

Impacts of Health Education Intervention Programme on Vaccines Hesitancy and Routine Immunization Schedule Adherence in Taraba State-Nigeria

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Abstract

Vaccines hesitancy is an established phenomenon that contributes significant health challenges with resultant high morbidities and mortalities. This study examined the impact of health education in resolving vaccines hesitancy and non-adherence to routine immunization schedule among intervention group in comparison to the non-intervention group in Taraba State. Interventions to resolve vaccines-hesitancy and non-adherence to childhood routine immunization schedule in Nigeria is highly needed but inadequate.

Quasi-experimental design used; newborn infant's mothers accessing immunization in two health facilities PHCC Kona (the intervention group) and PHC Mayo Gwai (the control group) constitute target population explored in this study. Sample size of 20 newborn infant mothers each from the two health facilities, intervention and non-intervention.

The mean age for both intervention and control group are 27.20+ 2.93, and 27.51+ 2.95 respectively. Participants were female, 60% have non-education, 25% have primary education, 15% have secondary education, participants with none and tertiary education 0%. Married [78%] Single [18%]; Divorced [4%]; Widow [0%]; Separated [0%]. The results of appointment-keeping measured at 9th month follow-up on a 9-point scale reported for control ($X=4.77$, $SE=0.13$ or 64.1%) and for intervention one ($X=7.50$, $SE=0.06$ or 94.3%) showed a large effect size (ES) of 2.31(95%CI: 2.74 to 3.88) that was significant at $p<0.001$.

At the end of the study fully vaccinated were 20 (100%), partial and not vaccinated 0% each. For the control group, fully vaccinated were 5(25%) partially vaccinated 13 (65%) not vaccinated 0 (0%).

Keywords: Vaccines hesitancy, vaccination, routine immunization schedule adherence, vaccines preventable diseases, mothers, and family support health education.

Statement of purpose

The review sorts

1. To address vaccines hesitancy and non-adherence to routine immunization schedule and appointments in Kona settlement of Taraba State, Nigeria.
2. To arouse infants' mothers' conscious awareness of benefits of vaccination of their children in routine immunization to express willingness and make conscious efforts to adhere to their children routine immunization schedule for the children survival.

Literature review

Introduction

In the third world countries like Nigeria, Vaccine preventable diseases are responsible for majority of sickness and death, especially among the children that are less than 5-years old where there is high level of noncompliance to routine immunization among infants' mothers in Nigeria: African Journal of Nursing and Midwifery ISSN 2198-4638 Vol. 6, February 2018).

Vaccines preventable diseases are among the major causes of child hood morbidity and mortality worldwide especially in the world's developing countries like Nigeria. This has resulted in the high rates of morbidities and mortalities of Nigerian children due to vaccines hesitancy.

The impact of vaccination programs in preventing disease and reducing the disparity of disease burden is a study that has substantially stressed the benefits of adherence to Childhood vaccination (Menzies; Chiu; McIntyre 2008).

A Study also revealed that vaccination program for young children is one of the greatest public health successes of the twentieth century. The study reported saved lives of thousands of children every year by minimizing or eliminating many serious infants and child hood vaccines preventable illnesses. The study stressed that beside safe water, immunization remained the major means that has positively affected and reduced mortality than others modality including antibiotics usage (MacDonald; 2004).

The beneficial effects of infant and child hood immunization in reduction of infants and child hood mortality has been reported (Lehmann, Vail, Firth, de Klerk, and Alpers, 2005).

In addition, the study sought to highlight the impact of health education intervention in arousing infants' mothers' conscious awareness of benefits of vaccination of their children in routine immunization that enables them to express willingness and make conscious efforts to adhere to their children routine immunization schedule. The study is very important because in Nigeria, there is remarkable progress with respect to polio eradication, courtesy of childhood vaccination. However, vaccine hesitancy can reverse the progress made towards Global Polio Eradication Initiative (GPEI). A typical example is the re-occurrence of wild poliovirus outbreak in Borno State in northeastern Nigeria in 2016. Progress made in Nigeria and worldwide towards polio eradication is sustainable through strong routine immunization adherence. It has been established that factors like wealth, female education and knowledge of vaccines were associated with lower oral polio vaccine (OPV) hesitancy. (Understanding vaccine hesitancy in polio eradication in northern Nigeria Volume 35, Issue 47, 7 November 2017, Pages 6438-6443).

Methodology

Design used for the study is quasi-experimental design with random selection of two health facilities, namely Kona Garu Primary Health Care Center, the intervention Health Facility, and Mayo Gwai Primary Health Care (PHC) the control group (CG). There was baseline assessment of mothers' knowledge on immunization benefits, impacts of vaccines hesitancy to their children with many mothers having low perception of benefits of child hood vaccinations, and feeling of no harmful effect by vaccines preventable diseases if their children are not immunized. Mothers with newborn neonates that gave their consent were sampled and engaged for the study. The total sample size was 40, intervention group were 20 mothers while control group were 20 mothers. Intervention group was provided educational intervention, and counselling with their identified family members engaged as social support. The mother studied for 9 months with 5 sessions provided during each routine immunization schedule.

Data collected using questionnaire designed for this research, in-depth interview. Ethical approval obtained and participants assured of the confidentiality of the information they provide. Data collected at the pre-intervention or base line, immediate post- intervention at the close of the 9 months.

Data Analysis conducted with the aid of computer software statistical package for social sciences SPSS version 25. Micro soft excels also used in analysis of some of the data. Computations involving frequency distributions, summaries of descriptive statistics utilized to process the data collected and to test the validity of the main hypotheses concerning routine childhood vaccines-consumption, and routine immunization schedule appointment-keeping behaviors of mothers of children who participated in the study. The outcome measure was 100% reduction in vaccines hesitancy and improvement on adherence to routine immunization schedule appointment keeping. Among intervention group.

Results

The research intervention group in Kona Garu Primary Health Care Center produced a different result from Mayo Gwai Primary Health Care. From the two groups, results of the intervention revealed full vaccination of the children of the mothers who had health education intervention with 20 (100%) of the children fully immunized with all the RI vaccines the children were due to receive,

partially and not vaccinated among the intervention group was 0% each. For the control group, fully vaccinated were five (25%) partially vaccinated (Vaccines hesitant mothers) 13 (65%) not vaccinated zero (0%).

The review revealed significant variations on vaccines hesitancy and adherence to routine immunization schedule between the two groups the Health Education intervention program resulted zero vaccine hesitancy and strict adherence to routine immunization schedule among the intervention group. In the control group, only five of the participants that is 25% of the mother in the control group get their children fully immunized while 25 of the participants 75% of the mothers in Mayo Gwai the control group were hesitant.

Baseline results for the two groups in the study

For control group the result for the level of knowledge of participants about child hood routine immunization requirement and the possible outcomes, measured on a 23-point scale scored a mean of 11.11(0.24) with a SD of 0.9. For perceived seriousness of vaccines preventable diseases complications and threat to child's quality of life measured on a 21-point scale, 0.02(0.13) with SD=1.05; perceived susceptibility to vaccines preventable diseases complications resulting from poor routine immunization schedule adherence measured on a 9-point scale mean score of 3.12(0.09) with SD=0.75. scores recorded for participants in the control group for perceived benefits of routine immunization adherence and routine immunization schedule appointment-keeping measured on 18-point scale 7.72(0.11) with a SD of 0.80 ; Perceived self-efficacy to take own child to routine immunization regularly measured on 15-point scale 3.85(0.10) with a SD of 1.53; and the attitudinal dispositions towards vaccines uptake scheduled in routine immunization measured on a 33-point scale mean score of 17.78(0.16) and a SD of 1.27.

For the intervention group at baseline mean score of 10.67(0.22) with a SD of 1.76 level of knowledge measured on a 23-point scale; for perceived seriousness of vaccines preventable diseases complications and threat to child's quality of life measured on a 21-point scale, the score was 7.88(0.12) with SD=0.97. Perceived susceptibility to vaccines preventable diseases complications resulting from poor routine immunization schedule adherence measured on a 9-point scale the score was 3.08(0.08) with SD=0.60, for perceive benefits of routine immunization adherence and routine immunization schedule appointment- keeping measured on 18-point scale.

7.70 (0.10) with a SD of 0.73; perceived self-efficacy to take own child regularly for routine immunization measured on 15-point scale was 3.92(0.16) and SD of 1.26; and the attitudinal dispositions towards vaccines uptake scheduled in routine immunization measured on 17.80(0.17) and a SD of 1.20.

Results for control and intervention groups at immediate post intervention

Level of knowledge about routine immunization requirements and possible outcomes among participants in the control group, measured on a 23-point scale at immediate post intervention.

The mean was 11.53(SE=0.23) with a SD of 1.82 for perceived seriousness of vaccines preventable diseases complications and threat to quality of life. A mean of 9.51(SE=0.15) with SD=1.20 was measured on a 21-point scale; perceived susceptibility to Vaccines preventable diseases complications resulting from poor child hood routine immunization adherence measured on a 9-point scale showed a mean score of 3.22(0.06) with SD=0.52 at immediate post intervention. Mean scores recorded for perceived benefits of routine immunization vaccines uptake adherence and routine immunization adherence appointment keeping for the control group measured on 18-point scale was 8.00(SE=0.13) with a SD of 1.06. Perceived self- efficacy to take routine immunization vaccines regularly measured on 15-point scale recorded a mean of 3.78(SE=0.17) and SD of 1.36. Attitudinal dispositions towards vaccines uptake and routine immunization adherence measured on a 33- point scale recorded a mean score of 18.36(0.22) and a SD of 1.76.

Furthermore, the study reported for intervention group at immediate post intervention evaluation, a mean score of 19.47(SE=0.21) with a SD of 1.67 for level of knowledge measured on a 23- point scale. Perceived seriousness of hypertension complications and threat to quality of life measured on a 21-point scale, was 19.79(SE=1.27) with SD=9.64. Perceived susceptibility to Vaccines preventable

diseases complications resulting from adherence measured on a 9-point scale was a mean score of 6.67(0.09) with SD=0.75. The mean score recorded for perceived benefits of routine immunization vaccination adherence and routine immunization schedule appointment keeping measured on 18-point scale was 15.70(SE=0.23) with a SD of 1.70.

Perceived self-efficacy to take child for routine immunization regularly for intervention group measured on 15-point scale recorded a mean of 10.91(SE=0.18) and SD of 1.45 and attitudinal dispositions towards routine immunization measured on a 33-point scale recorded a mean score of 28.93(0.16) and a SD of 1.25.

The study has revealed the significance difference in vaccine hesitancy and adherence to routine immunization schedule between the intervention and the control group in the selected two communities of Taraba State of Nigeria. While the impact of the intervention resulted in zero hesitancy and strict (hundred percent) adherence to the immunization schedule the reverse was the case in the control group where 15 mothers (75%) of the participating mothers were hesitant with only five mothers (25%) non-hesitant.

To be able to assess the effects of interventions through educational on the output parameters, the results of the intervention and control were at the beginning compared with baseline measures to find out the extent of adherence to routine immunization vaccines uptake. The results show the outcome measures for intervention group compared with control group. The basic results for output of intervention group presented as means and standard error of means (SE) with their corresponding observed effect size (ES) and the corresponding 95% confidence interval (95%CI) reflecting magnitude of any change observed for adherence.

There was significant difference between self-reported routine immunization- adherence and mean scores of participants in intervention condition and the mean scores for participants in control group at 9th months follow-up.

On a maximum scale of 15-points for Self-reported routine immunization-adherence, the mean score for Participants in control group was $X=11.5$, $SE=0.13$ or 83.0%, compared with $X=13.4$, $SE=0.01$ or 96.0% recorded for intervention group at 9thmonths shortly after the intervention follow-up. Therefore, based on these values, self-reported routine immunization-adherence mean score for intervention group significantly different from mean score recorded for control group at follow-up; hence, the null hypothesis rejected. It is from the ongoing that intervention conducted had more influence on self-reported routine immunization adherence than the group that had no intervention conducted which is the control group.

Limitation of the review is the study took place in a smaller part of Jalingo Local Government Area of the State with a small sample size.

Conclusion

In conclusion, vaccines hesitancy contribution to health challenges Nigeria significant. Interventions that would arouse infants' mothers' conscious awareness of benefits of vaccination of their children in routine immunization to express willingness and make conscious efforts to adhere to their children routine immunization schedule for the children survival is worthy of consideration and maximum attention. This is because of the burden and impact of vaccines preventable diseases in Nigeria due to ignorance of vaccines benefits and harmful complications of vaccines preventable diseases on children.

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