

Critique on nigeria polio immunization health and social care essay



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This chapter will present critical appraisal of the selected articles included in this study using the Critical Appraisal Skill Program (CASP) adapted from Public Health Resource Unit of the National Health Service (NHS), UK and a quantitative appraisal tool adapted from the University of Salford, UK. It will also present the findings of the retrieved studies on the factors affecting polio immunization in Nigeria positively or negatively. The studies included are as follows: 2 Case-control studies; Jenkins, et al (2008) titled- Effectiveness of Immunization against Paralytic Poliomyelitis in Nigeria, and Jenkins, et al (2010) titled- Implications of a Circulating Vaccine-Derived Poliovirus in Nigeria. 3 Qualitative studies; Babalola & Adewuyi (2005) titled- Factors influencing Immunization uptake in Nigeria: Theory-based Research in Six States, Oluwadare (2009) titled- The Social Determinants of Routine Immunisation in Ekiti State of Nigeria, and Renne, E. (2006) Perspectives on polio and immunization in Northern Nigeria and 5 Quantitative studies; Adeyinka et al (2009) titled- Uptake of Childhood Immunization Among Mothers of Under-Five In Southwestern Nigeria, Antai (2009) titled- Inequitable childhood immunization uptake in Nigeria: a multilevel analysis of individual and contextual determinants, Antai (2010) titled- Migration and child immunization in Nigeria: individual- and community -level contexts, Ngowu et al (2008) titled- Reducing child mortality in Nigeria: a case study of immunization and systemic factors, and Odusanya et al (2008) titled- Determinants of vaccination coverage in rural Nigeria.

Table 1: Summary of included and excluded studies

Database	Number of studies retrieved	Included studies	Excluded studies
AMEDCINAHL	1803505002414178346486		
MEDLINE			
TOTAL	1030201010		

After an extensive search, 20 studies were included initially, however when the studies were critically appraised 10 studies did not meet the quality of a good study because some of them were communications and some did not answer up to 3 questions in the critical appraisal tools signifying lack of credibility and they were then excluded leaving only 10 studies which were then appraised. The tables below illustrate the critical appraisal of included studies.

Table 2: Critical appraisal of Case-control studies

Author and date

Jenkins et al (2008)

Did the study address a clearly focused issue?

Yes, the study addressed a clearly focused issue which was the estimate of the field efficacies of monovalent type 1 and oral poliovirus vaccine in children with acute flaccid paralysis caused by poliovirus and a matched control of children with acute flaccid paralysis not caused by poliovirus

Did the authors use an appropriate method to answer their question?

Yes, the authors recruited cases with a matched control to test the efficacy of monovalent and trivalent oral polio vaccine. Therefore, a case-control study is appropriate

Where the cases recruited in an acceptable way?

Yes, the cases were defined precisely and they represent a defined population (Nigeria). Furthermore, a total of 21, 815 cases were recruited

and were confirmed subject to clinical, epidemiological and laboratory investigations

Where the controls selected in an acceptable way?

Yes, the controls were selected in an acceptable way as the cases and they were matched in a 1: 1 ratio. Furthermore, the matching was based on age and region and there was no evidence of selection bias as controls were selected randomly

Was the exposure accurately measured to minimize bias?

Yes, the measurement of exposure between cases and controls was similar because all cases of acute flaccid paralysis were investigated before confirmation of poliovirus status ensuring blinding of the researchers and parents/guardians of the children recruited during dose-response interviews which minimized the risk of systematic bias

What confounding factors have the authors accounted for?

The authors accounted for environmental factors as confounding factors. However, the authors should have considered socioeconomic factors such as education and income level. Nevertheless, the authors have taken into account of the potential confounding factors in their analysis using a conditional logistic-regression analysis of the 1: 1 matched data

What are the results of the study?

In line with the aim of the study, the authors stated that; the estimated efficacy of trivalent oral poliovirus vaccine against paralysis from type 1 poliomyelitis across Nigeria to be 16% (95% confidence interval [CI] 10-21)

per dose, and efficacy against type 3 was 18% (95% CI 9-26). The efficacy of monovalent oral polio vaccine against type 1 to be 67% (95% CI 39-82)

How precise are the results?

The P value of the results is stated to be ($p < 0.001$) in each case. On the other hand it was stated clearly that the probability of misclassifying a case was $p = 0.0011$ for type 1 poliovirus and $p = 0.0006$ for type 3 poliovirus

Do you believe the results?

Yes, due to higher matching of cases and controls and sensitivity analyses carried out by the authors, the results can be said to be robust. Furthermore, the authors assessed the validity of reporting constant efficacy per dose of vaccine by means of a likelihood-ratio test

Can the results be applied to the local population?

Yes, the subjects covered by the study represents the whole study area (Nigeria) because the authors considered recruiting subjects from all the six geo-political zones of the country

Do the results of this study fit with other available evidence?

Yes, there was similar evidence from another study conducted in India (which is another polio endemic country as evidenced by the literature)

Author and Date

Jenkins et al (2010)

Did the study address a clearly focused issue?

Yes, the study addressed a clearly focused issue which was implications of a circulating vaccine derived poliovirus in Nigeria where they identified cases of acute flaccid paralysis associated with fecal excretion of type 2 circulating vaccine derived poliovirus (cVDPV), type 1 wild poliovirus (WPV), or type 3 WPV in which the clinical characteristics of these cases, clinical attack rates for each virus, and the effectiveness of oral poliovirus vaccine in preventing paralysis from each virus were compared

Did the authors use an appropriate method to answer their question?

Yes, the authors recruited cases of acute flaccid paralysis associated with fecal excretion of type 2 cVDPV, type 1 WPV or type 3 WPV and compared them with suitable controls on the basis of age, date of onset of the paralysis and residence. Therefore, a case-control study is appropriate to address the issue

Were the cases recruited in an acceptable way?

Yes, the cases were defined precisely based on having acute flaccid paralysis using clinical, epidemiologic and laboratory investigations. Furthermore, they represent a defined population of children younger than 15 years of age in Nigeria

Were the controls selected in an acceptable way?

Yes, the controls were selected in an acceptable way as they were matched with the cases in a 1: 1 ratio and the matching was based on the same criteria of recruiting the cases as mentioned earlier

Was the exposure accurately measured to minimize bias?

Yes, the measurement methods in cases and controls were similar because both subjects were subjected to clinical, epidemiologic and laboratory investigation before categorizing

What confounding factors have the authors accounted for?

The authors stated socio-economic factors as possible confounding factors but applied a regression model to control the confounders

What are the results of this study?

The bottom line result of the study was that the cases of acute flaccid paralysis with type 2 cVDPV were broadly similar to those with type 1 WPV or type 3 WPV in terms of the distribution of age and sex and there were no significant differences in the severity of the clinical disease

How precise are the results?

The estimated effectiveness of a dose of trivalent oral poliovirus vaccine was greater against paralysis resulting from type 1 WPV ($p= 0.04$) and type 3 WPV ($p= 0.12$). Furthermore, the authors added that serotype 1 monovalent oral polio vaccine was significantly more protective than trivalent oral polio vaccine against paralysis from type 1 WPV ($p < 0.001$) and serotype 3 monovalent oral polio vaccine was non-significantly more protective than trivalent oral poliovirus vaccine against paralysis from type 3 WPV ($p= 0.08$)

Do you believe the results?

Yes, tighter matching of cases and controls and also matching of the cases and controls (subjects) based on district rather than state resolved systematic bias and enables the results to be robust

Can the results be applied to the local population?

Yes, the subjects recruited for the study represent the study area (Nigeria) because the authors recruited from all six geo-political zones of the country

Do the results of this study fit with other available evidence?

The findings of the study is said to be consistent with the higher rates of sero-conversion to cVDPV observed after administration of trivalent oral polio vaccine in other developing countries

Table 3: Critical appraisal of qualitative study**Author and Date**

Renne (2006)

Was there a clear statement of the aims of the research?

Yes, the author aimed at examining the reasons for the difficulties in eradicating polio in Northern Nigeria.

Is a qualitative methodology appropriate?

Yes, examining people's perception on a particular health issue requires a qualitative approach.

Was the research design appropriate to address the aims of the research?

Yes, evaluating people's perception can be achieved using a qualitative approach.

Was the recruitment strategy appropriate to the aims of the research?

Yes, it is appropriate because the recruitment strategy which is snow-ball sampling will enable the researcher to identify the participants affected by polio immunization.

Where the data collected in a way that addressed the research issue?

Yes, the method of data collection stated included: participant observation, open-ended interviews by a snow-ball sampling, and collection of polio-related documents.

Has the relationship between the researcher and participants been adequately considered?

No, there was no evidence of reflexivity

Have ethical issues been taken into consideration?

Yes, the issue of confidentiality was considered. However, the author did not state evidence of consent taken and ethical clearance from an ethical research committee having dealt with human subjects.

Was the data analysis sufficiently rigorous?

Yes, the data collection was rigorous evidenced by verbatim quoting and transcription of different codes.

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Is there a clear statement of findings?

Yes, political will, low level of education, improper training of health workers, religious belief, public distrust, ethnicity, health inequity, breakdown of primary health care clinics and hospitals at local levels affect polio immunization uptake.

How valuable is the research?

The findings were related to both current practice and relevant research-based literature.

Author and Date

Oluwadare (2009)

Was there a clear statement of aims?

Yes, the study was aimed at explaining the intractable plummeting trend of immunisation in Nigeria and in Ekiti State as a case study

Is a qualitative methodology appropriate?

Yes, the author employed the use of focus groups interviews, key informant interviews, and semi-structured interviews for data collection, therefore, a qualitative methodology is appropriate

Was the research design appropriate to address the aims of the research?

Yes

Was the recruitment strategy appropriate to the aims?

Yes, the author recruited a mix of population groups residing in the study area and it is suitable (necessary) in achieving the set aim of the study

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Were the data collected in a way that addressed the research issue?

Yes

Has the relationship between researcher and participants been adequately considered?

No, there was no evidence

Have ethical issues been taken into consideration?

No, despite using human subjects there was no evidence of ethical approval stated by the author

Was the data analysis sufficiently rigorous?

Yes, there is evidence of verbatim quoting which can confer rigour to the study

Is there a clear statement of findings?

Yes, area of settlement (rural/urban factor), bad road networks and poor vaccine supplies were the factors that affect immunisation uptake in the study area

How valuable is the research?

The findings were related to relevant research based literature

Author and Date

Babalola & Adewuyi (2005)

Was there a clear statement of the aims of the research?

Yes, the aim of the research was to identify demand side factors that influence immunization uptake in Nigeria and make recommendations to policy makers

Is a qualitative methodology appropriate?

Yes, a qualitative methodology can be deemed appropriate in addressing the above aim of the research and considering the fact that interviews were administered, it is appropriate

Was the research design appropriate to address the aims of the research?

Yes

Was the recruitment strategy appropriate o the aims?

The recruitment strategy is OK because participants were recruited from five of the six-geo-political zones of the country. However, one of the regions was left out. Nonetheless, the recruitment strategy could enable the authors achieve their set aim

Were the data collected in a way that addressed the research issue?

Yes

Has the relationship between researcher and participants been adequately considered?

No, there was no evidence of reflexivity

Have ethical issues been taken into consideration?

No, there was no detail of how ethical approval was sought nor the issues around informed consent or confidentiality

Was the data analysis sufficiently rigorous?

Yes, there was use of thematic analysis and the themes were derived from the data

Is there a clear statement of findings?

Yes, socio-demographic factors such as; poverty, religion, accessibility, low literacy level, place of birth (rural or urban), personal efficacy, myths and rumours. Vaccine availability, coverage, and efficacy were also among the key issues affecting immunization uptake

How valuable is the research?

The findings from the study provide important information about immunization practices in Nigeria- because the survey was theory-based and will enable easy establishment of scientific sound bias for programming

Table 4: Critical appraisal of quantitative studies**Author and Date**

Antai (2009)

What are the aims of the study?

The aim of the study was to assess the individual-level determinants of full immunization, by sequentially controlling for explanatory factors; and determine whether community-level explanatory factors account for variations in full immunization

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What are the key findings?

The key findings are: deficiency in vaccine supplies, inequitable access to immunization services, and socio-economic status

What type of study is this?

Quantitative

What are the strengths and weaknesses?

Strengths: statistical methods used that control the potential confounding variables, there was triangulation in the study; with nested case-control, normalised sample weights were clearly stated to be used in all analyses to adjust for non-response and enable generalisation of the findings to the general population Weaknesses: there is possibility for recall bias; because while gathering the data, in cases of absence of vaccination cards, mothers were asked to recall whether their child had received the vaccinations

With what geographical setting was the study considered?

Nigeria, Africa

What are the inclusion criteria?

The inclusion criteria was: children under 5 years of age and females aged 15-49

What are the exclusion criteria?

The exclusion criteria was: children above 5 years of age and females younger or above 15-49 years

How was the sample selected?

The sample was selected using stratified two-stage cluster sampling procedure

What was the sample size of the sample?

7864

Is the sample size sufficient?

Normalised sample weights were clearly stated to be used in the analyses to adjust for non-response and enable generalisation of the findings to the general population. Therefore, sample size was sufficient

What are the key sample characteristics in relation to the topic?

Majority of the participants were children under 5 years of age and females aged 15-49 and the participants represent each class of income or socio-economic status and share a particular location; the study area.

Have ethical issue been taken into consideration?

Yes, ethical issues were fully considered and informed consent of the participants prior to commencement of the study was sought

How were important confounding variables controlled?

Statistically using stratified two-stage cluster sampling procedure and multilevel multivariate regression analysis

Are the measures well validated?

Yes, Level of education of mothers; low OR= 0.75 (95% CI 0.55-1.06),

middle OR= 1, high OR= 1.02 (95% CI 0.73-1.41), Community hospital

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delivery; low OR= 0. 62 (95% CI 0. 40-0. 94), middle OR= 1, high OR= 1. 12 (95% CI 0. 75-1. 68), Wealth index; poorest OR= 0. 35 (95% CI 0. 21-0. 59), poorer OR= 0. 47 (95% CI 0. 27-0. 81), middle OR= 0. 64 (95% CI 0. 42-0. 97), richer OR= 0. 57 (95% CI 0. 37-0. 84), richest OR= 1

To what extent and the population are the findings generalisable?

This study can be generalised to the study area because the author considered participants from different regions, levels of education, wealth quintile as well as community hospital delivery.

Author and Date

Antai (2010)

What are the aims of the study?

The aim of the study was to examine the effects of individual and community level characteristics of migrant groups on the likelihood of the full immunization uptake of their children in Nigeria

What are the key findings?

The key findings are: widespread disparities in immunization coverage between regions, socioeconomic, demographic, and cultural factors, and population migration from rural to urban areas

What type of study is this?

Quantitative

What are the strengths and weaknesses?

Strengths: statistical methods used that control the possible confounding variables there was also triangulation in the study; with nested case

controlWeaknesses: there was room for recall bias while gathering the data

With what geographical setting was the study considered?

Nigeria, Africa

What are the inclusion criteria?

The inclusion criteria was: children under 5 years of age and females aged 15-49

What are the exclusion criteria?

The exclusion criteria was: children above 5 years of age and females younger or above 15-49 years

How was the sample selected?

The sample was selected using stratified two-stage cluster sampling procedure

What was the size of the sample?

The author stated that a total of 6029 children were nested within 3725 mothers who were in turn nested within 365 communities

Is the sample size sufficient?

Yes

What are the key sample characteristics in relation to the topic?

Majority of the participants were children under 5 years of age and females aged 15-49 and the participants represent each class of income or socio-economic status and share a particular location; the study area.

Have ethical issue been taken into consideration?

Yes, ethical issues were fully considered and informed consent of the participants prior to commencement of the study was sought

How were important confounding variables controlled?

The author stated the potential confounding variable to be child-and mother-level characteristics and they were controlled using stratification and multilevel multivariate regression analyses

Are the measures well validated?

Yes, mothers age; 15-18 OR= 0. 50 (95% CI 0. 22-1. 12), 19-23 OR= 0. 81 (95% CI 0. 54-1. 21), 24-28 OR = 1, 29-33 OR= 1. 08 (95% CI 0. 75-1. 55) ≥ 34 OR= 1. 54 (95% CI 1. 03-2. 30), mothers' level of education; no education OR= 0. 72 (95% CI 0. 50-1. 03), primary OR= 0. 97 (95% CI 0. 69-1. 36), secondary or higher OR= 1, wealth index: poorest OR= 0. 45 (95% CI 0. 26-0. 77), poorer OR= 0. 43 (95% CI 0. 26-0. 70), middle OR= 0. 62 (95% CI 0. 41-0. 95), richer OR= 0. 54 (95% CI 0. 37-0. 78), richest OR= 1

To what extent and the population are the findings generalisable?

This study can be generalised to the study area because the author considered participants from different regions, level of education, and wealth quintile

Author and Date

Ngowu et al (2008)

What are the aims of the study?

The aim of the study was to assess the outcome of expanded program on immunisation in Nigeria as well as to examine systemic factors influencing its high under five mortality rates

What are the key findings?

The key findings of the study are: low literacy rates, and inadequate spending on health care

What type of study is this?

Quantitative

What are the strengths and weaknesses?

Strengths: the use of statistical model which was multiple regression with auto-correlation adjustment methods to control the potential confounding factors, and evidence of no missing data was clearly stated
Weaknesses:
There is no evidence of controlling or adjusting bias in the study

With what geographical setting was the study considered?

Nigeria, Africa

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What are the inclusion criteria?

Not clearly stated

What are the exclusion criteria?

Not clearly stated

How was the sample selected?

Not clearly stated

What was the size of the sample?

The authors dealt with data from reliable survey sources and did not clearly state the number or sample size

Is the sample size sufficient?

Can't tell, based on the use of survey data from other sources

What are the key sample characteristics in relation to the topic?

All surveys carried out in relation to immunization programs in Nigeria

Have ethical issue been taken into consideration?

Yes, permission for all information obtained were sought

How were important confounding variables controlled?

The authors did take into account potential confounders to be corruption, instability in government, tribal resistance to immunization ion rural areas, and technical problems in delivering vaccines to remote areas. However, the statistical models employed in the study which is multiple regression with auto-correlation adjustment have taken care of the confounders

Are the measures well validated?

Yes, the results show that literacy rate is inversely related to the under five mortality rate and is statistically significant at 99% ($p < 0.001$) and is consistent with both theory and previous works, the results also stated that the primary health care plan had a relationship to under five mortality rate and the result is statistically significant at 99.9% ($p < 0.001$)

To what extent and the population are the findings generalisable?

The findings of this study can be generalised to the study area due to the credible sources of the primary data, and due to the hypotheses generated and analysed

Author and Date

Odusanya et al (2008)

What are the aims of the study?

The aim of the study was to assess vaccination coverage for childhood vaccines and maternal factors impacting coverage in a rural community of Sabongida-Ora in Edo State, Nigeria

What are the key findings?

Maternal factors were most strongly associated with non-completion of vaccination, the most frequent was lack of awareness of the need for immunization, and the sensitivity and accuracy of maternal recall of adequacy of vaccination showing it may be possible to rely on maternal history to determine vaccination coverage in the community the study was carried out

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What type of study is this?

Quantitative

What are the strengths and weaknesses?

Strengths: sample size calculation methodology was stated, clear statement of inclusion and exclusion criteria, sensitivity analyses and multiple logistic regression method to control potential confounders, the use of spinning-bottle method in data collection will help control selection bias
Weaknesses: there was no mention of how interviewer bias was controlled despite using interviewer-administered questionnaire as the survey instrument

With what geographical setting was the study considered?

Nigeria, Africa

What are the inclusion criteria?

Mothers/caregivers who live in and around Sabongida-Ora and have children who were born between 01/10/2004 and 31/08/2005 (12-13 years old)

What are the exclusion criteria?

Subjects whose ages were outside the eligible age group and those with incomplete vaccination records were excluded from the data analysis

How was the sample selected?

The sample was selected using spinning bottle method

What was the size of the sample?

339 mothers and 339 children (each mother had an eligible child)

Is the sample size sufficient?

The sample size calculation methodology stated by the authors was that of WHO immunization coverage cluster survey reference manual and the number of children required from the study area was 312 and 339 children were recruited. Therefore, the sample size is sufficient

What are the key sample characteristics in relation to the topic?

Mothers/caregivers who live in and around Sabongida-Ora and have children who were 12-13 years old

Have ethical issue been taken into consideration?

Yes, the ethical approval was granted by the ethics committee of Ambrose Alli University College of medicine and also from the community leaders. Furthermore, consent was obtained from the eligible mothers/caregivers included

How were important confounding variables controlled?

The authors acknowledged maternal education to be among the confounding variable and it was controlled by statistical model analyses

Are the measures well validated?

Yes, the results present education level of mothers; none/primary OR= 1, secondary/University (OR= 1. 79 95% CI = 0. 97-3. 31) (p= 0. 064), knowledge score categorized; poor OR= 1, satisfactory OR= 0. 31 (95% CI= 0. 13-0. 72) (p= 0. 006), place of vaccination Glaxo Smith Kline OR= 30. 39 (95% CI= 14. 12-65. 42) (p <0. 001) Government/Private OR= 1

To what extent and the population are the findings generalisable?

The findings of this study can be applied to rural areas of mid-western Nigeria because residents share common characteristics and such studies need to be repeated in other parts of the country for more generalisability

Author and Date

Adeyinka et al (2009)

What are the aims of the study?

The study aimed at determining the awareness and attitude of mothers of under-five towards immunization and proportion of children fully immunized in the 12-28 months

What are the key findings?

Long waiting queues, payment at private clinics, distance, were the key findings of the study and the authors concluded that lack of political will, lack of motivation, and infrastructure are the factors attributed low level of immunization in Nigeria

What type of study is this?

Quantitative

What are the strengths and weaknesses?

Strengths: the use of random cluster sampling, recruitment strategy will help control selection bias, clear statement of methodology, clear inclusion and exclusion criteria, ethical consideration
Weaknesses: there was no mention of

how interviewer bias was controlled despite using interviewer-administered questionnaire as the survey instrument

With what geographical setting was the study considered?

Nigeria, Africa

What are the inclusion criteria?

Mothers with children under-5 years of age born between 12th February to 6th April, 2008

What are the exclusion criteria?

Mothers with children under-5 years of age not born between 12th February to 6th April, 2008

How was the sample selected?

The sample was selected using cluster random sampling technique

What was the size of the sample?

503

Is the sample size sufficient?

Based on the sample size calculation 124 mothers was the minimum sample size

What are the key sample characteristics in relation to the topic?

Mothers with children under-5 years of age born between 12th February to 6th April, 2008 who live in around Igbo-Ora, Oyo State, Nigeria

Have ethical issue been taken into consideration?

Yes, permission to administer questionnaires was obtained at the various centers and a verbal consent was obtained from the respondents after they had been fully counseled about the study via a written consent

How were important confounding variables controlled?

The potential confounding variables were controlled using multi-variate analysis

Are the measures well validated?

Yes, the measures were well validated using statistical tests; Chi-square test, fisher exact test for categorical variables while T-test was used to compare means of continuous variables and logistic regression for multi-variate analysis. Overall, the level of statistical significance was $p = 0.05$

To what extent and the population are the findings generalisable?

The findings of this study can be applied to rural areas of south-western Nigeria because residents share common characteristics. However, studies need to be repeated in other parts of the country for more generalisability.

4. 5 STUDIES USED; STRENGTHS, WEAKNESSES, AND METHODOLOGICAL SCORING

In this section, the author seeks to explain the various studies used in the thematic analysis thereby highlighting their strengths, weaknesses, and score the articles according to the screening questions in the appraisal tools (methodological scoring).

4. 6 CASE-CONTROL STUDY

A case-control study is an observational epidemiological study that measures and compares the prevalence of exposure to a factor among persons with an outcome of interest (cases) and a suitable group of persons without that particular outcome (control). If the prevalence of exposure is higher in the cases than in the controls, the exposure might be a risk factor for the outcome. If it is lower, the exposure might be a protective factor for the outcome. (Porta, 2008; Rothman et al, 2008) Case-control studies are applicable to chronic diseases, infectious diseases and injuries, and evaluating population-based interventions (Friis & Sellers, 2004). With respect to this research, Jenkins et al (2008) estimated the field efficacies of monovalent and trivalent oral poliovirus vaccines in Nigeria; which is an evaluation of a population-based intervention, while Jenkins et al (2010) studied the implications of vaccine-derived polioviruses in Nigeria; an infectious disease study. Methods of data collection for case-control studies include: standard interviews or questionnaires, hospital records, industrial records, health insurance forms, and demographic survey records. Collection of data often requires communication with participants in person, by mail or by telephone (in industrialised countries). (Friis & Sellers, 2004) The advantages of case-control studies include: affordability; it is relatively cheap, relatively quick to complete, can investigate a broad range of possible risk factors useful in identifying rare effects of treatment, useful for investigating rare diseases, can employ expensive or time-consuming tests, no loss to follow up, can test current hypotheses, consistency of measurement techniques maintained. (Adetunji, 2009) Conversely, the disadvantages of case-control studies include: being prone to selection and <https://assignbuster.com/critique-on-nigeria-polio-immunization-health-and-social-care-essay/>

observer bias, not suitable for investigating rare exposures, and cannot obtain estimate of disease incidence. (Adetunji, 2009)The case-control studies used in this research were appraised using the following themes: research question, appropriateness of the methodology, recruitment strategy, exposure measurement, confounding factors, results, applicability and consistency of the results (refer to table 2).

4. 6. 1 Methodological scoring

Based on the above, the articles were scored upon satisfaction of each theme. Plus (+) or minus (-) were used to denote whether a theme was satisfied or not. The total score based on the screening questions was 11, score below 4 was interpreted as low quality, and score between 4 and 8 interpreted as medium quality and score above 8 is considered to be of high quality. The case-control studies appraised; Jenkins et al (2008) and Jenkins et al (2010) (refer to table 2) had a score of 10. 5 and 11 respectively, therefore, they are considered to be of high quality.

4. 7 QUALITATIVE STUDY

Qualitative research is an important tool for understanding the emotions, perceptions and actions of people suffering from a medical condition (Avis, 2005). The author further added that qualitative research can help provide insights for developing health or education policies through observing and or interacting with people; by asking questions about their behaviour.

(Holloway, 2005) highlighted that qualitative research mainly employs methods of inquiry that produce text rather than numbers and the sources of these text could be transcripts of interviews or conversations, text comments on questionnaire, observation notes, case histories, or medical and nursing
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records entry. With respect to this research, the above definitions are synonymous to the aims of the authors who carried out the studies of the selected articles used in the qualitative study table (refer to table 3) Methods of data collection in qualitative research include: in-depth structured or unstructured interviews including oral and life histories, group discussions and interviews, analysis of textual and narrative data sources such as reports, letters or television, and participants and non-participants observational studies. (Bowling & Ebrahim, 2005) Gray (2009) stated the advantage of qualitative research to be enabling the understanding of the effectiveness of any health service, which is particularly important to policy makers. On the other hand, Aveyard & Sharp (2009) stated one of the disadvantages of qualitative research to be its openness to interpretation, and Gray (2009) highlighted the limitation of qualitative research by stating that; qualitative research alone cannot be used in attempting to evaluate the effectiveness or safety of an intervention without using quantitative methods. The qualitative studies used in this research were appraised using the following themes: clear statement of aim, appropriateness of the methodology, recruitment strategy, data collection, reflexivity, ethical issues, data analysis, clear statement of findings, and value of the research (refer to table 3).

4. 7. 1 Methodological scoring

Based on the above, the articles were scored upon satisfaction of each theme. Plus (+) or minus (-) were used to denote whether a theme was satisfied or not. The total score based on the screening questions was 10, score below 4 was interpreted as low quality, and score between 4 and 7

interpreted as medium quality and score above 7 is considered to be of high quality. Of the qualitative studies appraised; Renne (2006) had a score of 9, Oluwadare (2009) had a score of 8, while Babalola & Adewuyi (2005) also had a score of 8. Therefore, all the articles are considered to be of high quality.

4. 8 QUANTITATIVE STUDY

Bowling & Ebrahim (2005) defined quantitative study as a method of research that focuses on the measurement of quantities and relationships between attributes, following a set of scientifically established methods.

Aveyard & Sharp (2009) added that quantitative research usually refers to studies using method of data collection that involve using numbers.

Quantitative research is appropriate in situations where there is little knowledge about the topic of interest which permits the use of standardized method of data collection such as surveys (Bowling & Ebrahim, 2005). The authors further added that many quantitative methods exist for measuring people's psychological attitude, self-perceptions, and behavior. With respect to the above definitions, the quantitative studies used in this research had the following aims: Antai (2009) assessed the self-perception, behavior, and community-level determinants towards immunization uptake in Nigeria, Antai (2010) also assessed self-perception and community-level explanatory factors associated with child immunization differentials between migrant and non-migrant groups in Nigeria, Ngowu et al (2008) assessed the effectiveness of the Expanded Programme on Immunization in Nigeria and to determine if other factors are influencing the high under-five mortality rate, Odusanya et al (2008) assessed vaccination coverage in a rural community

in Nigeria, and Adeyinka (2009) carried out a survey on the perception of mothers with children under the age of 5 to immunization in Igbo-Ora, Oyo State of Nigeria. Advantages of quantitative research as enumerated by Aveyard & Sharp (2009) include: useful in measuring effectiveness of interventions, it can be used for non-experimental research designs such as questionnaire or surveys, and useful in research designs that involve numerical measurements. The disadvantages of quantitative research on the other hand are: the results of quantitative research are always viewed with caution; the research can present misleading conclusions; particularly in questionnaire or survey studies when the questionnaires are not properly designed. (Aveyard & Sharp, 2009)The quantitative studies used in this research were appraised using the following themes: clear statement of aim, key findings, strength and weaknesses, geographical setting of the study, inclusion and exclusion criteria, recruitment strategy, sample size of the study and their characteristics, ethical consideration, confounding variables, validation of the results, and generalisability of the research (refer to table 3).

4. 8. 1 Methodological scoring

Based on the above, the articles were scored upon satisfaction of each theme. Plus (+) or minus (-) were used to denote whether a theme was satisfied or not. The total score based on the screening questions was 15, score below 7 was interpreted as low quality, and score between 7 and 11 interpreted as medium quality and score above 11 is considered to be of high quality. Of the quantitative studies appraised; Antai (2009) had a score of 15, Antai (2010) had a score of 13, Ngowu et al (2008) had a score of 11,

Odusanya et al (2008) had a score of 15, while Adeyinka et al (2009) also had a score of 15. Therefore, Ngowu et al (2008) is of medium quality while Antai (2009), Antai (2010), Odusanya et al (2008), and Adeyinka et al (2009) are considered to be of high quality. The table below presents the summary of findings of the review. Closely related themes were given the same code and categorized. 11 categorized themes were identified by the review.

Table 5: Summary of findings

Author & Date

Closely related themes

Code

Categorized themes

Renne (2006)Odusanya et al (2005)Ngowu et al (2008)Babalola & Adewuyi (2005)Antai (2010)Oluwadare (2009)Antai (2009)Low level of education, Religious beliefLack of awareness of the need for immunizationLow literacy rateLow literacy level, poverty, place of birth, religionSocio-economic and demographic factorsArea of settlementSocio-economic factors1Socio-demographic factorsRenne (2006)Antai (2010)EthnicityCultural factors2CultureRenne (2006)Adeyinka et al (2009)Poor primary health care and routine immunizationsLack of motivation from health personnel, long waiting queues at health centers, and payment at private clinics3Poor health InfrastructureRenne (2006)Public distrust4Public confidence and trustJenkins et al (2008)Jenkins et al (2010)Babalola & Adewuyi (2005)Oluwadare (2009)Adeyinka et al (2009)Poor vaccine coverageLow levels of routine immunizationPoor accessibility and vaccine coverageBad road

networksDistance5Accessibility and poor vaccine coverageRenne
(2006)Adeyinka et al (2009)Ngowu et al (2008)Lack of political willLack of
political willInadequate spending on health care6Political commitmentAntai
(2009)Babalola & Adewuyi (2005)Oluwadare (2009)Deficiency in vaccine
suppliesVaccine efficacy and availabilityVaccine supplies7Vaccine availability
and efficacyRenne (2006)Antai (2009)Health inequityInequitable access to
immunization services8Health inequityAntai (2010)Migration from rural to
urban areas9Rural-urban migration

Summary

Having analysed the selected articles and presented the summary of findings affecting polio immunization in Nigeria, these findings will be discussed in detail in the next chapter.