



# Influence of Groove FM health arena programme on childhood immunisation: A study of residents of Owerri metropolis

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## ABSTRACT

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This study examined the influence of groove fm health arena programme on childhood immunisation among residents of Owerri metropolis. The study was anchored on Yale persuasion theory. The researcher adopted survey research design for this study. The population consists of 555,500 Owerri metropolis residents and from this population a sample size of 384 was gotten using Wimmer and Dominick's online sample size calculator. The multi-stage sampling procedure was used in this study. Simple percentages were used to analyse the data after it was collected using a questionnaire. Finding revealed that 46.7% of the respondents indicated that Groove FM Health Arena programme has been able to influence them in carrying out childhood Immunisation to a large extent. The fact respondents are exposed to Groove FM Health Arena programme on childhood Immunisation to a large extent is commendable. Hence, the channel of communication should be leverage on by ministry of health or centre for disease control to communicate important messages as it concer health when the need arises. The producers of Health Arena programme should sustain their effort or even improve the content of the programme so as to continue enhancing audience knowledge on childhood Immunisation and other health issues. Residents should be encouraged to avail themselves to health programmes so as to be able to arm themselves with information that will help them in time of health issues or emergency.

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## 1. Introduction

Immunisations against dangerous diseases can be given to children in a safe and efficient manner. Immunisation reduces the transmission of diseases that can be prevented, protecting not only the individual kid but also the community (Thomas et al., 2022; Vivian et al., 2020). Immunisation is one of the most significant public health treatments and economically sound ways



to lower child mortality and morbidity related to infectious childhood diseases (WHO, 2019). Regular immunisation is essential for drastically lowering child mortality from diseases that can be prevented by vaccination. According to WHO data from 2020, immunisation is projected to avert 3 million deaths worldwide year.

Despite the fact that the majority of nations have routine immunisation programmes in place as a public health measure (WHO, 2020), more than 1.5 million children under the age of five pass away each year from diseases that can be prevented by vaccination (WHO, 2019). Populations at risk of avoidable disease outbreaks are those with low vaccination rates (Phadke et al., 2016; Prevention, 2023). Every vaccination is planned to coincide with a certain biological window of time within which the child's immune system will be able to mount an early and effective defence against the associated infectious disease (Bobo et al., 2022; CDC, 2019). Following a regular immunisation schedule is essential for reducing the risk of contracting diseases that can be prevented by vaccination and their spread (Homel & Edwards, 2018; Odutola et al., 2015).

Ezeaka (2003) as cited in Oluwafemi (2012) Immunisation is the process of eliciting immunologic defence against pathogenic organisms without posing a major risk to the receiver. Immunisation can stop infectious diseases from spreading to a person, limit the transmission of diseases within a group (via herd immunity), and possibly even completely eradicate the illness (Ezeaka, 2003). Like many other African nations, Nigeria is working to improve its routine immunisation and general health systems in order to lower the illness burden from vaccine-preventable diseases (VPDs). One strategy is immunisation education, which may be found at prenatal and postnatal clinics as well as on radio and television (Organization, 2008). To enhance vaccination adherence, for instance, media and technological reminders to parents about vaccines can be used (Achakpa-Ikyo et al., 2021; Garcia-Dia, 2017; Qazi, 2019). It is impossible to overstate the value of immunising children, which is why parents must always be aware of the consequences of choosing not to vaccinate their children. In this instance (Ijioma & Nze, 2022), the media can greatly influence parents to have a positive attitude about their children's immunisations (Omoankhanlen, 2021).

In the history of public health, the vaccine has been recognised as a powerful tool. The World Health Organisation reports that vaccination coverage fell to 83% in 2020 from 86% in 2019. Children that do not receive all of their immunisations on time are typically from lower socioeconomic backgrounds, live in remote locations, and have limited access to medical services. In addition, there are several instances of vaccination refusal. According to projections from the World Health Organisation (WHO), 1 in 5 children worldwide do not receive routine life-saving vaccinations each year (WHO, 2020). Furthermore, 1.5 million children risked dying from illnesses that could have been prevented by immunisations. Based on statistics it becomes worrying when

children are not immunised which can lead to preventable death (Cajetan et al., 2021). Some children might not be immunised as a result of the ignorance of their parents or perhaps lack of information concerning Immunisation programmes. In all these, the media (Groove FM) can play effective role through their health programme in ensuring that children are immunised so as to avoid child mortality.

In Owerri, Groove FM through its programme “Health Arena” has been drawing the attention of parents on the need to get their children immunised so as to reduce the rate of infant death that are preventable through Immunisation. Health Arena is a health programme where issues as important as children immunisation are discussed. The programme is usually aired on Tuesday and a repeat broadcast on Saturday by 5pm. The programme is anchored by Oluchi Anoruo with a health expert as guest. There is dearth of literature showing the extent people are exposed, knowledgeable and influenced by childhood immunisation radio programme in Owerri metropolis. Therefore, this gap is what this study tends to fill. The following questions guided the study: To what extent are residents’ exposed to Groove FM Health Arena programmes on childhood Immunisation in Owerri metropolis? to what extent exposure to Groove FM Health Arena programmes has enhanced residents’ knowledge on the need for childhood Immunisation in Owerri metropolis? To what extent Groove FM Health Arena programmes influence Owerri metropolis residents in carrying out childhood Immunisation?.

## **2. Theoretical Framework**

The research was based on Yale's Persuasion Theory. Yale's Persuasion Theory examines the social psychological factors that influence individuals' likelihood of altering their attitudes in reaction to persuasive communications (Odoemelam et al., 2024). The Yale attitude transformation strategy, first examined by Carl Hovland and his associates at Yale University throughout the 1940s and 1950s (Aigbefoh et al., 2022). The idea posits that several circumstances influence the likelihood of attitude change through persuasion, as behavioural change cannot transpire without a corresponding change in attitude. The three primary criteria are the source, the message, and the audience. The Hovland-Yale model posits that the message content is a significant factor (Cook, 2012). The aforementioned suggests that the originator or individual conveying messages can affect their persuasiveness. This notion is commonly termed source credibility. It is logical that we are more inclined to be influenced by the statements of experts rather than those without knowledge. If we lack faith in the source of a communication, we are unlikely to be persuaded by that individual (Syahdan, 2022).

The approach encompasses a six-step procedure for altering individuals' attitudes towards an issue: presentation, attention, comprehension, yielding, retention, and behaviour. Persuasion refers

to the art of delivering compelling communications, such radio messages must be both persuasive and effectively articulated (Talabi, 2024). Secondly, individuals cannot be influenced by communications they disregard; hence, following the presentation of the message to the audience, the subsequent step in the persuasive process is garnering attention. Thirdly, the audience must understand the message before it can affect their attitudes, yielding refers to acceptance, the moment when attitude change transpires. When a persuasive communication effectively alters listeners' perspectives, the recipient has acquiesced to the message (Charbonneau, 2024). The final aspect is retention, which pertains to the duration of the attitude shift. The final stage in the change process is behaviour, which serves as the ultimate objective of persuasive discourse. In the context of this study, every radio message on health related issue seeks to positively influence the behaviour of the recipient; therefore, examining the pervasive persuasion in our environment—such as health social messages urging us to have good health behaviour. Persuasion frequently aims for action as its ultimate objective (Cajetan et al., 2021). The relevance is predicated on the fact that radio health programmes are designed to influence change positively. Therefore, this theory help us to understand that when people act in a particular way especially as it concern their health the media they are exposed to have a role to play in their behaviour.

### **Expanded Programme on Immunisation**

When it was introduced the Expanded Programme on Immunisation in 1974, the World Health Organization (WHO) kicked off the international movement to adopt immunisation as a public health intervention. Since then, immunisation has remained one of the public health programmes with the highest return on investment for lowering child death and morbidity worldwide (Machingaidze et al., 2013). The EPI programme is a model for how to handle the technical and administrative tasks necessary to regularly immunise children with a small number of vaccines, protecting them against diphtheria, tetanus, whooping cough, measles, polio, and tuberculosis, as well as to prevent maternal and neonatal tetanus by immunising women of childbearing age with tetanus toxoid (Shen et al., 2014).

EPI's initial objective was to offer a range of vaccinations to all kids via a simple schedule of well-child visits (Shen et al., 2014). At the time, this presented a challenge because most emerging and developing countries lacked or had poor health systems (Shen et al., 2014). Prior to the 1990s, when the majority of the developing countries set up immunisation programs based on the EPI plan, vaccine coverage was less than 5%. Millions of lives have likely been spared by the time the global aim of immunising 80% of children was considered accomplished in 1991 (Shen et al., 2014). These accomplishments were credited to the development of these nations' capacities and capabilities through the EPI plan created at the program's commencement (Shen et al., 2014).

### **Childhood Immunisation in Nigeria**

The global uptake of infant and childhood Immunisations is insufficient to curb diseases prevented by vaccines (MacDonald et al., 2018). Low- and middle-income nations responded by promoting baby and/or childhood immunisation as a requirement in order to address the problem. Since it has helped to eradicate the most lethal childhood diseases like polio worldwide, with the exception of a few nations, childhood immunisation is one of the major contributions to public health (Bugvi et al., 2014). In Nigeria, vaccine-preventable diseases (VPD) may kill 200,000 children annually, or 22% of all paediatric fatalities (Umoke et al., 2021). Immunisation has significantly reduced the prevalence of conditions such as disabilities, mental retardation, hearing loss or deafness, meningitis, intellectual disability, and mobility limitation (Goodman, 2022; Oli et al., 2021).

While some nations require Immunisations for all children regardless of parental consent, others ask for consent from guardians or other primary caretakers (Bugvi et al., 2014). The primary justification for mandatory immunisation has been the failure of less coercive strategies, such as public health educational campaigns, to encourage people to get immunised (LeBlanc, 2017), outbreaks of one or more vaccine-preventable diseases, and the failure to achieve the global vaccine preventable disease elimination goal (Ho, 2022). Nigeria, one of the nations that practise permissive Immunisations, has witnessed a large number of children suffering from various illnesses and disabilities as a result of parental resistance to immunisation, particularly in Northern Nigeria (Mustapha, 2015). Some of the debates have their roots in complexity of political, religious, and ethnic concerns that are made worse by inadequate literacy (Hashmi & Majeed, 2020). According to this, Nigeria has the 12th highest rate of under-five mortality.

Galadima et al., (2021) conducted a study on factors impacting children immunisation uptake in Africa. Factors identified as statistically significant in influencing childhood immunisation uptake were divided into modifiable and non-modifiable groups, and further grouped based on their importance. Modifiable elements encompass obstetric parameters, maternal knowledge, maternal attitude, self-efficacy, and maternal outcome expectations, while non-modifiable factors consist of the sociodemographic characteristics of both parent and child, as well as logistical and administrative issues (Sumaktoyo, 2021). Adedire et al., (2021) conducted a study on maternal knowledge, attitudes, and perceptions on the childhood regular immunization programme. It was revealed that mothers exhibited proficient knowledge of regular immunization and Vaccine preventable Disease, and the majority displayed a favourable attitude towards regular immunization programme. Abdullahi (2018) conducted a study on the determinants influencing the completion of childhood immunisation in North West Nigeria and it was found that a statistically significant correlation among four factors: education, wealth index, religious affiliation,

and healthcare costs, and the completion of immunisation regimens. The findings may enhance the probability of child immunisation in North West Nigeria and decrease childhood morbidity and mortality rates.

Ndijida et al., (2015) conducted a study on childhood immunisation and broadcast programmes in the Jos North Local Government Area. It was revealed that radio and television served as the primary source of knowledge for 94% of individuals informed about immunisation by these broadcasts. Sawitri (2021) indicated that most respondents harbourscepticism regarding immunisation; nonetheless, statistical analysis revealed no significant correlation between parental opinions and the completion of immunisation in children. Parental characteristics, specifically educational attainment, influence the completeness of basic immunisation in children, whereas other variables such as parental perceptions, age, monthly income, and family size do not impact this completeness.

Adenike et al., (2017) discovered that 177 (65.7%) respondents in rural areas and 241 (80.3%) in urban areas were cognisant of immunisation, with a statistically significant difference ( $p=0.016$ ). Urban respondents had superior knowledge compared to their rural counterparts. Kadijat et al., (2020) received complete immunisation. The findings indicate that children whose mothers have completed secondary education or higher, those whose mothers are married to their fathers, those born into Christian households, and those residing in urban areas are more likely to complete their immunisations due to the educational attainment of their parents, which influences their perceptions.

Abdalla (2022) conducted a study to evaluate parental knowledge and ascertain their perceptions regarding the significance of child immunisation. This study has also sought to identify the potential elements impacting parental decision-making on child immunisation. A community-based cross-sectional survey was performed in 2020 in the Sudair region of Saudi Arabia. It was revealed that the predominant source of the respondents' knowledge was indicated to have a significant impact on their perceptions about immunisation, followed by the Ministry of Health, family members, medical personnel, social media, and other influences.

### **3. Method**

In this investigation, the survey research design was used. Survey design enables for the sampling of opinion, perception and also allows for generalisation in a study (Chima, Onyebuchi et al., 2023). In line with the National Bureau of Statistics (2017), Owerri Metropolis has a population of 555,500. The sample size was determined using the Wimmer and Dominick online sample size calculator. Screenshot below will help to give proper understanding of how the sample size was derived.



**Sample Size Calculator**

Confidence level: ☒ 95% ☐ 99%

Margin of error (%):

Population size:

Sample size needed:

**Steps**

1. Confidence level: Click desired level
2. Margin of error: Enter desired %, such as 4.9 or 5.0
3. Population: Enter size if finite; otherwise, leave blank
4. Hit calculate button

**Fig. 1. Online Sample Size Calculator**

Therefore the sample size of the study was 384. For the sampling technique, the researchers used multistage sampling procedure. The rationale for using this technique was base on the fact that, it allows for covering of wide areas in research and it gives the researchers the opportunity to manage the respondents. Multistage sampling technique was used to select the representatives of the sample. At the first stage the researchers selected all the three local governments in Owerri Metropolis which includes; Owerri Municipal, Owerri North and Owerri West. At second stage, out of the three local governments, the researchers selected two localities from each local government area due to their potential exposure to radio station messages: Orji, Uratta, Umuguma, Eziobodo, Umuoyima, and Umuororonjo. This gives a total of six (6) communities to be studied. At third stage the researchers selected 64 residents purposively from each of the communities for the study, making a total of 384 residents from all the selected communities. At the fourth stage from the selected 64 residents, 384 copies of the questionnaire were distributed to them for adequate representation. This means that the researchers purposively distributed 64 copies of the questionnaire to each of the communities at a different day interval.

The instrument for data collection was questionnaire. The questionnaire was face validated by two communication experts in the department of Mass Communication, Imo State University, Owerri. Their corrections were incorporated in the final draft of the questionnaire. For the reliability, the test-retest approach was used after which it was subjected to Cronbach alpha with the use of SPSS version 21, the result showed .71 indicating the instrument is reliable. The researchers used the face-to-face approach to collect primary data from the respondents in the field after seeking their consent. The data collected was analysed using simple percentages presented in a tables.

## 4. Result and Discussion

### Result

The focus of this section is data presentation and analysis of data to enable the researcher to make inferences based on the results. Therefore, analysis was based on the retrieved copies of questionnaire that was used as the instrument for data collection. In this study a total of 384 copies of questionnaire were distributed to respondents. But then 366 (95.3%) copies were retrieved and found usable meaning 18 copies(4.7%) were excluded due to they were invalid. Therefore analysis was done with the 366 copies of the questionnaire.

### Research Question One: To what extent are residents exposed to Groove FM Health Arena programmes on childhood Immunisation in Owerri metropolis?

**Table 1.** RESPONDENTS RESPONSE ON THE EXTENT RESIDENTS ARE EXPOSED TO GROOVE FM HEALTH ARENA PROGRAMMES ON CHILDHOOD IMMUNISATION IN OWERRI METROPOLIS

Option	Frequency	Percentage (%)
Large extent	175	47.8%
Moderate	60	16.3%
Low extent	121	33.0%
Can't say	10	2.7%
<b>Total</b>	<b>366</b>	<b>100</b>

SOURCE: FIELD SURVEY, 2023

According to the above data analysis, it can be infer that 47.8% of the respondents are exposed to Groove FM Health Arena programmes on childhood Immunisation in Owerri metropolis. By implication of this finding many of the respondents are exposed to Groove FM Health Arena programmes on childhood Immunisation in Owerri metropolis.

### Research Question Two: To what extent exposure to Groove FM Health Arena programmes has enhanced residents' knowledge on the need for childhood Immunisation in Owerri metropolis?

**Table 2.** RESPONDENTS RESPONSE ON THE EXTENT EXPOSURE TO GROOVE FM HEALTH ARENA PROGRAMMES HAS ENHANCED RESIDENTS' KNOWLEDGE ON THE NEED FOR CHILDHOOD IMMUNISATION IN OWERRI METROPOLIS

Option	Frequency	Percentage (%)
Large extent	167	45.6%
Moderate	124	33.8%
Low extent	68	18.5%
Can't say	7	1.9%
<b>Total</b>	<b>366</b>	<b>100</b>

SOURCE: FIELD SURVEY, 2023

Analysis of data showed that 45.6% of the respondents studied confirmed that exposure to Groove FM Health Arena programmes has enhanced their knowledge on the need for childhood Immunisation in Owerri metropolis. This means that many of the respondents agreed that exposure to Groove FM Health Arena programmes has enhanced their knowledge on the need for childhood Immunisation in Owerri metropolis.



### Research Question Three: To what extent Groove FM Health Arena programmes influence Owerri metropolis residents in carrying out childhood Immunisation?

**Table 3.** RESPONDENTS RESPONSE ON THE EXTENT GROOVE FM HEALTH ARENA PROGRAMME INFLUENCE OWERRI METROPOLIS RESIDENTS IN CARRYING OUT CHILDHOOD IMMUNISATION

Option	Frequency	Percentage (%)
Large extent	171	46.7%
Moderate	129	35.2%
Low extent	55	15.0%
Can't say	11	3.0%
<b>Total</b>	<b>366</b>	<b>100</b>

SOURCE: FIELD SURVEY, 2023

Analysis of data from the above table revealed that 46.7% of the respondents indicated that Groove FM Health Arena programme has been able to influence them in carrying out childhood Immunisation to a large extent. This implies that through Groove FM Health Arena programmes most of the respondents confirmed that to a large extent they have carried out childhood Immunisation.

### Discussion

Findings from data analysis revealed that 47.8% of the respondents are exposed to Groove FM Health Arena programmes on childhood Immunisation in Owerri metropolis to a large extent. From this finding it is therefore obvious that respondents are exposed to Groove FM Health Arena programme on childhood Immunisation. This finding is in agreement with Ndijida et al., (2015) who revealed that radio television was the main source of awareness of 295 that is 94% among those who were aware of Immunisation through broadcast radio and television. The high level of percentage perhaps, could be as a result of the nature of radio and television which is more appealing to the sense of sight and sound. People tend to be more attracted this form of media because of their power of immediacy. Also in line with the finding is the study of Adenike et al., (2017) who found that 177 (65.7%) and 241 (80.3%) of respondents in rural and urban areas, respectively, were aware of Immunisation through different kind of communication channels. The finding regarding exposure in this study show great connection to previous studies as reviewed in this research. The implication of this finding in the study is that as these respondents are exposed to these health programme they tend to be influenced positively because the message is coming from a credible source. This is the position of the Yale persuasion theory this study was anchored on. All the immunisation messages aired through the electronic media are persuasive in nature so as to motivate parents to immunise their children as the Yale persuasion theory postulates that persuasion can lead to attitudinal change.

Finding from data analysed showed that 45.6% of the respondents confirmed that exposure to Groove FM Health Arena programmes has enhanced their knowledge on the need for childhood Immunisation in Owerri metropolis. In line with this finding, invariably the health programme has

contributed great deal on the knowledge level of respondents as it concern childhood Immunisation. This finding is consistent with Adedire et al., (2021) who found that 76% of mothers had good knowledge of routine Immunisation programme and that with the good knowledge majority of them demonstrated a positive attitude towards the routine Immunisation programme. However, Sawitri (2021) in their study reported the level of parents education always have a way in determining the completeness of basic Immunisation in children. In similar vein, there is great relationship between the finding of this study and previous research on immunization as they are all pointing towards good knowledge of immunisation programme.

Further finding revealed that 46.7% of the respondents indicated that Groove FM Health Arena programme has been able to influence them in carrying out childhood Immunisation to a large extent. In line with this finding is the study of Abdalla (2022) who revealed that respondent's knowledge have some form of influence on the idea of Immunisation. This could be because of the health benefits they stand to gain when immunized. Knowledge of immunization is an eye-opener in ensuring vaccine preventable deaths are completely avoided. Also in agreement is the study of Brown & Oluwatosin (2012) who revealed that the level of education or exposure of parents will in turn influence their perception positively towards Immunisation of the children. Also in consonance with this finding is the study of Sawitri (2021) who noted that people are bound to be influenced when they are very exposed and are educated. That is to say radio health programme can easily influence those that are educated especially when the programme falls within their frame of believe. The research conducted by Galadima et al., (2021) indicated that a significant factor affecting the uptake of immunisation among children under five in Africa is the provision of immunisation health education interventions targeted at pregnant women. Emphatically, what these scholars are saying is that education as well as exposure have great role in influencing the acceptance of immunisation. This outcome aligns with the Yale persuasion theory upon which this study is based. When one is exposed to persuasive messages to a great extent especially when such messages are positive or is beneficial to one's health the tendency of accepting the messages will be high.

In line with the findings, exposure and knowledge of people to these health programmes that talk about the need for immunisation it will further strengthen their belief or conviction on the immunisation policy in Nigeria that is primarily aimed at curtailing vaccine preventable deaths in Nigeria; because when properly exposed, they will have good knowledge of the importance of immunisation and be able to take certain decisions that bother on immunization. Thereby helping the government to meet its target of eradicating vaccine preventable deaths in Nigeria.

## 5. Conclusion

The rate at which children died of preventable death in the past is not the same in contemporary times because of the presence of vaccination. Based on the findings, it is believed that respondents are exposed to the Groove FM Health Arena programme on childhood Immunisation, and as a result of their exposure, they are knowledgeable about childhood Immunisation. In line with the finding, we therefore conclude that the Groove FM Health Arena programme has been able to influence residents in Owerri metropolis on the need for childhood Immunisation. In accordance with the findings, the following recommendations are given: The fact respondents are exposed to Groove FM Health Arena programme on childhood Immunisation to a large extent is commendable. Hence, the channel of communication should be leveraged on by ministry of health or centre for disease control to communicate important messages as it concerns health when the need arises. The producers of Health Arena programme should sustain their effort or even improve the content of the programme so as to continue enhancing audience knowledge on childhood Immunisation and other health issues. Residents should be encouraged to avail themselves to health programmes so as to be able to arm themselves with information that will help them in time of health issues or emergency. The following implications are that, this study will be of great benefit to the ministry of health as it will enable them to know the level of people exposure to childhood Immunisation in Owerri metropolis. It will also be of benefit to the broadcast industry as it will enable them equally to assess their contribution in creating awareness on the need of childhood Immunisation in Owerri metropolis and by extension Imo State. The findings will also benefit policy makers in Nigeria generally. Academically, this study will be of immense importance to scholars as it will serve as a resource material for referencing. Additionally, it will add to the body of literature in the field of health communication.

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## References

- Abdalla, S. M. (2022). Assessment of parent knowledge and perception towards the importance of child immunization in Sudair region, Saudi Arabia. *European Review for Medical and Pharmacological Sciences*, 26(6), 1803–1808. [https://doi.org/10.26355/eurev\\_202203\\_28323](https://doi.org/10.26355/eurev_202203_28323)
- Abdullahi, S. (2018). Factors affecting completion of childhood immunization in North West Nigeria. [search.proquest.com.https://search.proquest.com/openview/02e391e4574af73d079](https://search.proquest.com/openview/02e391e4574af73d079)

006b9f18f0d70/1?pq-origsite=gscholar&cbl=18750

- Achakpa-Ikyo, P., Anwam, S., Unongo, & Dogo, S. (2021). Influence Of Radio Awareness Messages On Knowledge And Reactions To Covid-19 Among Residents Of Makurdi Metropolis. *Peace Economics Peace Science and Public Policy*, 6, p70-85.
- Adedire, E. B., Ajumobi, O., Bolu, O., Nguku, P., & Ajayi, I. (2021). Maternal knowledge, attitude, and perception about childhood routine immunization program in Atakumosa-west Local Government Area, Osun State, Southwestern Nigeria. *The Pan African Medical Journal*, 40(Suppl 1), 8. <https://doi.org/10.11604/pamj.suppl.2021.40.1.30876>
- Adenike, O.-B., Adejumo, J., Olufunmi, O., & Ridwan, O. (2017). Maternal characteristics and immunization status of children in North Central of Nigeria. *Pan African Medical Journal*, 26. <https://doi.org/10.11604/pamj.2017.26.159.11530>
- Aigbefoh, G. O., Obi, R. M. A., & Asemah, E. S. (2022). Application of Yale's persuasion theory on advertising and political campaigns. *Discourses on Communication and ...*
- Bobo, F. T., Asante, A., Woldie, M., Dawson, A., & Hayen, A. (2022). Child vaccination in sub-Saharan Africa: Increasing coverage addresses inequalities. In *Vaccine*. Elsevier. <https://www.sciencedirect.com/science/article/pii/S0264410X21014390>
- Brown, V. B., & Oluwatosin, O. A. (2012). Socio-demographic factors associated with childhood immunization uptake in Akinyele Local Government Area, Oyo State, Nigeria. *African Journal of Medicine and Medical Sciences*, 41, 2, 161–167. <https://api.semanticscholar.org/CorpusID:23717350>
- Bugvi, A. S., Rahat, R., Zakar, R., Zakar, M. Z., Fischer, F., & ... (2014). Factors associated with non-utilization of child immunization in Pakistan: evidence from the Demographic and Health Survey 2006-07. In *BMC public health*. Springer. <https://doi.org/10.1186/1471-2458-14-232>
- Cajetan, I., Cynthia, J., & Etumnu, E. W. (2021). Influence of COVID-19 Broadcast Media Campaigns on the Health Consciousness of Owerri Residents. 2, 2550–7302.
- CDC. (2019). Why Vaccinate | CDC.
- Charbonneau, R. (2024). Why did Earth's first radio message to alien civilizations leave out half of humanity? In *Nature* (Vol. 635, Issue 8038, pp. 279–281). <https://doi.org/10.1038/d41586-024-03677-8>
- Chima, Onyebuchi, A., Nzube, Alaekwe, K., Umoren, P. E., Fatima, Emetumah, I., & Williams, Etumnu, E. (2023). Media Programmes on Domestic Violence against Men (DVAM) in Owerri Metropolis: A KAP Analysis. *South Asian Journal of Social Studies and Economics*, 20(3), 57–69. <https://doi.org/10.9734/sajsse/2023/v20i3713>
- Cook, S. (2012). The Hovland–Yale Model. In *Revise Psychology*. Retrieved Sept.
-

- Ezeaka, V. C. (2003). Physical health status of pupils in a school for the mentally disabled in Lagos. *The Nigerian Postgraduate Medical Journal*, 10(4), 238–242. <https://www.scopus.com/inward/record.uri?partnerID=HzOxMe3b&scp=2642572669&orig=in=inward>
- Galadima, A. N., Zulkefli, N. A. M., Said, S. M., & Ahmad, N. (2021). Factors influencing childhood immunisation uptake in Africa: a systematic review. *BMC Public Health*, 21(1), 1475. <https://doi.org/10.1186/s12889-021-11466-5>
- Garcia-Dia, M. J. (2017). Using text reminder to improve childhood immunization adherence in the Philippines. *CIN - Computers Informatics Nursing*, 35(4), 212–218. <https://doi.org/10.1097/CIN.0000000000000307>
- Goodman, S. (2022). Immunizations and vaccines. WebMD. <https://www.webmd.com/children/vaccines/immunizations-vaccines-power-of-preparation>
- Hashmi, D. R. S., & Majeed, D. G. (2020). Politics of ethnicity: A theoretical perspective. *South Asian Studies*. <https://journals.pu.edu.pk/journals/index.php/IJSAS/article/view/3001>
- Ho, L. L. (2022). Impact of the SARS-CoV-2 pandemic on vaccine-preventable disease campaigns. *International Journal of Infectious Diseases*, 119, 201–209. <https://doi.org/10.1016/j.ijid.2022.04.005>
- Homel, J., & Edwards, B. (2018). Factors associated with delayed infant immunization in a nationally representative cohort study. *Child: Care, Health and Development*. <https://doi.org/10.1111/cch.12560>
- Ijioma, N. E., & Nze, C. (2022). Evaluating the Influence of Social Media Use in COVID-19 Vaccine Hesitancy of Residents of Owerri Metropolis. *Advances in Journalism and Communication*, 10(01), 10–24. <https://doi.org/10.4236/ajc.2022.101002>
- Kadijat, K. K., Ayotunde, K. A., & Haroon-Sulyman, S. O. (2020). Twitter Discourse on the Pre-Presidential Election Campaign in Nigeria. *Jurnal The Messenger*, 12(2), 134. <https://doi.org/10.26623/themessenger.v12i2.2457>
- LeBlanc, J. J. (2017). Burden of vaccine-preventable pneumococcal disease in hospitalized adults: A Canadian Immunization Research Network (CIRN) Serious Outcomes Surveillance (SOS) network study. *Vaccine*, 35(29), 3647–3654. <https://doi.org/10.1016/j.vaccine.2017.05.049>
- MacDonald, N. E., Harmon, S., Dube, E., Steenbeek, A., & ... (2018). Mandatory infant & childhood immunization: Rationales, issues and knowledge gaps. In *Vaccine*. Elsevier. <https://www.sciencedirect.com/science/article/pii/S0264410X1831171X>
- Machingaidze, S., Wiysonge, C. S., & Hussey, G. D. (2013). Strengthening the Expanded Programme on Immunization in Africa: Looking beyond 2015. *PLoS Medicine*, 10(3), e1001405.

- <https://doi.org/10.1371/journal.pmed.1001405>
- Mustapha, A. R. (2015). Conflict in Northern Nigeria, Martlesham: James Currey. In *Africa Spectrum*. [journals.sub.uni-hamburg.de. https://journals.sub.uni-hamburg.de/giga/afsp/article/viewPDFInterstitial/894/901](https://journals.sub.uni-hamburg.de/giga/afsp/article/viewPDFInterstitial/894/901)
- Ndijida, M. A., Fatunke, E. T., & Ilesanmi, O. S. (2015). Childhood immunization and broadcast programmes in Jos North Local Government Area of Plateau State. In *Jos Journal of Medicine*. [ajol.info. https://www.ajol.info/index.php/jjm/article/view/143935/133639](https://www.ajol.info/index.php/jjm/article/view/143935/133639)
- Odoemelam, Q. O., Ehiagwina, V., & Asemah, E. S. (2024). Chapter Twenty One Does Yale's Persuasion Theory Encourage Purchasing Behaviour? In *Case Studies In Public ...* [researchgate.net.https://www.researchgate.net/profile/Ezekiel-Asemah/publication/381636472\\_Case\\_Studies\\_in\\_Public\\_Relations\\_Advertising\\_and\\_Behavioural\\_Change\\_Communication/links/6677427f8408575b83826926/Case-Studies-in-Public-Relations-Advertising-and-Behavioural-Change-](https://www.researchgate.net/profile/Ezekiel-Asemah/publication/381636472_Case_Studies_in_Public_Relations_Advertising_and_Behavioural_Change_Communication/links/6677427f8408575b83826926/Case-Studies-in-Public-Relations-Advertising-and-Behavioural-Change-)
- Odutola, A., Afolabi, M. O., Ogundare, E. O., & ... (2015). Risk factors for delay in age-appropriate vaccinations among Gambian children. In *BMC health services .... Springer*. <https://doi.org/10.1186/s12913-015-1015-9>
- Oli, A. N., Ogwaluonye, U. C., Onubogu, C. U., & ... (2021). Public knowledge and opinion on childhood routine immunizations in two major cities of Anambra state, Nigeria. *Journal of ...* <https://doi.org/10.2147/JMDH.S279397>
- Oluwafemi, F. T. (2012). Aflatoxin M1 levels in lactating mothers in two Nigerian cities. *Archives of Clinical Microbiology*, 3(4). <https://doi.org/10.3823/257>
- Omoankhanlen, J. A. (2021). The Role of Oziza FM Radio Programme "Akuko Siri" In Opinion Moulding Among IMO State Residents. *International Journal of Social Sciences and Management Review*, 4(August), 96–101.
- Organization, W. H. (2008). Detection and investigation of serious adverse events following yellow fever vaccination. [http://www.who.int/csr/resources/publications/HSE\\_GAR\\_ERI\\_2010\\_2/en/](http://www.who.int/csr/resources/publications/HSE_GAR_ERI_2010_2/en/)
- Phadke, V. K., Bednarczyk, R. A., Salmon, D. A., & Omer, S. B. (2016). Association Between Vaccine Refusal and Vaccine-Preventable Diseases in the United States. *JAMA*, 315(11), 1149. <https://doi.org/10.1001/jama.2016.1353>
- Prevention, C. for D. C. and. (2023). Immunization prevent death worldwide. <https://www.cdc.gov/globalhealth/immunization/data/fast-facts.html>
- Qazi, U. (2019). Compliance to timely vaccination in an Expanded Program on Immunization center of Pakistan. *Vaccine*, 37(32), 4618–4622.



<https://doi.org/10.1016/j.vaccine.2018.01.044>

- Sawitri, A. A. S. (2021). Limitations of immunization registers at community health centers for measuring immunization coverage: A case study of the japanese encephalitis mass immunization program in bali province, indonesia. *Osong Public Health and Research Perspectives*, 12(3), 158–168. <https://doi.org/10.24171/J.PHRP.2020.0241>
- Shen, A. K., Fields, R., & McQuestion, M. (2014). The future of routine immunization in the developing world: challenges and opportunities. *Global Health: Science and Practice*, 2(4), 381–394. <https://doi.org/10.9745/GHSP-D-14-00137>
- Sumaktoyo, N. G. (2021). Ethnic and religious sentiments in Indonesian politics: evidence from the 2017 Jakarta gubernatorial election. *Journal of East Asian Studies*. <https://www.cambridge.org/core/journals/journal-of-east-asian-studies/article/ethnic-and-religious-sentiments-in-indonesian-politics-evidence-from-the-2017-jakarta-gubernatorial-election/41525EFE460475557CBDBDEF5D0F9B66>
- Syahdan, R. (2022). Communication and information system for individual performance. *International Journal of Communication and Society*; Vol 4, No 2 (2022): December. <https://doi.org/10.31763/ijcs.v4i2.619>
- Talabi, F. O. (2024). Influence of Radio Messages on the Awareness and Adoption of Malaria Preventive Measures among Rural Dwellers in South-West Nigeria. *Journalism and Media*, 5(1), 271–280. <https://doi.org/10.3390/journalmedia5010018>
- Thomas, S., Abraham, A., Rodríguez-Mallon, A., & ... (2022). Challenges in veterinary vaccine development. ... Design: Methods and .... [https://doi.org/10.1007/978-1-0716-1888-2\\_1](https://doi.org/10.1007/978-1-0716-1888-2_1)
- Umoke, P. C. I., Umoke, M., Nwalieji, C. A., Igwe, F. O., Umoke, U. G., Onwe, R. N., Nwazunku, A. A., Nwafor, I. E., Chukwu, O. J., Eyo, N., Ugwu, A., Ogbonnaya, K., Okeke, E., & Eke, D. O. (2021). Investigating Factors Associated with Immunization Incompletion of Children Under Five in Ebonyi State, Southeast Nigeria: Implication for Policy Dialogue. *Global Pediatric Health*, 8. <https://doi.org/10.1177/2333794X21991008>
- Vivian, U., Chinwe, D., Una, A., Thecla, Ch., & Kingsley, O. (2020). Evaluación de los conocimientos y actitudes de las madres como factor que contribuye a la baja tasa de inmunización infantil en el estado de Ebonyi, Nigeria. *African Journal of Medical and Health Sciences*, 19(8), 127–135. <https://doi.org/10.5897/AJMHS2020.0107>
- WHO. (2019). Estimates of disease burden and cost-effectiveness. World Health Organization. World Health Organization.
- WHO. (2020). Immunisation coverage. World Health Organization.