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**Original Research Article**

# The effect of community champions on modern contraceptive knowledge, attitude and use among women of reproductive age group in rural local government areas in Lagos state

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## ABSTRACT

**Background:** The uptake of contraceptives is still low especially in rural areas in Sub-Saharan Africa. This study aimed to assess the effect of the use of community champions on knowledge, attitude and use of modern contraceptive among women of reproductive age group in rural local government areas in Lagos State.
**Methods:** A quasi-experimental study was done among two groups. The study population were 399 women of reproductive age group per group who live in rural local government areas of Lagos state. The intervention group had community champions assigned to them while the control group did not. Multi-stage sampling method was done. It was a mixed method study. Data were collected using interviewer-administered questionnaires and from family planning registers of the health facilities in the study areas. The data were analysed using the IBM statistical products and services solutions version 23.
**Results:** Results at post-intervention showed that there was a significant increase in the percentage of respondents with good knowledge of modern contraceptive by 22.2% ($p<0.05$), positive attitude towards modern contraceptives by 10.4% ($p<0.05$) and current use of any method of modern contraceptive by 14.3% ($p<0.05$) in the intervention group. While in the control group, there was no statistically significant increase in the percentage of respondents with good knowledge of modern contraceptives, positive attitude towards modern contraceptives and current use of any method of modern contraceptives. ($p>0.05$).
**Conclusions:** The study concluded that the use of community champions was an effective tool for improving knowledge, attitude and use of modern contraceptives.

**Keywords:** Contraceptives, Community champions, Women, Reproductive, Age group, Rural

## INTRODUCTION

High maternal and infant mortality rates are in developing nations are due to factors such as high fertility rates, poor standard of care and poor access to services.[1] There has been a significant decrease in fertility rates Asia, Latin America and North Africa in the last five decades.[1] However, Sub-Saharan Africa has not experienced the same trend.[1] The total fertility rates in Sub-Saharan Africa is still about five births per woman.[1] Early and unwanted pregnancies are prevalent in these nations.[1] There is a high rate of early childbearing in Sub-Saharan Africa.[2] About 95% of all birth by adolescents occur in developing nations; Sub-Saharan Africa highly represented.[2] Sub-Saharan Africans living in rural areas tend to use less contraceptives than their urban

counterparts.[3] Some factors such as ignorance, low level of education, limited access to services, cultural taboos, religious beliefs, spousal disapproval etc. are attributable.[3]

There is a large unmet need for contraception.[4] Globally, over 200 million women of reproductive age would prefer to delay pregnancy or permanently prevent pregnancy after having enough children; although a lot of them still depend on traditional methods of contraceptives or are not using any contraceptives at all.[4] The traditional methods of contraception are unreliable and results in unwanted pregnancies.[4] This leads to legal or illegal abortion and other unpleasant consequences.[4] There is an urgent public health concern to put an end to the silent pandemic of unsafe abortions.[4] About 97% of the 19-20 million abortions are done annually by individuals without the requisite skills or in environments below minimum medical standards; making it unsafe.[4]

According to the National demographic and health survey 2018, The total fertility rate in Nigeria is 5.3.[5] This is on the high side despite the widespread knowledge about contraception among Nigerian women.[5] The total fertility rate in rural areas which is 5.9 is much higher than that in urban areas (4.5).[5] Age-specific fertility rates are higher in rural areas than in urban areas for all age groups.[5] The percentage of utilisation of modern contraceptives is 8% in rural areas compared to 18% in urban areas.[5] A higher proportion of Nigerian women now want to delay childbearing when compared to 2003 NDHS Survey.[5] Prevalence rate for contraceptive use in Nigeria in 2016 was about 16%.[6] This rate is very low. Despite the fact that there is high rate of sexual activity and high awareness of the various contraceptive methods among Nigerians.[7] Therefore, there is a much higher unmet need for contraception.[6] There are factors responsible for this low contraceptive prevalence rate in Nigeria out of which are cultural factors, religious beliefs, low education, ignorance, poor access and fear of side effects.[6] In addition, there is lack of political will to carry out family planning programmes on a much larger scale.[6] Family planning programmes can be scaled up by using community oriented approaches and communication programmes to help change people's misconceptions about the side effects of modern contraceptives.[6] Contraception will better the lives of women and the whole family at large especially in a country like Nigeria which has poor maternal health indicators.[2] This study was timely as part of efforts geared towards the 2018 Nigerian target of 36% contraceptive prevalence rate as part of the global movement on family planning (FP 2020).[6] The FP 2020 goal is targeted to enable 120 million women and girls make informed choice and have access to family planning information and modern contraceptive methods.[6]

In Africa, it has been estimated that 32% of maternal deaths could be prevented by use of effective contraception.[8] Spacing of pregnancies reduces the risk of maternal death.[9] Infant mortality will also be reduced by contraception as births from closely spaced and ill-timed pregnancies will decrease.[9] Family planning helps to empower families.[9] Significantly, birth control helps in slowing down population growth.[9] In the reality of limited resources, birth control will help to maintain a sustainable population with positive impacts on the economy, environment, national and regional development efforts.[9]

This study assessed the effect of community champions on modern contraceptive use in rural Local Government Areas in Lagos State. A community champion could be an influential political leader, health care provider, or other authority figure who uses his or her expertise and professional contacts to increase the application of a new research finding or other innovation into a policy or programme and practice.[10] Community champions have been found to help generate great results in community programmes.[10] These community champions will be able to decipher the individual needs of these women and allay their fears on modern contraceptive use.[10] The aim of this study was to assess the effect of community champions on knowledge, attitude and use of modern contraceptive in rural local government areas in Lagos state.

## METHODS

The study was carried out in Epe and Ikorodu Local Government Areas of Lagos State. This was a study with a quasi-experimental study design to determine the effect of the use of community champions to enhance modern contraceptive use in rural local government areas in Lagos state. All women of reproductive age group aged 15-49 who live in rural local government areas of Lagos state formed the study population. The formula for determination of minimum sample size in studies comparing two independent proportions shown below was used to determine minimum sample size for this study.[11]

$$n = \left[\frac{2(Z_\alpha + Z_{1-\beta})^2 \times P(1-P)}{(P_0 - P_1)^2}\right]$$

where; n=required minimum sample size, $Z_\alpha$ = the z-score corresponding to 5% level of significance for a one tail test =1.65, $Z_{1-\beta}$=the z-score corresponding to power of 90%=1.28, $P_o$=prevalence rate of use of modern contraceptive in rural communities in Delta State pre – intervention=9% i.e. 0.09, $P_1$=prevalence rate of use of modern contraceptives in rural communities in Delta state post intervention[12] = 22% ie 0.22, P = mean prevalence rate of use of modern contraceptive ie $\frac{P_0 + P_1}{2}$ = 0.155.[12] The calculated minimum sample size was 133 respondents per group. For effect size, the sample size was tripled. Consequently, total sample size per group, n=399. Multistage sampling was done. Stage 1: two rural local government areas were randomly selected by simple random sampling out of the four rural local government

areas in Lagos state (Ibeju-Lekki, Ikorodu, Badagry, Epe). Epe LGA was used for the intervention group while Ikorodu LGA was used for the control group and this was determined by balloting. Stage 2: Bado ward was selected from Epe LGA and Isele ward was selected from Ikorodu LGA. This was done by simple random sampling (by balloting). Stage 3: There are 27 streets in Bado ward (the intervention ward chosen) and 47 streets in Isele ward (control ward chosen). All the streets (27 streets) were selected in the intervention ward and 30 streets were selected from the control ward by simple random sampling. Stage 4: By systematic sampling, houses were selected from each chosen street. Based on the fact that the number of houses per street differed, the systematic sampling was done in each street.

In the intervention ward, all the 27 streets were selected. The number of houses sampled per street was: 399/27=14.8 which was approximately 15. On the average, there were about 30 houses per street. Fifteen houses were selected per street by systematic sampling till the sample size of 399 was reached. In the control ward, based on the fact that the number of houses per street differed; the systematic sampling was done in each street. Thirty streets were selected. The number of houses sampled per street was: 399/30=13.3. Which was approximately 13. On the average, there were about 30 houses per street. Thirteen houses were selected per street by systematic sampling till the sample size of 399 was reached. Stage 5: An eligible woman of reproductive age group aged 15-49 years was selected from a house and studied. In case, there was more than one household in a house, one household was chosen by balloting. One eligible woman was chosen per household. If there was no eligible woman in a household, the next household was used. In the pre-intervention phase, advocacy visit was carried out in the selected rural local government areas before the commencement of the study. Gatekeepers and community leaders were visited. The primary health care centres were also visited to ensure modern contraceptives were available in these centres and stock levels were adequate. The two groups had a baseline assessment. Data was collected pre-intervention using questionnaires. Information was abstracted from the family planning register of the Primary health care centres. Data was collected by using semi-structured questionnaires. Some questions were adapted from the Contraceptive Knowledge Assessment tool (CKA).[13] Some other questions were adapted from other studies.[14,15] Pre-testing of questionnaire was done in another community in Ibeju-Lekki LGA in Lagos State. Cronbach's alpha was 0.763. Questionnaires were interviewer-administered. A one-day training session for 20 research assistants was organised in the two rural LGAs selected.

The intervention phase commenced after completion of baseline data collection. The intervention for this study was the use of community champions to mobilise the women in the community during the six-month period of the intervention on contraceptive use. There was a two-week training of 20 people selected within the intervention community to become community champions. These 20 people selected consisted of different segments of the community i.e. women representatives, market women representatives, men representatives, opinion leaders and volunteer health workers. Their training lasted for two weeks. The training was derived from the facilitators guide of the USAID basics of community-based family planning training curriculum.[16] Community champions started their work immediately after training by holding group meetings with the group of people assigned to them. These group meetings were held thrice monthly during the period of intervention. It included counselling sessions. Community champions also carried out awareness programmes on contraceptive use in public places in the community e.g., the market, town hall and school fields every month within the period of intervention. They were also involved in distribution of condoms to members of the community. Community champions also referred members of the community to primary health care centres if they needed family planning services. Community champions worked on a set of group members per month. Supportive supervision was done by the researcher to ensure that community champions do their work effectively. Community champions were given monthly incentives after supervisions. The control group did not have community champions. They just had routine access to reproductive health services within their community. Monthly visits were paid to the primary health care centres in the control wards to ensure modern contraceptives were available in these centres and stock levels were adequate. Level of uptake of contraceptives from the beginning of the period of intervention was assessed from the family planning registers in the primary health centres of chosen wards monthly in both the intervention and control groups. In the post-intervention phase, there was a post intervention assessment after six months of intervention. Questionnaires were administered to both control and intervention groups. Information was abstracted from primary health care centres to assess the level of uptake of modern contraceptives. Data was entered into the computer software and analysed using the statistical products and service solutions (SPSS) version 23. Data was cleaned. Categorical variables were analysed in frequencies and proportions.

Frequency tables were generated for these categorical variables. Knowledge scale was between 1-14.[17] A score of 1 was assigned to correct response and 0 to every wrong answer.[17] Total score on knowledge was 14.[17] Score ranges from a minimum of 0 to a maximum of 14.[17] Poor knowledge ranges 0-4, average knowledge ranges 5-9 and good knowledge ranges 10-14.[17] The attitude towards contraceptive use was designed as a 5-point Likert scale.[18] This ranged from strongly agree (5) to strongly disagree (1).[18] The lowest score from the scale was 20, whereas the highest score was 100. A high score indicated a negative attitude and a low score positive

attitude because the attitudinal statements were negatively framed. The mean score of 60 points on this scale was taken as the cut-off point. A score below this represented a positive attitude and a score above this represented a negative attitude. Quantitative variables were summarised in means, medians and standard deviations. Inferential statistics was done. Chi square was used to determine the association between socio-demographic variables and some other categorical variables. Student t-test was used to compute quantitative variables. If p was less than or equal to 0.05, the association or difference was termed significant. Qualitative data was translated, interpreted, analysed and put in themes. The data was stored on a password protected external disk drive for future reference. Written informed consent was obtained before respondents were interviewed. Permission was also obtained from the Lagos state primary health care board. Strict confidentiality of information generated during interviews was ensured. Good record keeping of data was done with confidentiality.

## RESULTS

A total of 798 women of reproductive age group, 399 in the intervention group and 399 in the control group participated in the baseline questionnaire survey. A total of 790 women (394 in the intervention group and 396 in the control group) participated in the follow-up questionnaire survey giving an attrition rate of 1.25% in the intervention group and 0.75% in the control group. The mean age of respondents was 31.52±8.49 in the intervention group and 33.50±7.09 in the control group. There is a statistically significant difference in the age of both groups with the intervention group having a higher proportion of respondents who are younger. (p=0.000)

Most of the respondents in both the intervention and control groups have received up to secondary education. There was a statistically significant difference in the educational level of both groups with the respondents in the intervention group having more formal education. (p=0.000). There was a statistically significant difference in the religion of both groups as there were more Muslims in the intervention group. (p=0.000) Majority of the respondents in both groups were Yorubas. There was a statistically significant difference in the occupation of both groups with the control group having more respondents who are self-employed (traders or business owners) and unemployed. (p=0.000).

**Table 1: Socio-demographic characteristics of respondents (n=399).**

| Variables | Intervention group, N (%) | Control group, N (%) | $X^2$ | P value |
|---|---|---|---|---|
| **Age (years)** | | | | |
| 15-24 | 92 (23.1) | 39 (9.8) | 27.131 | 0.000 |
| 25-34 | 147 (36.8) | 163 (40.9) | | |
| 35-44 | 130 (32.6) | 168 (42.1) | | |
| 45-49 | 30 (7.5) | 29 (7.3) | | |
| Mean age | 31.52±8.49 | 33.50±7.09 | t=-3.563 | 0.000 |
| **Level of education** | | | | |
| No formal education | 4 (1.0) | 6 (1.5) | 24.974 | 0.000* |
| Primary | 40 (10.0) | 63 (15.8) | | |
| Secondary | 194 (48.6) | 233 (58.4) | | |
| Tertiary | 161 (40.4) | 97 (24.3) | | |
| **Religion** | | | | |
| Christianity | 145 (36.3) | 189 (47.4) | 17.527 | 0.000 |
| Islamic | 247 (61.9) | 192 (48.1) | | |
| Traditional | 7 (1.8) | 18 (4.5) | | |
| **Ethnicity** | | | | |
| Yoruba | 382 (95.7) | 375 (94.0) | 2.427 | 0.297 |
| Hausa | 0 (0.0) | 0 (0.0) | | |
| Igbo | 10 (2.5) | 18 (4.5) | | |
| Others | 7 (1.8) | 6 (1.5) | | |
| **Occupation** | | | | |
| Unemployed | 67 (16.8) | 93 (23.3) | 22.606 | 0.000 |
| Unskilled worker | 46 (11.5) | 38 (9.5) | | |
| Skilled worker | 85 (21.3) | 66 (16.5) | | |
| Self-employed (trader/business owner) | 120 (30.1) | 157 (39.3) | | |
| Employee | 81 (20.3) | 45 (11.3) | | |

*Fisher's exact p value.

**Table 2: Awareness and knowledge of modern contraceptives by respondents before and after intervention.**

| Characteristics | Intervention group Pre (n=399) Frequency (%) | Intervention group Post (n=394) Frequency (%) | Statistic | Control group Pre (n=399) Frequency (%) | Control group Post (n=396) Frequency (%) | Statistic | Intervention group versus control group (post-intervention) |
|---|---|---|---|---|---|---|---|
| **Heard of contraception** | | | | | | | |
| Yes | 362 (90.7) | 384 (97.5) | $X^2$=16.129, p=0.000 | 351 (88.0) | 356 (89.9) | $X^2$=0.751 p=0.386 | 0.0001 |
| No | 37 (9.3) | 10 (2.5) | | 48 (12.0) | 40 (10.1) | | |
| **Overall knowledge of contraceptives** | | | | | | | |
| Poor | 26 (6.5) | 5 (1.3) | $X^2$=45.451, p=0.000 | 30 (7.5) | 19 (4.8) | $X^2$=5.329 p=0.069 | 0.000 |
| Average | 193 (48.4) | 124 (31.5) | | 184 (46.1) | 165 (41.7) | | |
| Good | 180 (45.1) | 265 (67.3) | | 185 (46.4) | 212 (53.5) | | |

**Table 3: Attitude of respondents towards modern contraceptives before and after intervention.**

| Attitude | Intervention Pre (n=362) Frequency (%) | Intervention Post (n=384) Frequency (%) | % change | Control Pre (n=351) Frequency (%) | Control Post (n=356 ) Frequency (%) | % change | P value intervention group versus control (post-intervention) |
|---|---|---|---|---|---|---|---|
| **Positive** | 215 (59.4) | 268 (69.8) | 10.4 | 230 (65.5) | 247 (69.4) | 3.9 | 0.902 |
| **Negative** | 147 (40.6) | 116 (30.2) | -10.4 | 121 (34.5) | 109 (30.6) | -3.9 | |
| | $X^2$=8.829 | p=0.002 | | $X^2$=1.197 | p=0.273 | | |

**Table 4: Current usage of modern contraceptives by respondents before and after intervention.**

| Current use of modern contraceptives | Intervention Pre (n=399) Frequency (%) | Intervention Post (n=394) Frequency (%) | % change | Control group Pre (n=399) Frequency (%) | Control group Post (n=396) Frequency (%) | % change |
|---|---|---|---|---|---|---|
| **Yes** | 157 (39.3) | 211 (53.6) | 14.3 | 208 (52.1) | 222 (56.1) | 4 |
| **No** | 242 (60.7) | 183 (46.4) | -14.3 | 191 (47.9) | 174 (43.9) | -4 |
| | $X^2$=16.08 | p=0.000 | | $X^2$=1.236 | p=0.266 | |

The percentage of respondents aware of modern contraceptive methods increased significantly by 6.8% in the intervention group post-intervention (p = 0.000). The increase observed in the control group was not statistically significant (p=0.386). The difference in awareness between the two groups post-intervention was statistically significant. (p=0.0001). The percentage of respondents with good knowledge of modern contraceptives methods increased significantly by almost a quarter (22.2%) in the intervention group post-intervention (p=0.000), while in the control group increase was 7.1% and was not statistically significant, (p=0.069). The difference in knowledge of modern contraceptives between the two groups post-intervention was statistically significant (p=0.000) (Table 2).

There was a statistically significant increase in the percentage of respondents in the intervention group who had positive attitude towards modern contraception post-intervention by about a tenth (10.4%) (p=0.002). There was also a slight increase in the percentage of respondents who had positive attitude post-intervention in the control group but this was not statistically significant (p=0.273). The difference in attitude towards modern contraceptives between the two groups post-intervention was not statistically significant (p=0.902) (Table 3). There was a statistically significant increase in the percentage of respondents who currently used modern contraceptives in the intervention group by 14.3%. (p=0.000). There was also increase in the percentage of respondents who currently used modern contraceptives in the control group but this was not statistically significant (p=0.266). The difference in the current use of modern contraceptives between both groups post-intervention was not statistically significant. (p=0.479) (Table 4). There was a higher increase in the number of new family planning acceptors (uptake) in the intervention group compared to the control group in the health facility. The increase was remarkable in July 2019 and August 2019 (the initial period of the intervention). It was also sustained post-intervention (Figure 1).

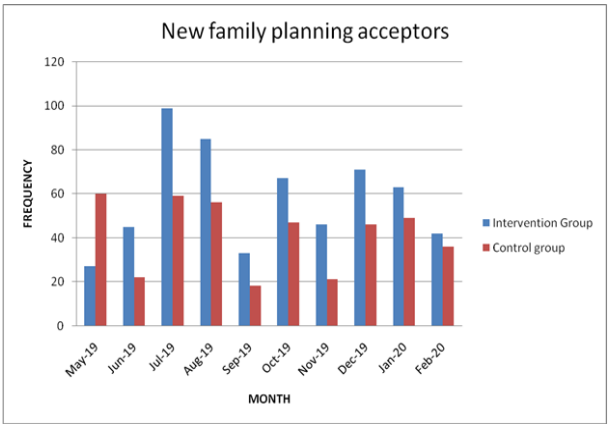


**Figure 1: Data from health facility (NHMIS summary form) showing females aged 15-49 using modern contraceptives who are new family planning acceptors in both the intervention and control groups.**

## DISCUSSION

The use of community champions has been found to improve knowledge, attitude and use of modern contraceptives.[19-22] Moreover, the results also showed that in the intervention group, there was a statistically significant increase in percentage of respondents who have good knowledge of modern contraceptives from 45.1% to 67.3% post intervention ($p<0.05$). This increase in respondents with good knowledge of modern contraceptives post intervention can be ascribed to the intervention. In the control group, there was no statistically significant increase in proportion of respondents who have good knowledge of modern contraceptives ($p>0.05$). There was a statistically significant difference in the knowledge of contraceptives in the two groups post intervention ($p<0.05$).

A review of community participatory approaches in contraception showed that the impact of the community participatory programmes on knowledge of contraception was mixed; increase in knowledge was reported in majority of the programmes.[23]

The result of this study showed there was a statistically significant increase in positive attitude towards modern contraceptives from 59.4% to 69.8% post-intervention in the intervention group ($p<0.05$). In the control group, there was an increase from 65.5% to 69.4% after intervention but it was not statistically significant ($p>0.05$). The observed improvement of contraceptive attitude of respondents in the intervention group can be ascribed to the intervention during which their wrong perceptions and misconceptions on contraception have been corrected. The use of community champions in rural communities could be beneficial in changing negative perceptions and cultural beliefs on fertility and its control, thus increasing the positive attitude of women in rural communities towards modern contraceptives.

At post-intervention, this study also showed that there was a statistically significant increase in the percentage of respondents who currently used modern contraceptives in the intervention group from 39.3% to 53.6% ($p<0.05$), while in the control group, the proportion of respondents who currently used modern contraceptives increased from 52.1% to 56.1% but was not statistically significant. ($p>0.05$). This increase in uptake was statistically significant in intervention group while it was not statistically significant in the control group. During the intervention, the community champions encouraged the respondents to accept family planning hence the observed improvement in use among respondents in the intervention group.

A scoping review revealed that eleven out of 25 programmes with community participatory approach to increasing contraceptive use resulted in increase in uptake of contraceptives.[23] A Nigerian study was done in five states of the federation in which community based distribution approach was also used in 10 rural local government areas in which community members were trained to act as community based distribution agents; these agents also helped to provide reproductive health information and made referrals to primary health centres within their communities.[24]

Results showed that there was an increase in the proportion of current contraceptive users from 16% at baseline to 37% from that study.[24] As part of this study, data abstracted from health facility (National health management information system summary form) showed there was a higher increase in the number of new family planning acceptors (uptake) in the intervention group compared to the control group in the health facility. The increase was remarkable in July 2019 and August 2019 (the initial period of the intervention). It was also sustained post-intervention. This showed that the use of community champions increased the number of new family planning acceptors in the study group higher than that of the control group.

## CONCLUSION

At post-intervention, there was a statistically significant increase in percentage of respondents who have good knowledge of modern contraceptives from 45.1% to 67.3% in the intervention group ($p<0.05$). While in the control group, the percentage of respondents with good knowledge of modern contraceptives did not increase significantly ($p>0.05$). There was a statistical significant increase in the percentage of respondents with positive attitude towards modern contraceptives from 59.4% to 69.8% post-intervention in the intervention group ($p<0.05$) while in the control group, the increase from 65.5% to 69.4% was not statistically significant ($p>0.05$). After the intervention, there was a statistically significant increase in the percentage of respondents who currently used modern contraceptives in the intervention group from 39.3% to 53.6% ($p<0.05$) while in the control group,

the percentage of respondents who currently used modern contraceptives increased from 52.1% to 56.1% but was not statistically significant (p>0.05). There was a statistically significant difference in the knowledge of contraceptives in the two groups post intervention (p<0.05). This quasi-experimental study demonstrated that the use of community champions is an effective tool for improving knowledge, attitude and use of modern contraceptives among women of reproductive age in rural LGA of Lagos state.

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