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An Evaluation of Knowledge and Attitude towards Routine Immunization among Caregivers/Mothers of Under-Five Years Children in Gwagwalada Area Council Abuja-FCT

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Abstract: Background: Immunization is one of the most important Public Health Interventions, its full potential is yet to be reached. The World Health Organization (WHO) has defined immunization as the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. The role of these vaccines is to help in stimulating the body's own immune system to protect the person against subsequent infection or disease. Immunization could be routine or supplemental. **Methodology**: A descriptive cross-sectional study was employed and a facility-based cluster sampling technique was conducted, using a 25-item questionnaire that was modified and adopted by the researcher. Caregivers with at least one under-five child were targeted. Data collected over a 4 week period was analyzed using SPSS version 21. A total of 170 respondents gave informed consent and participated in the study. **Results**: Approximately 54.1% have good knowledge of routine immunization. Also 96% was revealed to have good attitude towards routine immunization. Immunization Age and level of education of caregiver was found to be significantly associated with knowledge (P-value<0.05). None of the socio-demographic characteristics have a significant association with attitude (p- value>0.05). However there is a significant association between attitude and knowledge (P-value< 0.05). **Conclusion**: It is therefore suggested that continuous health education advocacies by health workers on benefits of routine immunization to aid community mobilization and participation are measures to improve knowledge, attitude of mothers towards routine immunization.
Keywords: Caregivers, childhood, immunization, vaccine, disease.

Introduction

The World Health Organization (WHO) has defined immunization as the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. The role of these vaccines is to help in stimulating the body's own immune system to protect the person against subsequent infection or disease [1]. Immunization could therefore be seen to depict the ability to develop immunity. Immunization is believed to be the most successful and cost-effective public health intervention of the 20th century in terms of number of deaths prevented per year [2]. Routine immunization refers to the nationally scheduled regular administration of vaccine dosages to infants at specified ages. Children are usually taken to the health facility by their caregivers to receive age-appropriate doses of vaccines. In most developing countries, this is only done on specific days of the week to reduce wastage of the vaccines [3]. The main aim of routine immunization is to deliver a complete number of doses of potent vaccines in a timely, safe and effective way to all children and women [4], ultimately inducing immunity against targeted diseases [5].

Supplemental immunization (immunization campaign) is organized occasionally by governments for the purposes of catch-up immunization, and to either eradicate/eliminate disease in order to avert epidemics [1]. Childhood immunization has been a great concern of the WHO and the organization considers it as very important [6], the Expanded Programme on Immunization (EPI) was established to fight against six vaccine preventable diseases which are measles, diphtheria, tuberculosis, poliomyelitis, tetanus and pertussis [7]. The program aims at reducing morbidity and mortality associated with not immunizing the children [8]. Although immunization is one of the most important Public Health Interventions, its full potential was yet to be reached [1]. When immunization rates are high, pathogens are less likely to be carried and transmitted from person to person [1].

Declines in vaccination rates allow diseases to emerge in the population again. In Nigeria in 2001, unfounded fears of the polio vaccine led to a drop in vaccination rates and re-emergence of infection, and the spread of polio to ten other countries [9]. In response to challenges in global immunization, WHO and the United Nations International Children's Emergency Fund (UNICEF) set up the Global Immunization Vision and Strategy (GIVS) in 2003 [10]. The chief goal of GIVS is primarily to reduce illness and death due to vaccine-preventable diseases by at least two-thirds by 2015 or earlier.

The Task Force on Immunization in Africa (TFI) established goals aimed to ensure that the immunization performance of the African Region caught up with other regions' performance. In Nigeria, according to the National Immunization Policy of the National Primary Health Care Development Agency, Immunization Schedule is designed to include all children 0-1 year who shall receive one dose of (Bacille-Calmette Guerin) BCG against tuberculosis, one dose of Yellow Fever vaccine, 3 doses of Diphtheria, Pertussis, Tetanus (DPT), 3 doses of *Haemophilus influenza* (Hib) vaccines, 3 doses of Hepatitis B vaccines 4 doses of (Oral Poliomyelitis Vaccine) OPV and one dose of Measles vaccine before the age of one and Vitamin A at 9 months and 15 months of age [11].

In addition, parental knowledge and attitude to childhood immunization have been reported by researchers to play a key role in immunization coverage [12]. In developing nations where illiteracy level is still on the high side, immunization coverage has been documented to be significantly affected by parental knowledge and attitude on childhood immunization [13]. Even in a population where high immunization coverage is reported; an assessment of maternal knowledge and attitude on childhood immunization is believed to improve service delivery and further facilitates coverage [14].

Methodology

Descriptive cross-sectional study was employed in this study. The study was conducted in Gwagwalada in Gwagwalada Area Council, Abuja-FCT. The study population includes caregivers of under-five children who visit the various Primary Health Clinics (PHCs) in Gwagwalada town, all caregivers of under five children who consented to participate in the study were interviewed using a semi-structured questionnaire administered by two research assistant to assess the knowledge and attitude of caregivers of under-five towards routine immunization services in Gwagwalada.

Language interpreters were employed in cases of language barriers and approval was obtained from the department of Community Medicine, College of Health Sciences, University of Abuja and university of Abuja teaching hospital for research approval. Data collected were analyzed using SPSS version 21 software version, knowledge score was assessed ('yes' or 'no') used in the assessment and a score of 1 was allotted for any correctly answered question.

The scoring system used classified the caregivers into 3 groups-good knowledge (≥ 60%), fair knowledge (50-59%) and poor knowledge (≤50%). Likert scale analysis was employed in the assessment of attitude. It involves allotment of scores 1-5 from" strongly disagree" (1), disagree, indifferent, agree and strongly agree for all the positive attitude test questions; and 5-1 for all the negative attitude test questions.

Attitude score was also computed by classifying the caregivers as either 'good attitude' (for those that scored 60% and above) or 'bad attitude' (for those that scored less than 60%) in the attitude test questions.

The socio-demographic characteristics were cross-tabulated against their respective frequencies and chi-square analysis done to determine their P-values. A P-value < 0.05 is considered statically significant. Other relevant findings were summarized and displayed in appropriate tables and charts.

Results

Socio-demographics of Respondents

Out of 175 (one hundred and seventy five) semi-structured questionnaire administered, 170 (one hundred and seventy) with valid response was obtained representing 97% response rate.

Table 1. Socio-demographics of respondents

Socio-demographic variables	
Age (in years)	
15-19	4(2.4)
20-24	33(19.4)
25-29	61(35.8)
30-34	38(22.4)
35-39	29(17.1)
40-44	5(2.9)
Total	**170(100)**
Marital status	
Single	5(2.9)
Married	161(94.7)
Divorced	2(1.2)
Widowed	2(1.2)
Total	170(100)
Religion	
Christianity	107(52.9)
Islam	63(37.1)
Total	**170(100)**
Level of caregivers' education	
Illiterate	2(1.2)
Primary	27(15.9)
Secondary	106(62.4)
Tertiary	35(20.6)
Total	170(100)
Category of caregivers' occupation	
Unskilled	126(74.1)
Skilled	38(22.4)
Professional	5(2.9)
Others	1(0.6)
Total	170(100)
Mean age =29.09 Standard deviation=5.5 Modal age=29	

Table 2. Assessment of knowledge of respondents

	Yes, n(%)
Heard about immunization?	170(100)
Routine immunization is scheduled according to age of child?	167(98.2)
Infant's immunization begins just after birth?	137(80.6)
Are there alternative ways of protecting infants from VPDs?	51(30)
Some vaccine preventable diseases in Nigeria	
Measles	150(88.2)
Poliomyelitis	153(90.0)
Tetanus	124(72.9)
Tuberculosis	110(64.7)
Pneumonia	93(54.7)
HIV	29(17.1)
Malaria	102(60.0)
Diarrhea	98(57.6)
Yellow fever	135(79.4)

Table 3. Cumulative assessment of knowledge of respondents

Knowledge of respondents	N (%)
Poor	10(5.9)
Fair	68(40)
Good	92(54.1)
Total	**170**

It revealed that 92 out of 170(54.1%) respondents showed good knowledge of routine immunization.

Table 4. Association between sociodemographic characteristics of respondents and knowledge towards routine immunization

Characteristics	Knowledge of respondents			Chi-square	P-value
	Good (n= 92)	Fair (n= 68)	Poor (n= 10)		
Caregiver's age(yrs.)					
15-19	2(50%)	0(0)	2(50%)	294.581	0.009*
20-24	9(27.3%)	20(60.6%)	4(12.1%)		
25-29	29(50.9%)	25(43.9%)	3(5.3%)		
30-34	25(65.8%)	12(31.6%)	1(2.6%)		
35-39	24(72.7%)	9 (27.3%)	0(0)		
40-44					
Marital status					
Single	0(0)	1(20%)	4(80%)	21.447	0.873
Married	10(6.2%)	64(39.8%)	87(54.0%)		
Divorced	0(0)	1(50%)	1(50%)		
Widowed	0(0)	2(100%)	0(0)		
Religion					
Christianity	72(67.3%)	30(28%)	5(4.7%)	26.162	0.004*
Islam	20(33.3%)	38(63.3%)	5(8.3%)		
Caregivers' education					
Illiterate	0(0)	1(50%)	1(50%)	65.057	0.0001*
Primary	4(14.8%)	20(74.1%)	3(11.1%)		
Secondary	60(56.6%)	42(39.6%)	4(3.8%)		
Tertiary	28(80%)	5(14.3%)	2(5.7%)		

Caregivers' occupation					
Unskilled	62(49.2%)	58(46.0%)	6(4.8%)	34.412	0.265
Skilled	25(65.8%)	9(23.7%)	4(10.5%)		
Professional	4 (80%)	1(20%)	0(0)		
Others	1 (100%)	0(0)	0(0)		
***p <0.05**					

Table 5. Distribution of source of information on routine immunization

Source of information	**n (%)**
Health professional	147(86.5)
Television	55(32.4)
Radio	107(62.9)
Friend	70(41.2)
School	30(17.6)
Others	10(5.9)
Total	**170(100)**

Majority of the caregivers got information on routine immunization from the health professionals.

Assessment of Attitude of Routine Immunization among Caregivers

Table 6. Likert scale analysis of attitude of respondents

Characteristics	**Strongly agree n (%)**	**Agree n (%)**	**Indifferent n (%)**	**Disagree n (%)**	**Strongly disagree n (%)**	**Mean**
Positive attitude	**(5)**	**(4)**	**(3)**	**(2)**	**(1)**	
Vaccines are important for child survival	136(80)	27(15.9)	3(1.8)	4(2.4)	0(0)	4.74
Immunization prevents diseases	114(67.1)	45(26.5)	3(1.8)	2(1.2)	6(3.5)	4.52
Negative attitude	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	
Immunization only important for diseases that are not serious	0(0)	7(4.1)	9(5.3)	107(62.9)	47(27.6)	4.14
Vaccination always have serious side effects	5(2.9)	9(5.3)	14(8.2)	72(42.4)	70(41.2)	3.55
Vaccination have no use	1(0.6)	4(2.4)	2(1.2)	47(27.6)	116(68.2)	4.58
Vaccination makes child sick	3(18)	14(8.2)	40(23.5)	45(26.5)	68(40.0)	3.94
Vaccination causes child death	0(0)	2(1.2)	10(5.9)	43(25.3)	115(67.6)	4.65
Attitude of healthcare provider is always negative	4(2.4)	9(5.3)	6(3.5)	73(42.9)	78(45.9)	4.25
Overall mean	**4.29**					

It revealed that there is a strong positive cumulative attitude of caregivers of under-five towards routine immunization in Gwagwalada (overall mean=4.29)

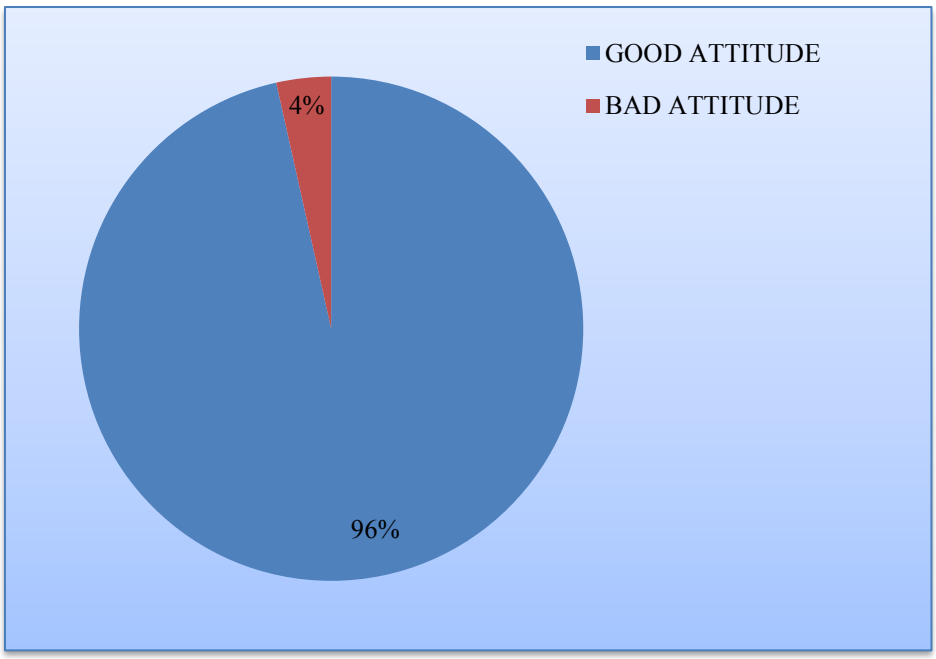

Figure 1. A chart showing cumulative attitude score among respondent

(96%) of respondents were found to have good attitude towards routine immunization 6(4%) have bad attitude.

Table 7. Association between socio-demographic characteristics of respondents and attitude towards routine immunization

Characteristics	Attitude of respondents		Chi-square	P-value
	Good (n=164)	Bad (n=6)		
Caregiver's age (yrs.)				
15-19	3(75%)	1(25%)	25.204	0.395
20-24	31(93.9%)	2(6.1%)		
25-29	59(96.7%)	2(3.3%)		
30-34	37(97.4%)	1(2.6%)		
35-39	29(100%)	0(0%)		
40-44	5(100%)	0(0)		
Marital status				
Single	5(100%)	0(0)	0.348	0.951
Married	155(96.3%)	6(3.7%)		
Divorced	2(50%)	0(0)		
Widowed	2(50%)	0(0)		
Religion				
Christianity	104(97.2%)	3(2.8%)	0.447	0.504
Islam	60(95.2%)	3(4.8%)		
Caregivers' education				
Illiterate	2(100%)	0(0)	2.565	0.464
Primary	25(92.6%)	2(7.4%)		
Secondary	102(96.2%)	4(3.8%)		
Tertiary	35(100%)	0(0)		
Caregivers' occupation				
Unskilled	122(84.9%)	4(15.1%)	0.602	0.896
Skilled	36(94.7%)	2(5.3%)		
Professional	5(100%)	0(0)		
Others	1(100%)	0(0)		

Table 8. Association between knowledge and attitude of respondents towards routine immunization

Knowledge of respondents	Attitude of respondents		Chi-square	P-value
	Good	Bad	10	0.0001*
Good	9	2		
Fair	6	3		
Poor	9	1		
Total	**24**	**6**		

Discussion

In the current study, majority of the caregivers are between the ages of 25-29 years and are married. This age group is usually the major reproductive age group in Nigeria. Similar findings were also reported by some authors [16]. Most of the respondents have at least secondary education with about one-fifth having tertiary level of education. This significant impact of maternal education on knowledge, perception and practice of immunization has also been observed by some authors [16], similarly noted that mothers with formal education were more likely to be aware of childhood immunization compared to those who had no formal education. The skilled worker or professional were significantly more likely to take their children to health centers for immunization at the appropriate age than traders and house wives. However, this finding may have been confounded by literacy or awareness level. It would be expected that the house wife and the trader would have more time to take their children to immunization centers for immunization compared to their skilled or professional counterparts. This is because the skilled and professional mothers would need to obtain permission to be absent from work before she is able to go and immunize her child. However, they may be more aware of the importance of immunization.

Knowledge of caregivers on routine immunization cumulative knowledge assessment revealed an overall good Knowledge rating among the sampled women (54.1%) on routine immunization. These findings were also reported in some studies [16]. Age, religion and level of education of the caregiver were found to be significantly associated with how knowledgeable caregivers were on routine immunization and VPDs ($P<0.005$). Attitude of caregivers on routine immunization shows a very strong positive attitude towards routine immunization (overall mean=4.29). Majority were found to have good attitude towards immunization. This finding is similar to reports by some authors [16]. However, there is a significant association between knowledge and attitude of caregivers statistically ($p <0.005$). This findings are similar to some reports by many studies [15, 16]. Some studies reported different findings [14, 15] where good knowledge was not associated with good attitude.

Conclusion

There is an overall high level of knowledge and good attitude towards routine immunization services among caregivers of under-five in Gwagwalada. This Knowledge was found to be significantly affected by age and level of education of caregiver. There was a significant statistical association between knowledge with attitude of caregivers towards routine immunization.

Recommendation

There is need for increase in advocacies by the health workers on purpose and need for immunizing children against preventable deadly diseases. These advocacies could also be directed not only to the mothers alone but also to the fathers thereby increasing men's participation as well as an increased rural community mobilization and participation in immunization services. Gwagwalada local government authority should consider measures such as female education and adult literacy programmes as ways of improving immunization practices among mothers/caregivers. Further research should be directed at better understanding of perception and beliefs of mothers on childhood immunization in Gwagwalada Area council.

Conflicts of interest: There are no conflicts of interest.

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