
INTERNATIONAL JOURNAL OF CURRENT RESEARCH IN BIOLOGY AND MEDICINE

ISSN: 2455-944X

www.darshanpublishers.com

DOI:10.22192/ijcrbm

Volume 2, Issue 7 - 2017

Original Research ArticleDOI: <http://dx.doi.org/10.22192/ijcrbm.2017.02.07.007>

Factors that influence health care givers' 2016 effective implementation of infant immunization in Calabar Cross River state, Nigeria

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Abstract

Reports on the poor immunisation rate in Nigeria at the state and national levels, and the health risk to which it exposes children is a regular feature in Nigeria's news media. The recent news that Cross River State, Nigeria effectively implemented her 2016 immunisation programme by achieving 92% success, becomes a relief both within and outside primary healthcare circles. This paper investigates the factors that influenced healthcare givers' 2016 effective implementation of infant immunization in Calabar Cross River State, Nigeria. By adopting the Theory of Planned Behaviour (TPB), the study uses 240 randomly sampled respondents, 120 each representing the health workers and parents, and 30 each of the health workers and parents were drawn from four medical/health facilities in Calabar. The analysis revealed that a combination of increase in government healthcare funding, health workers' efforts, nearness to health facilities, support of the international organisations, etc, were factors that influenced the immunisation success. Effective sustenance of the government policies and the use of Cross River State as a national immunisation model were suggested.

Keywords: Factors, Health care givers, 2016, Infant immunization, Calabar Cross River

Introduction

Immunization is defined by World Health Organization (2017) as 'the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine which stimulates the body's immune system to protect the person against subsequent infection or disease'. Immunization is one of the components of primary healthcare which emphasizes prevention, control and elimination of some deadly infectious diseases. It is an effective process of preventing, controlling and eliminating childhood deadly diseases such as poliomyelitis, measles, tuberculosis, diphtheria, tetanus, etc (Drain, 2012;

Gilbert, 2012). Immunization is effective, it protects the unprotected, saves money and gives new hope for children (Kane & Lasher, 2002).

The World Health Organisation (WHO) introduced the Expanded Program on Immunization (EPI) for global immunization of children against childhood diseases (EPI, 1998). However, the National Programme on Immunisation (NPI) (2004) affirms that Nigeria had earlier initiated her own Expanded Programme on Immunization (EPI) in 1979, which was subsequently placed within the Department of Public Health and

Communicable Disease Control of the Federal Ministry of Health. The name was changed from Expanded Programme on Immunization (EPI) to the National Programme on Immunisation (NPI) in 1996. It was launched by the then Nigerian First Lady, Mrs Mariam Abacha. The change resulted in the review of the programme and subsequent creation of NPI as a parastatal through Decree 12 of 1997 with the sole responsibility of supervising and improving Routine and supplemental immunisations in Nigeria (Awosika, 2000). From then onwards, Routine Immunisation (RI) has been provided largely through the public health system, although this varies from state to state. Despite the successes recorded initially in infant immunization, regular immunization coverage in Nigerian is one of the lowest coverage rates worldwide (USAID, 2009). In addition, less than 50% of Nigerian children received the recommended vaccination (WHO, 2008). The World Health Organization estimates that 868,000 children below the age of 5 years die in Nigeria yearly (Anyene, 2014).

The success rate of infant immunization in Nigeria has been unstable. For instance, Awosika (2000) reports that Nigeria achieved universal childhood immunisation (UCI) with 81.5% coverage for all antigens in 1990 through the combined efforts of the Federal Ministry of Health and some International Organisations. Awosika (2000) further observes that the success was short lived following the decline of immunization coverage to less than 30% in 1996. Anyene (2014) posits that at present, less than 47% of children in Nigeria get the required vaccination (DPT) that protects them from diphtheria, tetanus, and pertusis (whooping cough). Despite the efforts of the government and the contributions of the International donors and partners, Nigeria remains one of the three countries where polio and other diseases are endemic (NPI, 2003; Boseley, 2012). While other nations have significantly made progress. With this worrisome state of the immunization programme in Nigeria, it becomes imperative to acknowledge any progress made by Nigeria, any state in Nigeria or section of the country as well as investigate how such success is achieved.

The Cross River State Commissioner for Health recently announced that Cross River State achieved 92 per cent immunisation coverage across the 18 local government areas of the state in 2016 (Pulse, 2017). This announcement was made in an interview with the News Agency of Nigeria (NAN) in Calabar. Cross River State is one of the South-South states in Nigeria with Calabar as its state capital. Given that there are state coverage variations in the immunization programme/effort in Nigeria, coupled with the fact that Calabar is one of the oldest and most developed cities in Nigeria, in addition

to being the state capital of Cross River State, it becomes a welcome development to know that in spite of the immunization challenges facing Nigeria, Calabar in particular and Cross Rivers State in general achieved 92% immunization coverage in 2016 (Ugbal, 2017). This impressive achievement exceeded the 90% previously set by the government as the target to be achieved by 2015 (Federal Republic of Nigeria, 2010). The implication of this achievement is that contrary to hitherto held belief, 100% immunisation of children in Nigeria is achievable if concerted effort is made in that direction. In addition, if a state in Nigeria could do it in 2016, the whole nation can also achieve the same feat by looking at the factors that facilitated the achievement in Cross River state particularly Calabar the state capital. The present study examines the factors that made it possible for this immunization achievement in Calabar, Cross River State with a view to enabling other states in Nigeria to emulate from her. The paper also attempts to answer the specific questions of the extent to which funding, publicity, culture, etc. influenced the effective implementation of immunization amongst healthcare givers in Calabar, Cross River State. An examination of these factors will be the objective of this study.

The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) originated from Ajzen (1988, 1991). This theory aids in the understanding of how the behaviour of people can be changed. It predicts behaviour because behaviour can be deliberative and planned. According to Ajzen (1991), human action can result from three considerations: (a) behavioural beliefs, (b) normative beliefs and (c) control beliefs. Behavioural Beliefs are concerned with the possible consequences of the individual's behaviour, whereas Normative Beliefs are about the standard expectations of others. Control Beliefs however, refer to the beliefs about the factors that may facilitate or impede the performance of the behaviour of an individual, determine his/her attitude towards a health seeking behaviour. According to Lee, Cerreto and Lee (2010) the direct determinants of individuals intention to carry out a particular behaviour depends on the extent to which they view a particular behaviour positively (attitude); think that significant others want them to engage in the behaviour (subjective norm), and believe that they are able to perform the behaviour (perceived behavioural control). The behaviour must be thought to generate positive consequences, desired by others, and that the behaviour must be seen as likely to be successful.

This study is anchored on the Theory of Planned Behaviour in order to account for the behavioural factors responsible for the effective implementation of the immunization programme in Calabar Cross River State by health workers, with the cooperation of parents. The application of this theory is aimed at showing that the successful execution of the immunisation coverage target by health workers in Calabar in 2016 was based on the behavioural beliefs that the synergy of the actions of the government of Cross River State, the

State Ministry of Health officials as well as the health care givers would result in success, and that this success was desired by the residents in Calabar and that it was achievable with the combined efforts of all concerned. The beliefs were at two levels: one is the level of the health workers, and the other is the level of the parents. The argument is that the combination of these two levels of behavioural beliefs was responsible for the state's attainment of 92% immunisation target in 2016; the objective of this study is to examine the factors that influenced the health workers' effective implementation of the immunisation target in Calabar, Cross River State, Nigeria.

Materials and Methods

Data for the study consist of 120 health care givers, 30 each drawn from four medical facilities namely, University of Calabar Teaching Hospital (UCTH), General Hospital Calabar, Diamond Primary Health Centre, Domiciliary Health Centre, Hawkins Calabar. In addition, 30 parents were equally sampled in each of the above named health facilities where their children were

getting immunised. Simple random sampling technique was used in the collection of the data. In all, 240 respondents (120 health workers and 120 parents) were used in the study, using a well-structured questionnaire instrument. The analysis was done quantitatively using simple percentages and t-Test statistical analytical methods. While the simple percentages was used to show the response of the respondents, the t-Test was used to test the null hypothesis which states that there is no difference between health workers' and parents' perception of factors that influenced the effective implementation of immunization in Calabar, Cross River state in 2016.

Results

Parents' Reasons for Immunizing their Children

Table 1 summarises the response of the parents with regard to their reasons for effectively immunising their children. About 91.6% (n = 110) indicated that they were desirous of immunizing their children because it is necessary to protect their children. Those who embarked on it because it is free (without any cost) were 97.5% (n = 117). Those who decided to do it because of the availability of the vaccines were 85% (n = 102), while 88.3% (n= 106) attributed their willingness to the fact that they receive immediate attention from the medical workers on arrival at the health facilities. About 95% (n = 114) of the respondents (parents) affirmed that their interest stemmed from the fact that the health facility (venue) for the immunization was very close and had easy access to transport. Below is Table 1 with the summary.

Table 1: Reasons for Parents immunisation of their children

Reasons	Frequency	Percentage
Necessary to protect the children	110	91.6
Immunisation is free	117	97.5
Vaccines are available	102	85
Immediate attention is given	106	88.3
Very close/available transport	114	95

Reasons Effective Immunization in the Study Area

Some items in the questionnaire sought to establish the reason for the successful implementation of the immunisation in Calabar Cross River State Nigeria from the respondents. Table 2 below shows their

response to the items. While 65% (n = 78) of the parents and 91.6% (n =110) of health workers believed that the high funding of the immunisation project resulted in success, 83.3% (n =106) of the parents and 96.6% (n =116) of the health workers

agreed that the efforts of the health workers also contributed to the recorded success. About 93.3% (n = 112) of the parents and 86.6% (n = 104) of the health workers were of the belief that there was adequate publicity and that this made many people to be aware of the need for immunization. On the issue of culture 61.6% (n = 74) of the parents and 28.3% (n = 34) of the health workers indicated that culture was partly responsible for the success. Regarding the availability of Health Facilities 83.3% (n = 100) of the parents and 85% (n = 102) of the health workers believed that the availability of health facilities facilitated the immunization process. Apart from the availability of the

health facilities 95% (n = 114) of the parents and 78.3% (n = 94) of the health workers stated that the nearness of these health facilities to people is also a factor that facilitates immunization in Calabar. On the issue of education, while 77.5% (n = 93) of the parents were of the view that attainment of high education level helped, 66.6% (n = 92) of the health workers said that education was one of the factors. About 70% (n = 84) of the parents and 76.6% (n = 92) of the health workers also believed that the success may not have been possible without the support of the international organisations. These data are shown on the following table (Table 2).

Table 2: Parents and health workers perceptions of effective immunization

Reasons for Success	Parents F	%	Health Workers F	%
High Government Funding	78	65	110	91.6
Health Workers' Efforts	106	88.3	116	96.6
Adequate Publicity	112	93.3	104	86.6
Culture of the People	74	61.6	34	28.3
Availability of Health Facilities	100	83.3	102	85
Nearness to Health Facilities	114	95	94	78.3
High Level of Education	93	77.5	80	66.6
Support of International Organisations	84	70	92	76.6

Figure 1 also presents the data frequency at a glance in order to show the response of the subjects in the study to these variables.

Test of Hypothesis

The null hypothesis which states that there is no difference between health workers' and parents' perception of factors that influenced the effective coverage in the implementation of immunization programme in the data was tested using t-Test analytical

method to compare the two data sets. According to the t-Test analysis on Table 3, the one-tailed P-Value is 0.326 which is significantly higher than the alpha value ($\alpha = 0.05$) at 5% confidence interval. The researcher is therefore 95% confident that statistically, there is no significant difference between the perception of the parents and the health workers with regard to the reasons for the effective immunisation of children in Calabar, Cross River State, Nigeria. The null hypothesis which states that there is no difference in the two sets of data is therefore upheld.

Table 3: t-Test: Paired Two Sample for Means

	Parents	H/workers
Mean	95.125	91.5
Variance	235.8393	664.8571
Observations	8	8
Pearson Correlation	0.538448	
Hypothesized Mean Difference	0	
Df	7	
t Stat	0.470805	
P(T<=t) one-tail	0.326049	
t Critical one-tail	1.894579	
P(T<=t) two-tail	0.652098	
t Critical two-tail	2.364624	

Discussion

From the data analysis, the roles of several factors in achieving the immunisation target in Calabar have come to the fore with varying degrees of contributions perceived by the respondents in the study. From the reasons the parents gave that prompted them to show commitment towards the immunisation of their children, it seems that majority of the parents resident in Calabar appreciate the importance of immunisation in relation to the health and survival of their children hence the high percentage of their response in that regard (91.6%). The data analysis also indicated the importance of locating the immunisation centres near residential areas where the centres will be accessible. Free immunisation is another factor that encouraged parents to have their children immunised. The nearness of the immunisation venue to people and free immunisation are two factors tied to the need by the parents in the study area to minimise cost. These two factors imply that when the immunisation venue is close and the government provides the vaccines and sends out health workers to immunise children without any charges, more people are persuaded to make use of this opportunity by bringing out their children for immunisation especially in a country such as Nigeria that presently grapples with economic recession. There was equally a mention of the attitude of the health workers indicating that the workers promptly attended to the children and their parents on their arrival at the health facility.

The parents and the health workers adduced the following as the main factors responsible for the effective coverage of the immunisation programme in Calabar. These include high government funding, the efforts of the efforts, adequate publicity, the culture of the people, as well as the availability of health facilities. Others are nearness of the health facilities to the people, the level of education and support from international organisations. The response of the parents and the health workers indicated a relatively high frequency on almost all the items on the instrument with the exception of 'Culture of the People' which recorded the lowest frequency from both the parents' and the health workers' responses. However, while the parents had a response of 61.1% to the culture of the people as a factor, the health workers had a response of 28.3%. This indicates that all the respondents viewed the culture of the people as contributing less to the immunisation success when compared with other factors. In addition, the health workers' low response to the cultural factor suggests that the culture of the people hardly played any positive role in the 2016 immunisation programme. This may be attributed to the fact that Calabar is a

metropolitan city which is disposed to urban cultural outlook that may be devoid of overbearing influence of culture practiced in the rural areas.

The analysis shows that the health workers may have responded from their shared knowledge on health related issues and government policies. This may be why their response was high on three main items, i.e. high government funding (91.6%), health workers efforts (96.6%) and adequate publicity (86.6%). Two factors may be responsible for this response. One is that they may have had privileged information regarding the state ministry of health's procurement and supply of vaccines, immunisation consumables, etc to the various health facilities which were needed for the immunisation programme. Secondly, they may have been involved in the sensitisation programme of the government which made them to know the government's level of commitment (financially and otherwise) in the immunisation project. The parents on the other hand may have responded according to what they observed before and during the immunisation programme. This may be why their response recorded its highest frequency on three factors namely nearness to health facilities (95%), adequate publicity (93.3%) and health workers' effort (88.3%). These factors directly influenced their behaviour towards the immunisation of their children. However, the high frequency of the response of the parents and health workers is an indication that the respondents consider these factors important in the execution of immunisation in Calabar cross River State.

Although education usually plays a leading role in many instances, but it was relegated to the 4th position by the parents' data frequency and to the 7th position by that of the health workers. Its displacement may have resulted from the adequate publicity carried out by the government to sensitise the people such that they had adequate knowledge of the Immunisation and its importance and did not depend on their level of education. Both the parents and the health workers also identified the support of the international organisations who are usually indispensable partners in health related matters globally. For instance, Nyok (2016) reports that the Special Adviser - Community and Primary Healthcare, to the Governor of Cross River State, stated that a lot of advocacy and sensitisation visits, were made by the Office of the S.A - Community and Primary Healthcare, to major stakeholders in the state to considerably influence the success of the immunisation exercise. Based on these activities, her office attracted the donation of consumables like medical kit, Adverse Effects

Following Immunisation (AEFI), etc, from the representatives of some international organisations such as UNICEF, WHO, etc. as well as from Tulsi Chanrai Foundation and BEZ Pharmacy for 2016 Immunization campaigns in Cross River State.

The data in this study has shown that the application of the Theory of Planned Behaviour (TPB) aptly explains the behaviour of the subjects as their response reflects their perception and their behaviour. On the part of the parents, their behaviour towards the immunisation of their children was determined by their belief that it would save and protect their children (Behavioural Beliefs). The parents' behaviour was also based on the fact that they believed that other people (friends, relatives, the government and the international organisations) wanted them to have their children immunised in order to keep the children healthy and protect them from diseases and possible death (Normative Beliefs). Finally, the parents' immunisation behaviour was equally based on their belief that the immunisation was feasible; and likely to be successful given the factors that they have indicated determined their decision (Control Beliefs). A change in any of the determinants factors would ultimately result in a change in the behaviour of the parents regarding their children's' behaviour. A combination of these three aspects of their behaviour summarises the theme of Ajzen's (1991) Theory of Planned Behaviour (TPB).

The Theory also explains the behaviour of the health workers towards the immunisation programme. As health workers, they were duty bound to immunise the children based on their knowledge that these vaccines would protect them. This knowledge fortified their belief that the immunisation programme would be a success and that meeting the set target was achievable based on the funding, logistics, advocacy, publicity and the sensitisation put in place by the government. This perception formed their (Behavioural Beliefs). The standard expectation of people generally (residents and the government officials) was that the health workers would carry out immunisation regularly to protect the children (Normative Beliefs). This expectation by others influenced their commitment to ensure the success of the programme hence the high frequency of the response of the parents and the health workers themselves to the efforts of the health workers (88.3% and 96.6% respectively). The health workers also believed that with the provision of everything they needed and adequate preparation there was the likelihood of the immunisation programme succeeding. This was their Control Beliefs which influenced their behaviour. A change in the factors responsible for the success of the programme would have altered the

outcome of the immunisation programmes and perhaps leads to its failure.

The findings in this study are in line with Awosika's (2000) observation that the success rate of immunisation in Nigeria is unstable. The instability is attributable to lack of continuity in governments' policies and efforts at sustaining and building upon existing achievements made in the area of immunisation of the children whether at the local government } state government or federal government levels. It is therefore imperative to ensure that efforts are made to improve on the success recorded in Calabar Cross River State by sustaining the availability of factors that influenced the progress made so far, rather than encouraging anything that will whittle down the achievement already made.

Conclusion

The successful implementation of immunisation programme in any country puts the given country in a positive light nationally and internationally. Nationally, it is an indication that the health system or Community and Primary Healthcare Systems are functional. This is because by successfully implementing immunisation programmes, many lives are saved.

Internationally, the country is seen as a serious one in terms of public and primary healthcare management. With the official announcement of the effective implementation of immunisation in Cross River State, South-South Nigeria, this study examines the factors that influenced the successful implementation of immunisation rate in Calabar, the capital city of Cross River State, using the Theory of Planned Behaviour.

The success in the effective implementation of government policies on immunisation and primary health services observed in other countries were previously used as models for Nigeria and the various states of the federation. The model should now be the Calabar and Cross River State example. While there is the need for this immunisation coverage success to be replicated in other cities and states in Nigeria, it is important that the Cross River State government and the healthcare officials in the state and Calabar in particular sustain the immunisation policies and implementation efforts to avoid a drop in the immunisation coverage rate as well as avoid the possible reappearance of the diseases in the city or the state.

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How to cite this article:

Ibibu J.E., Nwokike G. I., Kor R., Nwagu S.A. Agu G.C., Ezenwuba C.O., Nwosu D.C, Akujiobi A.U., Obeagu E.I., and Nwanjo H.U. (2017). Factors that influence health care givers' 2016 effective implementation of infant immunization in Calabar Cross River state, Nigeria. *Int. J. Curr. Res. Biol. Med.* 2(7): 38-44. DOI: <http://dx.doi.org/10.22192/ijcrbm.2017.02.07.007>