



Acceptability of the Use of Reminder/Recall in Vaccination Services among Clients and Service Providers in Enugu, Nigeria

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Abstract

In Nigeria, although immunization coverages are slowly but steadily improving, proportion of fully immunize children at one year of age is still low and drop-out rates are high. In order to obtain the full benefit of immunization, children must not only receive all the needed vaccines but also must receive them in a timely manner. This has necessitated the use of reminder/recall services to enhance full compliance to appointments in some parts of the world. To consider its use in Nigeria, this study set out to assess the views of, perceptions of, and acceptability to mothers/caregivers and immunization service providers regarding immunization appointment reminders/recall services in Enugu, Nigeria. The results will provide information to guide evidence-base policy formulations to improve immunization coverage and child health in Nigeria.

Keywords: Reminder/recall; Immunization; Children; Appointment; Caregivers

Introduction

In Nigeria, although immunization coverages are slowly but steadily improving, proportion of fully immunize children at one year of age is still low and drop-out rates are high [1]. Delayed immunization is also common among immunized children in Nigeria [2]. In order to obtain the full benefit of immunization, children must not only receive all the needed vaccines but also must receive them in a timely manner. This has necessitated the use of reminder/recall services to enhance compliance to appointments and improve immunization coverage rates in some parts of the world [3].

Client reminder and recall systems are used in childhood immunization services to remind mothers/caregivers that vaccinations are due (reminders) or late (recall). Reminders and recalls differ in content and are delivered by various methods (e.g., telephone, letter, postcard, text message). Reminder and recall messages can be tailored for individual

clients and could include educational messages about the importance of vaccination [4]. While reminder systems track future appointments, recall systems track missed appointments. Combination of reminder and recall systems is a very effective method of ensuring optimal vaccination rates in children. In a study by Adedokun et al, over three-quarter of the children (76.3%) were not completely immunized [5]. In Nigeria 37% of 12-23 month old children were partially immunized in 2016/2017 while 23% are fully immunized. Minimizing the proportion of partially immunized children will definitely improve the proportion of fully immunized children tremendously and reminder-recall systems are likely to improve vaccination coverage if used effectively [6,7].

To consider its use in Nigeria, this study set out to assess the views of, perceptions of, and acceptability to mothers/caregivers and immunization service providers regarding immunization appointment reminders/recall services in

Enugu, Nigeria. The results will provide information to guide evidence-base policy formulations to improve immunization coverage and child health in Nigeria.

Methods

It was an observational cross-sectional study.

Data was obtained by use of client interviewer-administered and provider self-administered questionnaires in five selected health facilities in Enugu metropolis. Trained interviewers administered the client questionnaires to mothers/caregivers presenting at the immunization clinics in the selected facilities. Questionnaires were administered and returned same day. On the other hand, providers' questionnaires were self-administered by the immunization staff in the study facilities. All consenting consecutive caregivers participated in the study which lasted three months.

Data entry was in Microsoft excel and GraphPad Prism version 7 was used for data analysis. Ethical approval was obtained from University of Nigeria Health Research Ethics Committee. Results are presented in tables and prose.

Results

A total of 286 caregivers and 45 service providers from 5 health facilities that provide immunization services in Enugu urban were interviewed.

Clients' Data

Eighty-eight percent of respondents were aged 20-39 years, 7% were less than 20 years while 5% were aged 40-49 years. None was older than 49 years. Ninety-two percent of respondents had secondary or tertiary education and 95% were of the Christian religion (Table 1). Those who could read constituted 97% and respondents who had a phone and could make use of it were 97%. Of the remaining 3% (8) without a phone, 37.5% of them had access to a phone through which they could be reached such as their spouse. Sixty percent of the mothers could use the internet and majority (77%) had two or more children. Twenty-seven percent had missed appointments out of which 72% missed once and 14% missed twice (Table 1). On reasons for missed appointments, 25% forgot, 28% were busy and 34% were sick. Majority (80%) agreed with the idea of using reminder/recall services and 89% preferred reminder method to the recall method.

Variable	Frequency	%	Variable	Frequency	%
Age(yrs) n=283			Ever missed appt n=275		
<20	20	7	Yes	75	27
20-29	131	46	No	200	73
30-39	119	42	If yes, how many? n=65		
40-49	13	5	Once	47	72
>49	0	0	Twice	9	14
Education n=269			≥thrice	6	9
no formal	2	1	Can't remember	3	5
Primary	20	7	Reasons for missed appt n=53		
Secondary	110	41	Forgot	18	34
Tertiary	137	51	Busy	15	28
Occupation n=282			Sick	18	34
Housewife	33	12	Can't remember	2	4
civil servant	90	32	Agree with reminder/recal n=285		
selfemploye/business	113	40	Yes	229	80
Student	46	16	No	49	17
Religion n=285			Not sure	7	2
Christian	276	97	Which you prefer n=241		
Moslem	9	3	reminder	214	89
Can read? N=285			recall	18	7

Yes	271	95		None	6	2
No	14	5		Not sure	3	1
Can use phone n=286				Type of reminder preferred n=242		
Yes	277	97		SMS	174	72
No	9	3		Calls	57	24
Have phone n=285				E-mails	2	1
Yes	277	97		Letters	6	2
No	8	3		Postcards	3	1
Can use internet n=277				How many reminders n=237		
Yes	166	60		Once	121	51
No	111	40		Twice	95	40
No of alive children n=277				≥3times	21	9
1	64	23		When to send? n=240		
2	80	29		1week before	104	43
3	67	24		2days before	86	36
4	41	15		1day before	46	19
≥5	25	9		1day after	4	2

Table 1: Characteristics of clients.

SMS was preferred by 72% while 24% preferred phone calls. On number of reminders per appointment, majority preferred once (51%) or twice (40%) before appointment day and reminders should occur one week (43%), two days (36%) and 1 day (19%) before; only 2% preferred recall one day after appointed day.

Contingency cross tabulation analysis showed that educational status was significantly associated with choice of type of reminder/recall ($p=0.0023$) and ability to read ($p<0.0001$) See Tables 2a and 2b.

Education/ reminder type	Primary	Secondary	Tertiary	Total	chi square value (df)	p value
SMS	3	63	96	162		
Calls	10	23	23	56	20.45 (6)	0.0023
Total	13	86	119	218		

Table 2a: Client: type of reminder preferred vs educational status.

Education/ reading status	Nil/Primary	Secondary/ Tertiary	Total	chi square value (df)	p value
Yes	15	245	260		
No	7	2	9	60.06 (4)	<0.0001
Total	22	247	269		

Table 2b: Client: Can read vs educational status.

Service Providers' Data

There were 45 respondents and majorities were in the 20-39 age brackets (66%). They were mainly nurses (68%), all females, with >5yrs work experience (80%). Majority agreed that clients miss appointments (98%). Their opinion on frequency of missed appointments is shown on Table 3.

All respondents saw the need for reminder/recall services (100%) and 80% preferred reminder to recall type while 18% advocated for use of both methods. Out of 93 responses (more than one option by some respondents) 78% preferred SMS, 11% was for calls and 9% for post cards. All the facilities had immunization registers, which could be used for tracking of clients.

Variable	Frequency	%	Variable	Frequency	%
Age(yrs) n=44			Which form to adopt? n=45		
<20	6	14	Reminder	36	80
20-29	15	34	Recall	1	2
30-39	14	32	Both	8	18
40-49	9	20	Which method to use? n=93*		
>49	0	0	SMS	73	78
Profession n=44			Call	10	11
Nurse	30	68	email	1	1
CHO	3	7	letters	1	1
CHEW	9	20	Postcards	8	9
Doctor	1	2	Have facility tracking system? n=45		
Pharm/Tech	1	2	Yes	42	93
Gender n=45			No	2	4
Male	0	0	Not sure	1	2
Female	45	100	Have Imm register? n=45		
Years of practice n=45			Yes	45	100
<5yrs	9	20	No	0	0
5-10yrs	22	49	Is reminder/recall feasible? n=45		
>10yrs	14	31	Yes	34	76
Do clients miss appt? n=45			No	2	4
Yes	44	98	Not sure	9	20
No	1	2	Challenges*		
How frequent? n=44			Understaffing	7	5
Not so frequent	17	39	Staff training	5	4
Fairly frequent	18	41	Funding	72	54
Frequent	9	20	Equipment/supplies	7	5
Very frequent	0	0	Airtime	24	18
need for reminder/recall? n=45			Network service	15	11
Yes	45	100	Poor availability	3	2
No	0	0			
Not sure	0	0	<i>*more than one option</i>		

Table 3: Characteristics of provider responders.

While 76% of providers felt reminder/recall was feasible in Nigeria, 20% were not sure and 4% felt it was not feasible.

In their opinion, chief among the challenges to implementation of the intervention was funding (54%) followed by airtime (18%) and network (11%) availability.

Other Challenges

Comments by the immunization service providers include lack of training for staff, strike and vaccine stock-out, phone availability, illiteracy, poor staff commitment to duty.

Their suggestions include

Provision of separate tracking register outside immunization register, close supervision of tracking systems, addition of phone calls to SMS to reach the illiterate clients, use of town criers, staff training/motivation, Government/facility management to provide phone for calls/SMS to be sent to mothers.

Discussion

Both clients and providers were studied for a more comprehensive and balanced outcomes. While many researchers have focused on clients [8-12], few have studied immunization service providers [13]. Most client respondents were young, literate and educated up to secondary level of education. This implies that the population represented in this study are likely to communicate effectively with the service providers through common technological platforms that may be used for reminder-recall messages. Almost all the respondents had a phone through which they could be reached, again showing that this population has the necessary basic requirements to deploy the RR strategy since calls, SMS and emails could all be accessed via mobile phones. Since more than two-thirds of the mothers could make use of internet facility, email would also be feasible in this population.

Of the more than a quarter that had missed immunization appointments in the past, a quarter of them was because they forgot while another quarter were busy. This again highlights the importance of RR systems. It would have been used to remind those who forgot and possibly persuade those who were "busy" to go for their appointments. These would have averted the missed appointments. This in turn would reduce the number of unimmunized and under immunized children, thereby increasing the immunization coverage to reduce morbidity and mortality.

Conclusion

The need for reminder/recall services was widely accepted by the client and provider study population. A good number of clients miss appointments for which reminders could prevent. Majority in the study population already had phone access. Providers are very willing to offer these services. It is feasible if minimum funding/motivation training and supervision are provided for service providers. Minimum resources channeled towards this intervention are likely to yield much benefit in terms of improved immunization coverage, morbidity and mortality reduction among Nigerian children. Adequate monitoring is also necessary.

The governments, agencies, organizations and hospital management are therefore called upon to give attention to

this aspect of immunization program.

There is need also to carry out an interventional study, not only in urban but also in rural populations to further provide additional data for strategic policy making.

Conflict of Interest: None

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