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# Knowledge, attitude, perceptions of adult males towards childhood immunizations in southwest Nigeria

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**Abstract:** Background: Immunisation is a cost effective public health intervention in reducing morbidity and mortality from vaccine preventable diseases worldwide. In Nigeria, childhood immunisation against poliomyelitis is still bedeviled by setbacks which are multifactorial. Objectives: The objective of the study was to determine the knowledge, attitude and perceptions of adult males towards childhood immunizations in Nigeria. Methods: The research was a descriptive cross-sectional study of adult males in the Ido-Osi local government area of Ekiti state, southwest Nigeria. Multistage sampling method was used to select 320 adult males for the study, and a pre-tested semi-structured questionnaire was used to collect quantitative data. Statistical analysis was done using the Epi Info 4. P value <0.05 was considered as statistically significant. Results: Mean age ( $\pm$ SD) of the respondents was 48.4 $\pm$ 12.6 years with range of 20-95 years. About half (50.6%) of the respondents were in the age group 40-59 years. 79.7% were married while only 2 were single with about two-thirds of the married respondents in monogamous family type. 82.3% were willing to support childhood immunization. The association between respondents' religion and education, and willingness to support childhood immunization was found to be statistically significant: ( $\chi^2=51.53$ ; df=6; p=0.0000) and ( $\chi^2=65.48$ ; df=6; p=0.0000) respectively. Conclusion: The study showed that the knowledge of adult males about childhood immunization was high. The perception of childhood immunization as a means of protection from certain illnesses was also common and most men were willing to support it. The support for childhood immunization was significantly affected by religion and level of education.

**Keywords:** Childhood Immunisation, Knowledge, Attitudes, Perceptions, Adult Males

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## 1. Introduction

Immunisation as a public health intervention is regarded as the most cost effective strategy in reducing morbidity, disability and mortality from vaccine preventable diseases globally.<sup>1-3</sup> It is for this reason that immunisation was included as an important component of child survival programmes. The child survival programmes were developed by the United Nations Children's Fund to decrease morbidity and mortality of children less than five years of age.<sup>1</sup> Immunisation has also been described as a weapon of "mass salvation" protecting not only the specific individual but also the entire communities, a term referred to as herd immunity.<sup>1</sup>

The concept of universal immunisation in children that was started in 1985 and was interpreted as the ideal that no child should be denied immunisation against tuberculosis (TB), diphtheria (DT), pertussis (PT), tetanus (TT), poliomyelitis (POLIO) and measles (MS), was never achieved in most countries, including the resource-rich developed nations.<sup>4</sup> However, the Expanded Programme on Immunisation (EPI) in middle- and low-income countries have prevented more than 2 million child deaths from the above diseases each year since its initiation in 1974.<sup>5</sup> The establishment of the Global Poliomyelitis Initiative in 1988 has resulted in a 99% reduction in the worldwide incidence of poliomyelitis.<sup>5,6</sup> Over the years, a number of other preventable diseases such

as yellow fever and hepatitis B infection have been added to the pack.<sup>6</sup>

Nigeria's immunisation programmes have been characterized by intermittent failures and successes since the initial introduction in 1956.<sup>7</sup> The current coverage rates for the various childhood vaccines in Nigeria are among the lowest in the world.<sup>8</sup> The country is one of the very few countries in the world that has not interrupted indigenous wild polio virus transmission.<sup>7</sup> Nigeria has the highest prevalence of circulating wild poliovirus in the world, and accounts for about half of childhood deaths in Africa from measles.<sup>9-10</sup> The poor immunisation coverage in Nigeria is multifactorial and related to a complex interplay of several socio-economical, religious, cultural and traditional factors characterizing the Nigerian society. Religion and family are two powerful institutions in the Nigerian society and they play critical roles in the health behaviour and practices of the citizens.<sup>11-15</sup> In a typical black African society, culture and traditions put the male gender over and above the female and men are known to exert immense influence on the reproductive health of their spouses and the general health of the children.<sup>16,17</sup> The Federal Government of Nigeria in 1988 formulated the National Population Policy which recognizes men as the head of the family who take far reaching decision on family size, subsistence, social relation and health matters.<sup>18,19</sup> The objective of the study was to determine the knowledge, attitude and perceptions of adult males towards childhood immunisation (CI) in Nigeria. The findings of the study might contribute to local policy formulation on immunisation and improve advocacy for immunisation which is an important tool for achieving some of the millennium development goals.

## 2. Methods

The research was a descriptive cross-sectional study of adult males in the Ido-Osi local government area of Ekiti state, southwest Nigeria. Ido-Osi local government area has an estimated population of 107,000 people. The local government area has many health facilities which offer immunisation services. These facilities include a tertiary hospital, a secondary hospital and 15 primary health centres. Multistage sampling technique was used to select 320 adult males for the study. A pre-tested semi-structured questionnaire was used to collect quantitative data on socio-demographic variables, knowledge, attitude, perception and practices of men towards childhood immunisation. Five research assistants were recruited and trained to assist with administration of the questionnaire. Statistical analysis was done using the Epi Info 4. Descriptive analysis was done using frequency and percentages. P value <0.05 was considered as statistically significant.

## 3. Results

Three hundred and twenty (320) male adults residing in Ido-Osi local government area were selected for the study.

Three hundred and ten (310) male adults (96.9%) responded. The mean age ( $\pm$ SD) of the respondents was 48.4 $\pm$ 12.6 years and the range was 20-95 years. About half (50.6%) of the respondents were in the age group 40-59 years. Two hundred and ten (67.7%) respondents were Christians while only 2 (0.6%) professed no religion (Table 1). The educational level of the respondents is shown in Table 1. Majority (79%) were married while only 2 were single. Two hundred and forty five (79%) of the married participants were in monogamous family relationship while others were polygamous. Other demographic characteristics of the patients are highlighted in Table 1. Most (91.5%) of the respondents had heard about CI before. Two hundred and sixteen respondents (67.5%) knew the age of commencement of CI, 69 (21.6%) did not know, while 35 (10.9%) were not sure. Out of 310 respondents, 254 (81.9%) said they supported CI. The association between respondents' religion and willingness to support CI was found to be statistically significant ( $\chi^2=51.53$ ;  $df=6$ ;  $p=0.0000$ ) (Table 2). Also, the association between respondents' level of education and their willingness to support CI showed statistically significant difference ( $\chi^2=65.48$ ;  $df=6$ ;  $p=0.0000$ ) (Table 3).

Table 4 shows the types of vaccine preventable diseases known by the respondents. Polio was the most frequently known of the vaccine preventable diseases while pertussis was the least known (Table 4). Mass media (191/461; 41.4%) was the most frequent source of information about CI followed by health care workers (HCW) (160/461; 34.7%) and through their wives (55/461; 11.9%). Internet and social media (4/461; 0.9%) was the least frequent source of information. CI was perceived most frequently (78.4%) as a means of protecting children from certain illnesses (Table 5). Two hundred and fifteen (69.4%) respondents said men have roles to play in CI (Table 6).

## 4. Discussion

There were 310 adult male respondents from communities within Ido-Osi local government area of Ekiti state, southwest Nigeria. The mean ( $\pm$ SD) age was 48.4  $\pm$ 12.6 years and 64.5% of the respondents had at least secondary education. With these findings, it could be said, generally, that the respondents are middle-aged literate people. This is consistent with the national literacy rate of 61.3%.<sup>20</sup> The participants' awareness of CI was very high (91.5%). This finding corroborates the results of other studies which showed that awareness of CI was 95%<sup>21</sup> in Port Harcourt, South Nigeria, 99%<sup>22</sup> in Igbo-Ora, South Nigeria, and 94.1%<sup>23</sup> in rural communities in India. However, this is contrary to findings in Northern Nigeria where Kabir *et al*<sup>24</sup> found that only 75% of mothers were aware of the existence of routine immunisation services. In our study, the most frequent source of information on CI was traditional mass media and the least was social media. This is consistent with the findings by Jah *et al*.<sup>25</sup> This underscores the continual critical role of traditional mass media in health and social services advocacy in resource-poor settings. Although the low contribution of

social media as a source of information on immunisation in our study might be partly due to low socioeconomic profile of the communities, it however reveals the enormous potential in the emerging social media in advocacy and publicity for the expansion of immunisation coverage in Africa and other developing tropical countries where there are huge digital gaps. A large number of participants in this study knew the age of commencement of CI. This might be due to the fact that most of the participants were literate and could read up the information from the children’s immunisation cards.

Also, our study also showed that CI was perceived most frequently (60%) as a means of protecting children from certain illnesses while 16.3% perceived it as part of modernization that is not necessary for child’s survival. This is similar to the finding reported by Jah *et al*<sup>25</sup> where 61.1% believed CI offer protection against diseases. Ekanem *et al*<sup>26</sup> also showed that 10.6% of participants in their study were not interested in immunisation because illnesses cannot affect their children. In another study by Ibadin *et al*<sup>27</sup>, 9.1% of the participants said they do not believe in immunization.

In this study, polio was the most recognised vaccine preventable childhood diseases under NPI, by 68.8% of the participants. This was followed by measles recognised by 36.9%, and the least recognised vaccine preventable childhood disease by 29.9% of the participants was pertussis. This is different from the finding by Nte *et al*<sup>22</sup> who reported that measles was the most recognised by 97.4% of the participants. The high recognition of polio as vaccine preventable disease in the study could be due to intense scale up of activities and new innovations on polio eradication in the past few years which involved introduction of special immunisation days, enormous political will, increased participation of local and international not-for-profit and corporate organizations and religious bodies.

Majority of the participants said men have roles to play in CI. This is consistent with the belief in a traditional African society where the interplay of culture, tradition and religion admits that man is the head of the family and that he takes responsibility for all decisions including health and financial issues.<sup>28</sup>

### 5. Conclusions

The study showed that the knowledge of adult males about CI was high and most frequently obtained through traditional mass media. The perception of CI as a means of protection from certain illnesses was also common and most men were willing to support it. The support for CI was affected by religion and level of education.

*Table 1. Socio-demographic characteristics of the respondents.*

Characteristics	Frequency	Percentage
Age (yr)		
20-39	88	27.6
40-59	162	50.6

Characteristics	Frequency	Percentage
≥60	60	21.9
Religion		
Christianity	210	67.7
Islam	73	23.5
Traditionalism	25	8.1
Not profess any religion	2	0.6
Educational level		
Nil	43	13.9
Primary	67	21.6
Secondary	90	29.0
Tertiary	110	35.5
Marital status		
Single	2	0.6
Married	245	79.0
Widowed	18	5.8
Separated/Divorced	45	14.5
Occupation		
Self-employment	157	50.6
Civil/Public service	107	34.5
Farming	25	8.1
Un-employed	21	6.8
Number of children < 5 years		
Nil	117	37.7
1-2	171	55.2
3-4	21	6.8
≥5	1	0.3

*Table 2. Association between respondents’ religion and willingness to support childhood immunization.*

Religion	Willingness to support childhood immunization			
	No Freq (%)	Not sure Freq (%)	Yes Freq (%)	Total Freq (%)
Christianity	60 (28.6)	21 (10.0)	129 (61.4)	210 (100)
Islam	37 (50.1)	9 (12.3)	27 (37.0)	73 (100)
Traditional	22 (88.0)	3 (12.0)	0	25 (100)
Not profess any religion	2 (100)	0	0	2 (100)
Total	121 (39.0)	33 (10.6)	156 (50.3)	310 (100)

$X^2 = 51.53; df = 6; p = 0.000$

*Table 3. Association between respondents’ educational status and willingness to support childhood immunization.*

Education	Willingness to support childhood immunization			
	No Freq (%)	Not sure Freq (%)	Yes Freq (%)	Total Freq (%)
None	15 (34.9)	10 (23.3)	18 (41.9)	43 (100)
Primary	3 (4.5)	11 (16.4)	53 (79.1)	67 (100)
Secondary	3 (3.3)	11 (12.2)	76 (84.4)	90 (100)
Tertiary	2 (1.8)	4 (3.6)	104 (94.5)	110 (100)
Total	23 (7.0)	36 (10.8)	251 (82.3)	310 (100)

$x^2 = 65.48; df = 6; p = 0.0000$

**Table 4.** Knowledge of respondents on type of vaccine preventable diseases and places where routine childhood immunization could be administered.

Vaccine preventable childhood diseases	Frequency(%)
Poliomyelitis	220(71)
Measles	118(35.4)
Tuberculosis	118(35.4)
Yellow fever	109(35.2)
Tetanus	97(31.3)
Hepatitis	65(21.0)
Diphtheria	36(11.6)
Pertussis	29(9.4)
Place(s) of childhood immunization administration	Frequency (%)
Health facilities	234(36.6)
Home	48(15.0)
School	4(1.3)
Market	2(0.6)
Not sure	22(7.1)

**Table 5.** Perception of respondents about childhood immunization.

Perception	Frequency(%)
Means of diverting public fund	32 (10.3)
Part of modernization unnecessary for child's survival	52 (16.8)
A waste of time and resources	37 (11.9)
Fulfilling the wish of government and health care workers	39 (12.6)
Protecting children from certain diseases	243 (78.4)

**Table 6.** Attitude of respondents towards childhood immunization.

Must children be presented for immunization?	Frequency (%)
Yes	113 (36.5%)
No	148 (47.7%)
Not sure	49 (15.8%)
Does a man have a role to play in childhood immunization?	
Yes	215 (69.4%)
No	58 (18.7%)
Not sure	37 (11.3%)

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