Awareness, Perception to Immunisation Reminders and Recall among Caregivers of Infants in Abakaliki, Southeast Nigeria

Abstract

Background: Effective vaccination communication with parents is critical in efforts to overcome barriers to childhood vaccination, tackle vaccine hesitancy and improve vaccination coverage. Health workers should be able to provide information to caregivers and support them in decision making about vaccinating their children. Limited information exists regarding the awareness, perceptions to childhood immunisation reminders and recall system in Abakaliki. This study therefore assessed the awareness, perceptions of caregivers to childhood immunisation reminders and recall system in improving immunisation coverage in Abakaliki.

Materials and Methods: A descriptive analytical study design comparing two large health facilities (Mile-Four and St.Vincent Hospitals) in rural areas of Ebonyi State was used for the survey. Sample size was determined using the formula for comparing two proportions. Data were collected using semi-structured interviewer administered questionnaire from 145 caregiver-child pair from each group. Statistical Package for Social Science (SPSS) version 22 was used for analysis. Ethical approval was obtained from the Research and Ethics Committee (REC) of the Federal Teaching Hospital Abakaliki (FETHA), Nigeria.

Results: The mean age of respondents in Mile-Four and St.Vincent hospitals were 26.6 ±4.9 years and 27.1±4.2 years respectively. Higher proportion of caregivers in Mile-Four group (18.6%) than in St.Vincent group (14.5%) had ever heard of immunisation reminders and recalls prior to this study. Similarly, only 8.3% of caregivers in Mile-Four and 4.8% in St.Vincent had ever been reminded and/or recalled on the course of their children's immunisation uptake. A comparable proportion of respondents in Mile-Four (93.1%) and St.Vincent (94.5%) perceived reminders and recalls very important. There was significant relationship between respondent's marital and educational status and positive perception about immunisation reminders and recalls in Mile-Four and respondent's age and marital status and positive perception about immunisation reminders and recalls in St.Vincent ($p<0.05$).

Conclusion: Respondents' awareness was low but positive perception to reminders and recall was found. It is pertinent for health policy makers and programme managers to understand these factors when implementing immunisation communication system.

Keywords: Awareness, perception, phone reminders and recall, immunisation uptake, Abakaliki

Introduction:

Poor compliance to immunisation schedules and completion of recommended vaccinations limit the effectiveness of vaccination[1]. Globally, about 22 million infants are not fully immunised with routine vaccines and more than 1.5 million children less than five years of age die from vaccine preventable diseases[2] Immunisation reminder and recall systems are

cost-effective methods whereby infants are reminded of future immunisation appointments or those who had come for vaccination but fail to continue or come for subsequent vaccinations are identified and contacted to come to the immunisation clinic or physician's office for its completion. They are effective in improving adherence to recommended immunisation schedules[3-7] However, caregivers' level of awareness, perception to this system in the study area is not known. Therefore this study assessed the level of awareness, perception to immunisation reminders and recalls in Abakaliki.

Materials and Methods

A descriptive analytical study design comparing two large health facilities (Mile-Four and St.Vincent Hospitals) in Abakaliki was used for the survey. The study population comprised mothers/caregivers accessing childhood immunisation services at those facilities. Sample size was determined using the formula for comparing two proportions[8,9]. Consent was obtained from respondents after which data were collected using semi-structured interviewer administered questionnaire from 145 caregiver-child pair from each group selected using systematic random sampling technique. Statistical Package for Social Science (SPSS) version 22 was used for analysis. Chi-squared test was used for association with significance level set at $p< 0.05$ and confidence level at 95%. Associations between socio-demographic variables and immunisation reminders and recall awareness, perception were determined.

Ethical approval was obtained from the Research and Ethics Committee (REC) of the Federal Teaching Hospital Abakaliki (FETHA), Ebonyi State, Nigeria. Permission was also obtained from the management of both Mile-four and St.Vincent hospitals. Informed consent was obtained from the parents/caregivers after full explanation of purpose of the study to them. Only those parents/caregivers who gave their consent by signing the informed consent form participated in the study.

Results

The mean age of respondents in Mile-Four and St.Vincent hospitals were 26.6 ±4.9 years and 27.1±4.2 years respectively. Table 2 showed that higher proportion of caregivers in Mile-Four group (18.6%) than in St.Vincent group (14.5%) had ever heard of immunisation reminders and recalls prior to this study. The difference in their proportion was not statistically significant ($p=0.34$). Similarly, only 8.3% of caregivers in Mile-Four and 4.8% in St.Vincent had ever been reminded and/or recalled on the course of their children's immunisation uptake. The proportions who had ever been reminded of or recalled in the two groups showed no significant difference ($p=0.23$).

Most of the caregivers perceived the clinic environment, long waiting times and health worker attitudes as barriers to receiving vaccination information. Table 3 showed that comparable proportion of respondents in Mile-Four (93.1%) and St.Vincent (94.5%) perceived reminders very important/necessary, while 93.1% (Mile-Four group) and 89.7% (St.Vincent group) perceived recalls very necessary. There was no significant difference in their perception ($p>0.05$).

There was significant relationship between respondent's marital, educational status and positive perception about immunisation reminders and recalls in Mile-Four and respondent's age, marital status and positive perception about immunisation reminders and recalls in St.Vincent.

Table 1: Socio-demographic characteristics of respondents in the study and control groups

Variables	Mile-Four (n=145) Freq. (%)	St.Vincent (n=145) Freq. (%)	χ^2	p-value
Sex				
Male	5 (3.4)	4 (2.8)	**FT**	0.73
Female	140 (96.6)	141 (97.2)		
Age group (years)				
15-19	11 (7.6)	9 (6.2)	6.38	0.16
20-24	50 (34.5)	37 (25.5)		
25-29	48 (33.1)	68 (46.9)		
30-39	36 (24.8)	31 (21.4)		
Marital status				
Married	137 (94.5)	134 (92.4)	2.44	0.69
Single	8 (5.5)	11 (7.5)		
Education				
Primary	10 (6.8)	17 (11.7)	3.67	0.15
Secondary	88 (60.7)	93 (64.1)		
Tertiary	47 (32.4)	35 (24.1)		
Employment				
Paid employment	25 (17.2)	21 (14.5)	2.75	0.25
Self employment	56 (38.6)	70 (48.3)		
Unemployed	64 (44.1)	54 (37.2)		
Religion				
Christianity	142 (97.9)	143 (98.6)	**FT**	1.00
Others	3 (2.1)	2 (1.4)		

FT= Fisher's exact test

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Table 2: Respondents' awareness and usage of immunisation reminders and recalls

Variables	Mile-four group (n=145) Freq. (%)	St.Vincent group (n=145) Freq. (%)	χ^2	(p-value)
Ever heard of reminders and recalls				
Yes	27 (18.6)	21 (14.5)	0.89	0.34
No	118 (81.4)	124 (85.5)		
Ever been reminded or recalled by health worker				
Yes	12 (8.3)	7 (4.8)	1.40	0.23
No	133 (91.7)	138 (95.2)		

Table 3: Respondents' perception to immunisation reminders and recalls

Variables	Mile-Four group (n=145 Freq. (%) Yes	St. Vincent group (n=145) Freq. (%) Yes	χ^2 (p-value)
Perception to Immunisation reminders			
Necessary	135 (93.1)	137 (94.5)	0.23 (0.62)
Not necessary	10 (6.9)	8 (5.5)	
Perception to Immunisation Recalls			
Necessary	135 (93.1)	130 (89.7)	1.09 (0.29)
Not necessary	10 (6.9)	15 (10.3)	

Table 4: Within group relationship between socio-demographics and perception to reminders and recalls in both groups.

Variable	Mile-four group (n=145) Perception to reminders and recalls				St.Vinxcent group (n=145) Perception to reminders and recalls			
	Necessary Freq. (%)	Not necessary Freq. (%)	Total	χ^2 (p-value)	Necessary Freq. (%)	Not necessary Freq. (%)	Total	χ^2 (p-value)
Gender								
Male	5 (100.0)	0 (0.0)	5	**FT** (1.00)	8 (100.0)	0	8	**FT** (1.00)
Female	130(92.9)	10 (7.1)	140		121(88.3)	16 (11.7)	137	
Age group (yrs)								
15-19	9 (81.8)	2(18.2)	11	6.95	5 (55.5)	4 (44.5)	9	9.84

				(0.07)				(0.02)*
20-24	49 (94.2)	3 (5.8)	52		31 (83.8)	6 (16.2)	37	
25-29	46 (95.8)	2 (4.2)	48		56(82.4)	12 (17.6)	68	
30-39	31 (86.1)	5 (13.9)	36		22 (70.9)	9 (29.1)	31	
Marital status								
Single	5(62.5)	3 (37.5)	8	14.64(0.01)*	14 (63.6)	8 (36.4)	22	14.30(<0.01)*
Married	130(94.9)	7 (5.1)	137		111(90.2)	12 (9.8)	123	
Educational status								
Primary	7 (70.0)	3 (30.0)	10	7.35 (0.02)*	10 (71.4)	4 (28.6)	14	3.63 (0.13)
Secondary	80 (90.9)	8 (9.1)	88		72(88.9)	9 (11.1)	81	
Tertiary	41 (87.2)	6 (12.8)	47		43 (86.0)	7 (14.0)	50	
Employment status								
Paid employment	21 (84.0)	4 (16.0)	25	4.28 (0.10)	37 (88.1)	5 (11.9)	42	3.16 (0.20)
Self employed	49 (87.5)	7 (12.5)	56		30(75.0)	10 (25.0)	40	
Unemployed	61 (95.3)	3 (4.7)	64		57(90.5)	6 (9.5)	63	
Religion								
Christianity	132(92.9)	10 (7.1)	142	**FT** (1.00)	27(98.5)	16(100.0)	286	**FT** (1.00)
Others	3 (100.0)	0 (0.0)	3		4 (1.5)	0 (0.0)	4	

In Table 4 above: the response was analysed using the perception question-"what do you think about parents/caregivers being reminded of their children's immunisation appointments before the date"?

Discussion

Higher proportion of caregivers in Mile-Four group than in St.Vincent group had ever heard of immunisation reminders and recalls prior to this study. Similarly, lower proportion of caregivers in Mile-Four and in St.Vincent had ever been reminded and/or recalled on the course of their children's immunisation uptake for improved immunisation coverage. This finding perhaps may have contributed to the large proportion of missed immunisations in the study groups[10].

This finding is higher than that reported in Ibadan, Nigeria where only 3.9% had ever heard of immunisation reminder and recall and 1.5% had ever received one[11]. Comparably a higher proportion of female caregivers in the Mile-Four group and St.Vincent group were aware of immunisation reminders and recalls than the male caregivers. The difference in the awareness of this reminders and recalls between the male and female caregivers may be due to the fact that women are mostly involved in immunisation of their children and are such more concerned with information regarding childhood immunisation[10]. The higher level of awareness among the female caregivers would invariably lead to improved childhood

immunisation[10]. It is however lower than the findings in Lagos University Teaching Hospital (LUTH), Nigeria where 43% had ever received a health-related reminder from their global system for mobile communication. (GSM) provider while 52% had ever received one from an individual/organisation providing medical services[10]. That may be due to the fact that Lagos is a more cosmopolitan city than Abakaliki with higher literacy level. It may also be explained by the fact that there are many other awareness programmes through use of electronic media in Lagos.

In a study by UNICEF, about ninety five percent (95.6%) of the respondents believed that adherence to immunisation schedule is important. Despite large proportion of respondents (60.9%) being of the opinion that mothers should not forget their children's immunisation appointments, significantly high proportion (92.8%) still believed it is important that parents are reminded of their children immunisation before the appointment day. Almost all the caregivers (98.7%) perceived immunisation reminders helpful in adhering to their children immunisation schedules[12]. The perception of the mothers in that study demonstrated their support for childhood immunisation because over half of them were of the opinion that mothers should not forget their children immunisation appointment days. Despite that, they still supported the use of immunisation reminder and recall. Sixty seven percent preferred telephone reminders to SMS and 69% perceived reminders to be very beneficial[10].

In this study, comparable proportion of the respondents perceived immunisation reminders and recalls necessary. The respondents believed that immunisation reminders and recalls are veritable tools that would help caregivers to remember appointment date of their children, thus improving immunisation coverage. There was significant relationship between respondent's marital, educational status and positive perception about immunisation reminders and recalls in Mile-Four and also between respondent's age, marital status and positive perception about immunisation reminders and recalls in St.Vincent. The married state of caregivers appeared to be a promoter of immunisation uptake in this study. This is because married couples are much more concerned about immunisation of their children than the single or social mother. These findings are comparable to a study in Ibadan were 92.8% mothers believed that it is important that parents be reminded of their children's immunisation before the appointment day[13] and reports by UNICEF where almost all the mothers (98.7%) perceived immunisation reminders helpful to mothers in adhering to their children's immunisation schedules[12]. This is believed to be due to the increasing quest for higher education and enlightenment on the importance of childhood immunisation among

158 women in the area and repeated immunisation campaign by government agencies and non-
159 governmental organisations even in the rural areas of the state.
160 It is however higher than the finding from Lagos where 69% perceived reminders to be very
161 beneficial[10] and that in Kansas, USA where 35% of respondents perceived cell phone use
162 among their patients necessary[14]. It is expected that higher proportion of respondents in these
163 Lagos and Kansas studies would perceive immunisation reminders and recall very important
164 owing to high level of literacy and awareness of importance of immunisation reminders and
165 recalls when compared with the findings of this present study in Abakaliki where literacy
166 level and awareness are lower. The way immunisation reminders and recalls are perceived by
167 caregivers affects the outcome of immunisation uptake[10].

168 **Conclusion**

169 There was higher awareness of immunisation reminders and recall in Mile-Four than
170 St.Vincent. Comparable proportion of caregivers in both groups perceived immunisation
171 reminders and recalls as necessary. It is pertinent for health policy makers and programme
172 managers to understand these factors when implementing immunisation communication
173 system.
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