, 2000). Village health workers (VHWs) have promoted SSS, antimalarial drugs and family planning (Kaseje *et al.*, 1987; Pugh, 1989; Brieger *et al.*, 2002/03). Patent medicine vendors have been involved in promoting prepackaged antimalarial drugs (Brieger *et al.*, 2002/03). Special purpose 'community-directed distributors' (CDDs) are a central part of ivermectin distribution for onchocerciasis control (Amazigo *et al.*, 2002).

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Table I. Demographic characteristics of respondents

Characteristic	Type of CBD		Fisher's exact <i>P</i> value
	TBA (%)	VHW (%)	
Sex			
female	28 (100)	16 (33)	<0.0001
male	0 (0)	33 (67)	
Education			
no formal	26 (93)	31 (63)	0.009
some	2 (7)	18 (37)	
Age (years)			
<50	7 (25)	28 (57)	0.006
≥50	21 (75)	21 (43)	

Table II. Knowledge indicators for CBDs

Knowledge about Diarrhea	Type of CBD		Fisher's exact <i>P</i> value
	TBA (%)	VHW (%)	
Cause			
correct, e.g. poor hygiene	18 (64)	34 (69)	0.80
incorrect	10 (36)	15 (31)	
Sign			
watery stool	6 (21)	11 (22)	
incorrect	22 (79)	38 (78)	
Prevention			
personal hygiene	2 (7)	5 (10)	0.48
incorrect	26 (93)	44 (90)	

This study looked at a CBD programme in the rural Akinyele Local Government Area (LGA) north of Ibadan, the Capital of Oyo State, Nigeria where the Department of Obstetrics and Gynecology of the University of Ibadan together with the State Ministry of Health had trained 173 CBD agents (Delano, 1990). (Sponsored by a grant from USAID through the Center for Population and Family at Columbia University and the Pathfinder Fund.) CBDs were selected by their respective village leaders using criteria that included maturity, permanent residence in the community and active engagement in a trade or job. A 3-week competency-based training programme was organized for the CBDs that included maternal health, family planning, care of the newborn and childhood illness management including oral rehydration therapy (ORT) for diarrheal diseases. ORT focused on home-made SSS. Formal post-evaluation had not taken place among these trainees and, therefore, the lead author decided to evaluate a component of the CBDs' duties, diarrheal disease management, as the basis for her MPH dissertation.

Methods

Five health centers within Akinyele LGA that served as bases for the CBD programme were chosen and all 73 communities served were visited. These communities were the home of 91 of the

original CBD trainees, and effort was made to locate and interview each CBD agent. A questionnaire was used to elicit information on CBD characteristics and their knowledge of diarrheal diseases. A limitation of the study was lack of access to any baseline or immediate post-training test of CBD knowledge.

Results

Of the expected 91 CBDs, 77 (84.6%) were still available and located for interview, comprising 28 (70%) of the original 40 TBAs and 49 (96.1%) of the original 51 VHWs. This difference was significant (Fisher's exact *P* value = 0.009). The main reason for dropping out was travel and migration, which affected five TBAs and one VHW. Loss of interest due to family problems or disagreements with the programme staff were reported by three TBAs and one VHW. Three TBAs dropped out because of ill health and one because she was taking care of her grandchild.

Some differences in demographic characteristics emerged between the two groups of respondents as seen in Table I. All TBAs were female, but only 16 (33%) of the VHWs were women. Most VHWs (57.1%) were below 50 years of age, while 75% of the TBAs were 50 years and older. Only two (7.2%) TBAs had any formal education compared with 36.7% of the VHWs.

Despite these demographic differences, the two groups showed similar levels of knowledge about diarrheal diseases (Table II). Eighteen (64%) TBAs mentioned correct causes of diarrheal disease including lack of personal hygiene, house flies, bad food and water, and dirty feeding utensils. Likewise, 34 (69%) of VHWs gave these answers. Incorrect responses included heat in the stomach and eating too many different things.

Similar proportions (21% of TBAs and 22% of VHWs) also gave a correct account of the major way to recognize diarrhea—watery stool. The most common responses (70%) were actually signs of dehydration, which result from diarrhea, including sunken eyes, becoming lean and weakness. Although many mentioned a correct cause of diarrheal disease, few listed a correct preventive measure. Only 7% of the TBAs and 10% of the VHWs said diarrhea could be prevented through personal hygiene. Instead, most respondents mentioned ways to manage episodes of diarrhea including SSS (18%), herbs (9%), going to the doctor (6%) and using Oralite (51%), a commercial oral rehydration solution.

Discussion

The first observation about CDB knowledge is their apparent confusion and conflation of the concepts of diarrhea and dehydration, and thus between the concepts of treatment and prevention of diarrhea. In a positive light these findings do show that the CBDs did remember quite a lot about diarrheal disease management, even if their responses to specific questions were not correct. The idea of prevention through treatment is common in many Nigerian communities where people use herbs both prophylactically and for treatment (Brieger *et al.*, 1996/97).

Other studies have shown that knowledge of VHWs deteriorates over time, but that those with more education retain more knowledge (Ryan *et al.*, 1990/91). One suspects that CBD agents in this study also lost some of their initial knowledge

about diarrheal diseases, especially when considering how few could name a preventive measure, but the more-educated VHWs in this case did not outperform the mainly illiterate TBAs.

In other studies of VHWs, attrition has been documented as a major problem, often attributed to poor levels of supervision and mobility of VHWs (Ewoigbokhan and Brieger, 1993/94). It was not possible to assess the role of supervision in CDB dropout, but the staff at the five health centers were quite familiar with the names and locations of all CBDs. Instead, the main reason for dropping out among these CBD agents was migration. In this case there was a lower dropout rate among TBAs. VHWs also displayed a lower tendency to drop out of a community-based antimalarial treatment programme in Nigeria than did patent medicine vendors (Brieger *et al.*, 2002/03)

In conclusion, type of CBD worker did not appear to influence their ability to retain knowledge about health conditions for which they were trained, although TBAs were more likely to drop out of the programme. Drawing on other experiences with community-based volunteers, one can suggest that with adequate training and follow-up a variety of agents should be recruited for and can function in delivering front-line care to remote rural populations in Africa.

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Received on July 24, 2000; accepted on December 16, 2002