

Original Article

Knowledge, Utilization, and Accessibility of Child Welfare Card among Caregivers in a Tertiary Center in South West Nigeria

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ABSTRACT

Background: The Child Welfare Card (CWC) contains the records of a child's immunization and information on the other aspects of the child's health, including growth curves and home treatment of diarrheal disease to mention a few. How easily retrievable these records are and what influence the cards have on parents/caregivers regarding the child's nurture are uncertain in our environment.

Aim: The present study was aimed at assessing the parents/caregivers' knowledge and utilization of CWCs as well as the health-providers' accessibility of the card in the hospital. **Method:** This study was a cross-sectional descriptive one that involved the parents/caregivers of children aged 60 months and below, attending the children's clinics and wards in a tertiary center. We collected the relevant information, including the sociodemographic data of the parents/caregivers, their knowledge, and assessed the utilization of CWC. The analysis of the categorical data was performed with the IBM Statistical Package for Social Sciences (S.P.S.S) version 23.0 for windows. *P* values < 0.05 were considered significant.

Results: Of the 377 parents/caregivers enrolled in the study, good knowledge of the contents of the CWC was demonstrated by 82 (21.8%) while 78 (20.7%) made the cards available to the health care providers. Eighty (21.2%) made adequate use of the cards at home. A greater number of parents/caregivers from the higher social class had good knowledge of the intervention contents of the CWC (*P* = 0.005). The accessibility of the cards to the health care-providers was significantly higher among the older parents/caregivers (*P* = 0.010), those with a good knowledge of CWC (*P* = 0.020) and parents/caregivers from higher social class (*P* = 0.001). Subjects with good knowledge were 2.4 times (OR = 2.4, 95% CI = 1.4-4.2) more likely to utilize the intervention contents in the CWC. **Conclusion:** The overall knowledge, utilization, and accessibility of the CWC were poor. Parents/caregivers with good knowledge were more likely to utilize the information on the CWC compared with participants with poor knowledge.

KEYWORDS: *Accessibility, child health record, child welfare card, immunization, knowledge, utilization*

INTRODUCTION

The Child Welfare Card (CWC), which is also called a home-based record, is the road to health chart and the growth chart card contains a child's health records. It is a simple but essential document for monitoring the child health care.^[1,2] The CWC contains the records of a child's vaccination and furnishes the health care providers with a point of care information

for an objective clinical decision. The card also serves as the reference material for child survival strategies for parents/caregivers. It is comprehensive and contains

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other vital information required for a safe childhood such as home management of diarrheal disease, preparation of the salt–sugar solution and oral rehydration solution, instructions on the administration of zinc tablets, and child weight history and growth patterns.^[2] The card also contains the details of adverse events following immunization (AEFI), details of significant illnesses of the child, and vaccination appointment visits. The card is usually issued to the mothers/caregivers at the postnatal wards or during the child's first immunization visit by the immunization record officers. The caregivers/parents are given routine instructions on how to keep the card safe. They also receive talks on the contents of the CWC. Besides, the caregivers are encouraged to bring the card at each visit to the hospital. The card is a home-based record kept with the mothers or the caregiver. During a clinic visit, the card accompanies the child. The contents of the card and its uses are discussed again with the mother and caregiver. Thus, the card is a visual demonstration of a child's health.^[3] A previous study^[1] reported that Nigeria has one of the lowest CWC holders in the world compared with the cardholders rates in the Chad Republic, Nepal and the war-torn Democratic Republic of Congo between 2003 and 2008.^[1] The 2013 Nigeria Demographic Health Survey (NDHS) revealed that only 19% of parents/caregivers had their children's immunization record handy when required at the health facility.^[4] Could this be the current trend in the health facilities or has there been a change in this figure following the 2013 NDHS health campaigns? The availability of the CWC and a good awareness of a child's vaccination status by parents/caregivers during hospital visits have been reported to be statistically significantly associated with improved childhood immunization status and child survival strategy.^[5]

Better accessibility, utilization, and knowledge of caregiver can reduce the missed opportunities for childhood immunization and enable the caregiver to provide essential care against the common causes of childhood morbidity and mortality.^[1,6] This study sought to determine the accessibility, utilization, and the knowledge of the parents and/or caregivers of CWC in a tertiary mission hospital in Ogbomoso, Southwestern Nigeria.

SUBJECTS AND METHODS

The study took place at the Bowen University Teaching Hospital (BUTH) in Ogbomoso, located in South West, Nigeria. Ethic approval was obtained on 30th July 2019. Ethical approval was obtained from the Institutional Research Ethics Review Committee with the approval

number BUTH/REC/-030; written informed consent was obtained from the parents and or caregivers. The study took place between August and November 2019. This study was a prospective cross-sectional study that involved the parents and/or caregivers of children aged from birth to 60 months utilizing a semi-structured questionnaire. The sample size was estimated using the formula for estimating the sample size in a population of fewer than 10,000 participants^[7] at the standard error of 5% and the prevalence of CWC utilization of 6.7%.^[1] Consecutive parents/caregivers who accessed care at the pediatric outpatient clinic and pediatric wards of BUTH were enrolled in the study. We excluded children whose caregivers declined consent, children older than five years, and children on immunization visit to the facility. The knowledge of parents/caregivers was assessed using an interview scheduled on Google form. In brief, the card is first withheld from the mother or caregiver, if she brought it to the hospital. However, if the card was not available, this was scored against the caregivers/mothers. The interviewer then asked the mother or caregiver to confirm/recall or deny the interventions in the card, which is divided into eight parts for this exercise. Good knowledge on the section of CWC was defined as the ability of the respondents to confirm/recall correctly at least four out of the eight segments of the CWC. Each correct answer was scored one point and zero for an incorrectly answered question or failure to recall or confirm the charts and images. We define utilization as the respondent's acknowledgement of the use of at least four of the eight interventions described in the CWC at home (Appendix I). A correctly answered question attracts a score of one while zero is scored for an unanswered question or upon failure to acknowledge the use of information or confirm the use of charts and images on the CWC. Accessibility was defined as the ability to produce the CWC upon request by the health care provider at the health facility. Data were entered into a Microsoft Access file and processed using the IBM Statistical Package for Social Sciences (S.P.S.S) version 23.0 for windows. Values were expressed as frequencies, means, and standard deviation. The Chi-square test or Fischer's exact test was used to summarize the categorical variables as appropriate. The odds ratio and 95% confidence interval were reported from a contingency table for analysis. The level of significance was set at $P < 0.05$. The social class of the respondents was determined using the Oyediji classification of social class.^[8] The mean of four scores (two for the father and two for the mother) to the nearest whole number was the social class assigned to the child.

RESULTS

Out of 401 child/parents/caregivers pair recruited into the study, 24 were excluded due to incomplete data giving a response rate of 94.0%

The child's parents/caregivers socio-demographic characteristics

Table 1 shows the sociodemographic details of the caregivers.

The mean ± SD age of the respondents was 32.8 ± 6.5 years. Twenty (5.3%) of the participants were fathers who brought their wards to the health facility alone compared with 169 (44.8%) mothers who accessed care during the study period. A total of 180 (47.7%) children were brought to the facility by both parents. An older sibling and a caregiver from an orphanage constituted 0.6%.

The preponderant social class of the caregivers using Oyediji's social class was social class III. Furthermore, 368 (97.6%) of the caregivers were in a married union, while 6 (1.6%) were single parents. The mean (±SD) age of the children whose parents participated in the study was 25 ± 0.5 months and the male: female ratio was 1.3:1.

The knowledge and utilization of child welfare card by the caregiver/parents and its accessibility by healthcare providers

Tables 2 and 3 show the knowledge and utilization of CWC by parents/caregivers and the accessibility of CWC.

Of the 377 child-caregiver pair enrolled in the study, 353 (93.6%) admitted to having a CWC. However, only

6 (1.9%) of the caregivers could confirm all the eight sections of the CWC (details as shown in Table 2); while 82 (21.8%) had an overall good knowledge of the CWC by affirming more than three out of the eight sections of the CWC.

For the section on the growth chart in the CWC, more than half, 203 (53.8%) could not confirm any of the three growth patterns on the chart. Only 53 (14.1%) were able to affirm all the three growth patterns when shown the graphs (i.e. good, dangerous, and very dangerous growth patterns) on the CWC.

Only 78 (20.7%) of the caregivers who brought their wards to the health facility made their CWCs accessible to the health care workers.

Association between sociodemographic factors and caregiver/parents' knowledge, utilization, and accessibility of child welfare card

Tables 4–6 which represent the above show that a greater number of the higher social class parents and caregivers compared with the number of lower social class mothers and caregivers had good knowledge

Table 1: Sociodemographic status of respondents

Variable		Frequency	Percentage
Child's age in months	Birth-12	131	34.7
	13-24	105	27.9
	25-36	60	15.9
	37-48	40	10.6
	49-60	41	10.9
Child's gender	Male	215	57.0
	Female	162	43.0
Primary caregiver's age in years	15-25	40	10.6
	26-35	225	59.7
	36-45	101	26.8
	46-55	11	2.9
Primary caregiver's social class	Class I	30	8.0
	Class II	103	27.3
	Class III	130	34.5
	Class IV	99	26.3
	Class V	15	4.0

The mean of four scores (two for the father and two for the mother) to the nearest whole number was the social class assigned to the child

Table 2: Knowledge of caregiver/parents of child welfare card

Identification of sections on the child welfare card	Positive Response	Percentage
Does it contain child's personal information	230	61.0
Does it contain information on immunization	188	49.9
Does it contain information on adverse events following immunization	17	4.5
Does it contain information on the growth pattern	49	13.0
Does it contain information on the treatment of diarrheal disease	13	3.4
Does it contain information on the preparation of oral rehydration solution	16	4.2
Does it contain information on the preparation of salt sugar solution	3	0.8
Does it contain information on the wellbeing of other siblings	2	0.5
Identification of sections on specific practices		
Does it contain zinc tablets for specific age	61	16.2
How to feed your child when he or she has diarrhea*	140	37.1
The preferred choice of feeds in a child with diarrhea	130	34.5
How to properly breastfeed a child	232	61.5
All sections of the immunization card	3	0.8
Overall good knowledge of the immunization card	82	21.8

*There were 377 children, 215 (57.0%) were males while 162 (43.0%) were females

of the intervention contents of the card ($P = 0.005$). Similarly, a greater number of the higher social class parents and caregivers compared with the number of lower social class mothers or parents and caregivers better utilised the intervention contents of the card ($P = 0.050$). A strong association exists between good knowledge of the welfare card and its utilization. Good knowledge of the interventions in the CWC

by the parents and caregivers was associated with a 2.4 fold increase in the odds of utilization of the information in the CWC (OR = 2.4, 95% CI = 1.4-4.2).

The proportion of mothers of children whose CWC was easily accessible was higher among the older mothers when compared with the younger mothers ($P = 0.010$).

DISCUSSION

Child welfare card is a point of care information resource that is child-centered and parent/caregiver-focused for informed evaluation by health workers. The CWC is an inexpensive, easily storable, and readily retrievable receptacle of the child's vital health information. Its maximal utilization is associated with enhanced immunization coverage, better utilization of homemade interventions, early detection of disease, and stimulation of parent/caregivers' pro-activeness and partnership in child's care.

This study showed that only 21.8% of parents/caregivers in the study population had good knowledge of the intervention contents of the CWCs. The result showed that the parents/caregivers' lack of understanding of the importance of CWCs for preventive and promotive health and prompt identification of deviation from the norm of their wards. Their poor attitude toward bringing this all-important card to the health center for access by the health workers is disappointing. Although some studies^[1,9,10] had explored the caregivers' knowledge of CWC, our findings in the current survey support the previous reports by Donald and Kibel^[11] in the early

Table 3: Utilization of the Child Welfare Card by the Caregivers

The utilization of immunization card	Positive Response	Percentage
Have you ever used the prescription for Zinc tablet on the immunization card to treat diarrhea?	55	14.6
Have you ever used the information in the immunization card to know your child's growth pattern	95	25.2
Have used immunization card to know your child's developmental stages	118	31.3
Have you ever use the immunization card to know the next immunization Schedules	79	20.7
Have you ever use the immunization card to prepare ORS for the treatment of diarrheal diseases	16	4.2
Have you ever used the immunization card to decide feeding of your child with diarrheal disease	23	6.0
Overall adequate utilization of immunization card	80	21.2

Table 4: Association between the sociodemographic factors and knowledge of child welfare card

		Good knowledge	Poor knowledge	X ²	P
Primary Caregiver	Father	3 (15.0)	17 (85.0)	9.188	0.071
	Mother	28 (16.6)	141 (83.4)		
Age of parents/ Caregivers in years	Both parents	48 (26.7)	132 (73.3)	4.435	0.213
	Other	3 (37.5)	5 (62.5)		
social class	15-25	5 (12.5)	35 (87.5)	14.659	0.005*
	26-35	47 (20.9)	178 (79.1.1)		
	36-45	26 (25.7)	75 (74.3)		
	46-55	4 (36.4)	7 (63.6)		
	Class I	6 (20.0)	24 (80)		
Parents/ caregivers	Class II	35 (34.0)	68 (66.0)		
	Class III	27 (20.8)	103 (79.2)		
	Class IV	13 (13.1)	86 (86.9)		
	Class V	1 (6.7)	14 (93.3)		

P-value calculated using Fishers exact <0.05 is considered significant

Table 5: Association between the sociodemographic factors, knowledge, and utilization of child welfare card

		Adequate utilization	Poor utilization	X ²	P
Primary Caregiver	Father	6 (30.0)	14 (70.0)	2.217	0.848
	Mother	37 (21.9)	132 (78.1)		
	Both				
Age of primary caregiver in Years	parents	36 (20.0)	144 (80.0)	4.435	0.213
	Other	1 (12.5)	7 (87.5)		
	15-25	6 (15.0)	34 (85.0)		
Primary caregivers social class	26-35	50 (22.2)	175 (77.8)	14.659	0.050*
	36-45	21 (20.8)	80 (79.2)		
	46-55	4 (36.4)	7 (63.6)		
Knowledge of Immunization	Class I	12 (40.0)	24 (60.0)	10.474	0.002*
	Class II	24 (23.3)	79 (76.7)		
	Class III	20 (15.4)	110 (84.6)		
	Class IV	20 (20.2)	79 (79.8)		
	Class V	3 (27.3)	8 (72.7)		
	Good	28 (35.0)	52 (65.0)		
	Poor	54 (18.2)	243 (81.8)		

P-value calculated using Fishers exact <0.05 is considered significant

works on this subject matter and are in harmony with the findings of David Brown^[1] that show poor knowledge and underutilization of the health card.

A CWC holder prevalence of 20.7% in the present survey was comparable to the 2012 report of 18–26% by David W Brown among caregivers in Nigeria. The documented prevalence is similar to the figures reported from Chad (25%), Democratic Republic of Congo (24%), and Ethiopia (29%) in sub-Saharan African by David W. Brown^[1] but lower than what obtains in other parts of the developing nations. The reason for this comparability in prevalence among the countries in sub-Saharan Africa is unclear, but the lack of political will, economic instability, poor health financing by their governments may be responsible. The poor knowledge of caregivers/parents and the low rate of CWC accessibility at the clinic visits, on the other hand, maybe consequent on the inadequate knowledge, poor communication skill and the indifference attitude

of the healthcare provider to the all-important card. A multicenter study by Tarawa *et al.*^[12] involving 300 respondents of the three-tiers of the health system in the peri-urban area of Pretoria in South Africa reported that 43% of the health care providers never explained the significance of the CWC to the caregivers/parents at contacts. The same study also found that seven out of every 10 parents/caregivers who failed to bring their card at health visits were attributable to the refusal of the healthcare provider to ask for the card at previous clinic visits. Harrison *et al.*^[13] in a cross-sectional study of 150 mothers and 17 health workers in Cape Town also reported that a significant proportion of the healthcare providers could not interpret the weight for age chart accurately. It is, therefore, imperative that the healthcare provider obtains substantial training and oversight for effective communication skill to parents/caregiver and continual medical update to improve the knowledge about optimal CWC utilization by the end-users.

Table 6: Association between the sociodemographic factors, knowledge utilization and accessibility of child welfare card

		Accessible	Not accessible	X ²	p
Primary Caregiver	father	8 (40.0)	12 (60.0)	8.775	0.085
	mother	40 (23.7)	129 (76.3)		
	both parents	30 (16.7)	150 (83.3)		
	other	0 (0.0)	8 (100.0)		
Age of primary caregiver in years	15-25	7 (17.5)	33 (82.5)	10.898	0.010*
	26-35	38 (16.9)	187 (83.1)		
	36-45	27 (26.7)	74 (73.3)		
	46-55	6 (54.5)	5 (45.5)		
	Class I	11 (36.7)	19 (63.3)		
Class II	38 (36.9)	65 (63.1)			
Class III	34 (26.2)	96 (73.8)			
Class IV	13 (13.1)	86 (86.9)			
Class V	4 (26.7)	11 (73.3)			
Knowledge of immunization card	Good	30 (36.6)	52 (63.4)	6.026	0.020*
	Poor	70 (23.7)	225 (76.3)		
Utilization of immunization card	Adequate	61 (20.5)	236 (79.5)	0.019	1.000
	Poor	17 (21.3)	63 (78.8)		

P-value calculated using Fishers exact <0.05 is considered significant.

In the early days, vaccination cards were of good quality and durable paper, covered with bright prints. Besides, the mothers kept the cards in protective, tough polythene bags against water and wear and tear. These days, even though the cards contain a lot more information, they are so poorly produced that they hardly can last for longer than two years before they fall into tatters. The prints are rarely legible, and no durable polythene bags are issued anymore to keep the all-important vaccine record cards. These factors may contribute to the poor observation of this study, and they call for an urgent response to increasing card uptake/utilization, stir up health workers and caregivers on the numerous benefits of this simple but yet valuable tool in the care of African children. The present study's accessibility of CWC to the health workers was 20.7% lower than the 41.5% obtained in Agra district in India.^[14] The higher access rate of 41.5% in Agra could be explained by the population-based study design where CWCs were most likely within the caregivers' reach compared with the current hospital-based survey where the participants were either

on follow up or consisted of agitated parents/caregivers of sick children who were more likely to forget their cards at home.^[14]

The present study found that the increased knowledge of the CWC among parents/caregivers of higher social classes (who also had a higher level of education) ($P = 0.005$) is comparable to the finding in Uganda of significant association of post-secondary school education status with knowledge and immunization uptake.^[15]

For harnessing the oral rehydration solution (ORS) information in the CWC to treat their wards in the course of diarrheal disease, only 4.2% [Table 3] of the study participants utilized the information on the CWC. This was much lower than the average reported ORS coverage/preparation rate of 29% in African countries by the World Health Organization (WHO) in 2003; and also lower than the 33% coverage reported in South Asia.^[16,17] The disparity in practices may be due to the out of pocket procurement of this item or inaccessibility

to the pre-packaged ORS in rural communities in Africa as well as poor health-seeking behaviors. Maternal utilization of oral rehydration solution remains the single most effective intervention in preventing death from acute diarrheal diseases all over the world.^[16] Perhaps, the provision of ORS free of charge to parents/caregivers may scale up its utilization in this part of the world.

Caregivers/parents' knowledge and administration of zinc therapy in the present survey were 16.2% and 14.6%, respectively. This was higher than the 1% reported in Egypt but lower than the 23% observed in Bangladesh.^[6] The major factors identified to be responsible for the poor utilization of some of the contents of the CWC including zinc administration are lack of information and poor motivation of caregivers and parents in child's health care.^[18] Caregiver administered zinc reduced the frequency, duration, and severity and prevented both acute and chronic diarrheal disease.^[19-21] A randomized control trial of 30,000 children aged 1 to 5 years with the acute diarrheal disease who used zinc supplement found a 34.0% reduction in the acute diarrheal episodes in subjects given zinc tablets.^[20] The higher rate of utilization of zinc in the Bangladesh study could be a result of the education of the caregivers/parents and the free supply of zinc to the community from the epicenter for the study.

With regard to the road to health chart, the growth chart was poorly interpreted by the caregivers/parents in the current survey similar to other sections of the CWC as reported above. More than half of 203 (53.8%) could not identify any of the three growth patterns on the chart. Only 53 (14.1%) were able to identify all the three growth patterns (i.e. good, dangerous and very dangerous growth patterns) on the road to health chart which is lower than the 18.2% reported by Debuo *et al.*^[22] in Ghana. The current survey also found an alarming lower percentage of participants who could identify a dangerous/static growth pattern compared with the 34% reported in the study from Ghana.

The differences in the observed responses between the current study and those reported by Debuo *et al.*^[22] could be the consequence of the different instruments used for evaluation as three against four growth patterns were assessed in the present versus the study by Debuo *et al.*^[22] Perhaps the reported identification of growth patterns in the Ghanaian study may be a true reflection of the higher knowledge and improved utilization of health record card information demonstrated by the study participants (caregivers) who enrolled in a community nutrition programme for at least one year.^[22]

The socio-demographics of low participation of fathers in the present study may be due to the cultural belief that the nurture of a child is solely a woman's responsibility. The failure of getting men involved in child's care need to be revisited if there would be an improvement in the overall wellbeing of children in our environment.

Caregiver/parents with higher income were more accessible and better utilized the CWC compared with those with lower income. These findings were in tandem with the reports from Ghana and Ethiopia.^[6,22]

A wide gap exists in the knowledge, accessibility, and utilization of CWCs by the parents/caregivers which needs urgent attention. There is a need for training and monitoring health care worker's ability to improve parents/caregivers' understanding of the CWC. Health care workers should stress the advantages of retaining this card and that it is mandatory to bring the card to the health care system at all visits to optimize the CWC. The policymakers should be educated regarding the importance of the vaccination cards so that they ensure that the cards are of good quality and durable papers with clear prints. Besides, each patient should receive a made-to-fit tough polythene bag to protect them against water. It also suggested that the parents/caregivers of filled cards should receive some incentives from the policymaker.

The healthcare providers involved with vaccination should carefully educate mothers regarding the different parts of the child health cards at intervals and make them participate in filling the cards for more lucid understanding. They should be taught the importance of proper weight recording and charting and their importance to the health of the growing child.

Finally, healthcare workers must not only educate but are required to see the CWCs of every child whenever they access to care at health facilities to ensure that the health records in the cards are diligently filled in. The information contained therein could improve the health information sharing and ensure the administration of all vaccines as and when due to avoid missed opportunities.

In conclusion, the study shows that most parents presenting in the children's clinic, emergency units and on the wards for admission in our facility do not have adequate knowledge of the information contained in the CWCs and do not bring the cards along with the children to access care. Policymakers and the government should note that the CWCs are relevant health documents and like certificates should be made of much better materials and better prints so that the parents may appreciate their use and keep them for a long time in order to facilitate the health of their wards.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Ethical approval

This case report was approved by the Bowen University Teaching Hospital Health Research Ethics Committee (Approval No. BUTH/REC-030).

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Conflicts of interest

There are no conflicts of interest.

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