www.ajbrui.org

Afr. J. Biomed. Res. Vol. 23 (May, 2020); 181- 191

Research Article

A Participatory Evaluation of the Outcome of Actions Taken Toward the Prevention of Maternal Mortality in a Rural Community in Nigeria

***Esienumoh E.E.[1], Allotey J.[2] and Waterman H.[3]**

[1]*Department of Nursing Science, University of Calabar, Calabar, Nigeria*
[2]*School of Nursing, Midwifery and Social Work, University of Manchester, UK*
[3]*School of Healthcare Sciences, College of Biomedical and Life Sciences, University of Cardiff, UK*

ABSTRACT

While there has been worldwide focus on improving maternal mortality, in sub-Saharan Africa this is a challenge because of limited healthcare resources, inadequate health literacy and traditional beliefs. National and international policies emphasise better emergency maternal care, skilled birth attendants, better health education and community mobilization to ameliorate the situation. Evidence demonstrates the effect of skilled attendants, better education and emergency services but little about the impact of empowering local communities to take action to prevent maternal mortality. This concluding phase of a participatory action research project aimed to evaluate the actions of a rural community in southern Nigeria following mobilization towards prevention of maternal mortality. Twelve volunteers from the community directly or indirectly involved with pregnancy and childbirth were recruited through purposive and snowball sampling as co-researchers. They undertook participatory data collection from 8 focus groups and 12 individual interviews to evaluate actions previously undertaken by them to raise awareness about maternal mortality and its prevention. Data were thematically analysed. Findings presented in themes included: reported revised understandings of causes of maternal mortality rather than previous beliefs of attributing maternal complications/deaths to evil spirits; more appropriate behaviour to prevent maternal mortality such as preference of skilled birth attendants to traditional birth attendants. Conclusion is that **t**hrough action research, the community appeared to have been mobilized by showing signs of empowerment to take action in collaboration with skilled birth attendants towards reduction of maternal mortality. Therefore, community members should be involved in actions that help to prevent maternal deaths.

Keywords*: empowerment; maternal mortality; participatory action research; participatory evaluation; maternal mortality, sub-Saharan Africa*

*Author for correspondence: Email: *ekeabasi2002@yahoo.com;* Tel: *+2348103174575*

Received: October 2019; Accepted: February, 2020

Abstracted by:

Bioline International, African Journals online (AJOL), Index Copernicus, African Index Medicus (WHO), Excerpta medica (EMBASE), CAB Abstracts, SCOPUS, Global Health Abstracts, Asian Science Index, Index Veterinarius

INTRODUCTION

The high rate of maternal mortality has been acknowledged as a significant challenge to the wellbeing of childbearing women in the global health community and particularly in sub-Saharan Africa and Southern Asia. In Nigeria, pregnancy and the period following it, has been described as a dangerous time for many of the 9.2 million women and girls who become pregnant each year (Wekesah *et al*. 2017). It is estimated that Nigeria and India are responsible for one third of the total annual maternal deaths in the world, contributing 58,000 (19%) and 45,000 (15%) respectively (WHO *et al*. 2015). Nigeria particularly has one of the highest Maternal Mortality Ratios of 814 per 100,000 live births. Statistics show higher maternal mortality in the rural as well as northern parts of Nigeria than in the urban areas (Wekesah *et al*. 2017; Federal Ministry of Health 2014). This study's focus was to evaluate how a rural Nigerian community may be empowered to address this situation.

Several studies have established high maternal mortality levels in Nigeria with large urban-rural differences and dissimilarities across geographical regions. Nigeria is a developing country with about 70% of the population living in the rural areas. These areas are characterized by few or no health care facilities and services. Where available, such healthcare facilities are poorly equipped with human and

material resources. Where services exist, they may not be utilized as a result of several factors which include alternative belief system evidenced by ascribing superstitious beliefs, such as, evil spirits to be the cause of maternal complications (Esienumoh *et al*. 2018; Osubor *et al*. 2006). Thus, these beliefs hinder the utilization of skilled birth attendants and the few available modern health facilities in preference for traditional birth attendants (TBAs) which may result in increased chances of morbidity and mortality because the TBAs do not have the capacity to manage obstetric emergencies (Mboho *et al*. 2013). TBAs are thought to possess powers to counter evil spirits (Osubor *et al*. 2006). A study has shown higher maternal mortality with TBAs than skilled birth attendants (Etuk *et al*. 2000).

In view of the high maternal mortality levels in Nigeria, non-utilization of modern healthcare facilities / skilled birth attendance and alternative belief system of members of the community, their empowerment may be facilitated to bring about a change in their ideology with the hope to prevent maternal mortality.

Empowerment is described as the process of enabling people to recognize their strengths, abilities and personal power as well as power-sharing, and respect for self and others. It does imply that empowerment involves the process of transferring power and this includes the development of positive self-esteem and recognition of the worth of self and others (Kinicki *et al*. 2008). Rappaport proposed that the concept of empowerment is based on social action ideology and recently, it has become widely used in community based interventions (Gibson 1991). It denotes the process of gaining mastery by the people over their lives and community (Rappaport 1984) and has been described as the process of helping people to take control over factors that control their lives (Gibson 1991). Through this process, the people assume greater power to act for themselves, which is thought to effect change (Rimer *et al*. 2005).

In the process of empowerment, cultural norms/beliefs may be reinvented through healthcare interventions including community mobilization and education thus resulting in a positive change (Ingabire *et al*. 2014; Esienumoh *et al*. 2018). Community based projects have been found to have success in mobilizing communities to take action to improve health issues (Rosato *et al*. 2008). Success in mobilizing the community to solve their health problems has also been revealed by some authors. In Rwanda, through a participatory approach, community mobilization was successfully used in a study which sought to eliminate malaria (Ingabire *et al*. 2014). Also in Nigeria following a base-line review of a Health Centre records with regard to utilization of services, a coordinated community advocacy and mobilization programme was undertaken. The result showed 220.6% increase in health service utilization (Adah *et al*. 2010).

In this paper, the report on evaluation of a participatory action research (PAR) project on empowering members of a rural community to plan to take action to prevent maternal mortality (Esienumoh *et al*. 2018) is presented. The PAR project sought to identify the perspectives of the rural community members on the causes and prevention of maternal mortality. The findings from that phase and actions for improvement of their perspectives are outlined later in this paper. To the best of our knowledge, no previous PAR approach with the community has been undertaken in this setting aimed at preventing maternal mortality.

This study was aimed at evaluating the outcome qualitatively of an action research project conducted to facilitate the empowerment of members of a rural community in Nigeria to plan to take action to prevent maternal mortality.
.

MATERIALS AND METHODS

Study location/ Setting

This work took place in a rural setting in southern Nigeria. The community has a population of about 8,000 people with a traditional ruler at the helm of affairs supported by local chiefs. During health and political campaigns, a women's leader would mobilize the women. Maternity services are predominantly rendered by traditional birth attendants (TBAs) who work either in their homes or for some Churches; as the only modern health facility (Primary Health Care Facility [PHCF]) in the community is poorly resourced. Only one midwife and two community health extension workers are deployed to work in the health facility coupled with inadequate equipment; resultantly, these few personnel cannot offer 24 hour service a day. Maternal mortality is a common occurrence in this community in spite of the services of the TBAs. Maternity services in the PHCF has been abandoned by the women for about 15 years prior to this study. This community was chosen for the study because it is highly populated and located strategically, therefore, it is expected that health interventions in this setting might easily diffuse to the neighbouring communities.

Design

The overarching design of the study was participatory action research. PAR works on the principle that those affected by a problem, can participate in the process of inquiry about it, to develop and enact action plans to improve their condition (Stringer 2007). This participatory process was expected to help people repudiate social myths, misconceptions and misrepresentations, and consequently, to formulate more constructive analyses of their situation with the consequence of improved quality of life (Stringer 2007). The notion is that people become empowered by acquiring 'new knowledge' as a result of assessing the quality of their previously held knowledge or beliefs. The new knowledge may then influence their social values, challenging previous standpoints, which may enable change. The action research process is described as a spiral of steps and each consists of problem identification otherwise known as fact-finding, planning, action and evaluation (Carr *et al*. 1986; Hart *et al*. 1995; Waterman *et al*. 2005).

This article focuses on the participatory evaluation of the project whereby the primary author worked with a group of community members affected by the problem of maternal mortality as co-researchers. Briefly, a mixture of purposive and snowball sampling techniques were used to select volunteers to form the participatory action research group (PARG) otherwise called co-researchers because they would collaborate with the primary author to work throughout the

phases of the PAR and eventually serve as agents of change in their community (Winter *et al*. 2001; Koch *et al*. 2006). These are persons who are directly or indirectly involved with pregnancy and childbirth and care was taken to ensure representation from all stakeholder groups. The co-researchers included: two women of childbearing age, one husband, two community leaders, one clergyman, one traditional birth attendant, one mother-in-law / matriarch, one Primary Health Care Coordinator, a midwife educator representing the Director of Nursing and Midwifery services in the State and two health professionals involved in maternity care (Esienumoh *et al*. 2018).

An induction workshop was carried out in the previous phase of the project by the primary author for these volunteers to share their perspectives on maternal mortality and compare this with the scientific perspectives. Consequent on that, the PARG had conducted focus group discussions and in-depth personal interviews about the perceived causes of maternal mortality with a range of community members (Esienumoh *et al*. 2018). Following collaborative qualitative analysis of the transcriptions of the focus group and individual interviews as above, these findings emerged: attribution of maternal morbidities and mortalities to superstitious causes; delayed referrals by TBAs; poor transportation and poor resourcing of the health facilities. Consequent on these, The PARG proposed and implemented the following actions to prevent maternal mortality in their community: 1. To educate the members of the community on the causes and prevention of maternal mortality from the perspective of modern medical science; 2.To motivate members of the community through the education programme to re-interpret the meanings they had about some aspects of maternal mortality due to superstitious beliefs; 3. To hold advocacy discussions with relevant stakeholders with the hope to attract assistance for the improvement of health and social infrastructures in the community to prevent maternal mortality; 4. To educate TBAs on danger signs during pregnancy and childbirth; emphasise need for referral and educate on hygiene in their practice; and 5. To create a common forum between TBAs and midwife/community health extension workers (Esienumoh *et al*, 2018). The participatory evaluation presented here thus sought to evaluate these actions.

Ethical consideration

Ethical approval was obtained from the Ethics Committee of the University of Manchester, as well as the State Research Ethics Committee, Ministry of Health in Nigeria and the Local Government Council. Permission was obtained from the Community's Council of Chiefs and from the officer in charge of the Health Centre in the Community. All participants gave informed consent. Verbal consent was obtained from them following translation of the letter of consent and information sheet into the local dialect for those who do not understand English and could neither read nor write. The consent was recorded with their permission. Due to the patriarchal nature of this community and so that they do not feel slighted, consent was also obtained from heads of families of the participants. Relational ethics was also emphasised to the participants to uphold mutual respect for the views of others particularly among the PARG and those in the focus group discussions. Generally, the participants were assured of anonymity and confidentiality by not disclosing their identities as well as protection of data.

Evaluation

Participatory evaluation of the actions taken by the PARG was adopted as opposed to a more conventional evaluation method. The conventional evaluation method tends to be positivist in approach. Greenwood *et al*. (2007) assert that this is usually carried out by researchers and does not tend to consider inputs from members of the community. Similarly Reeve et at. (2007) state that conventional evaluation aims to make neutral and objective judgment about the project from the professional's perspectives. It tends to reduce the participants to mere informants in a passive relationship with the researcher thus emphasizing power relationship. This overlooks the needs of the members of the community. Participatory evaluation, on the contrary, engages stakeholders, for example, community members in the processes of making sense about their own situations in activities they have participated in. This approach focuses on evaluation of things that matter to members of the community (Greenwood *et al*. 2007). It has parallels with action research; therefore, it is preferable as an evaluation method in this situation.

Methods used for the evaluation

The PARG held a meeting after the actions had been initiated to discuss how they would evaluate whether they had met the aim and objectives of empowering the people to take action to prevent maternal deaths. Secondly, this group also decided that data on evaluation should be generated through individual and focus group interviews. Thirdly, they decided collaboratively to evaluate the interventions through individual interviews of the co-researchers as well as through focus group interviews with those participants who had contributed previously. The focus groups in this study and the number of participants during the evaluation phase are shown in Table 1.

Table 1.
Focus groups in the evaluation phase

Focus Groups	No. in evaluation
Husbands	4
Older women of child-bearing age (23-49years)	4
Adolescents and Younger women of childbearing age (15-22)	5
Clergy	6
Community leaders	3
Traditional birth attendants (TBAs)	3
Mothers-in-law/ matriarchs	4
Doctors, midwives and other health workers	4
Total	**33**

Data collection: There were eight focus groups planned for the evaluation. The focus groups comprised of individuals from the following groups: husbands, older women of child-

bearing age, younger women of child bearing age, clergy, community leaders, TBAs, Mothers-in-law/matriarchs, doctors, midwives and other health workers. These corresponded with the previous focus groups from which data were generated regarding the knowledge, attitudes and practices of the community members towards maternal mortality; as described in the initial phase of this project published in another article (Esienumoh *et al*. 2018). The choice of these focus groups was to ensure that the various groups in the community were involved. It is to be noted that the number of participants in the various groups decreased during the evaluation. This was because the evaluation took place at the beginning of the planting season and most of the community members had to attend to their farms. Although the group took cognizance of that and arranged most evaluation meetings in the evening, despite the flexible schedule, some who would have participated came back tired from their farms and so could not honour the invitation. However, with the group number ranging from three to six, meaningful discussions were still had (Denscombe 2010). Thirty-three participants spread across the eight focus groups took part in providing data for the evaluation.

The focus group discussion guide consisted of open ended questions developed by the co-researchers and covered areas including: how the programme had impacted on the community members, what they had gained or learned, if anything, from the programme and the value added to their lives and changes to their practice, if any, since their training. They were also asked what areas would require continued or further intervention, for example, what they would expect others to do differently to prevent death of women due to childbearing. The focus groups were conducted in the local dialect.

Verbal consent was obtained from each group and in the case of interviews, from the individuals for tape-recording and use of their data. To ensure informed consent, the researcher had explained the nature of the study to the participants and how it would involve their time. This was done prior to obtaining their consent. The primary author moderated the focus groups and facilitated inclusivity and equity in response by encouraging every participant to make contribution to the discussion.

Eight out of twelve individual interviews consisting of co-researchers were also conducted in the local dialect by the primary author. The individual interview guide was the same as that for focus group discussions. Each interview session lasted for at least one hour and was conducted in privacy in the participant's home. To ensure quality, the primary author had previously trained the co-researchers during a Workshop on the rudiments of action research which included the conduct of in-depth interviews and focus group discussion. Following that, the co-researchers had successfully collaborated with the primary author to generate data in the fact-finding phase of this project published in another article (Esienumoh *et al*. 2018).

Data analysis : Data analysis was carried out qualitatively and collaboratively by the primary author and the co-researchers. Collaboration is important in participatory action research data analysis to ensure that as many co-researchers as possible are involved in the process to strengthen its rigour.

Following verbatim translation and transcription of the interviews and focus group discussions from the local dialect into English and then back translation from English into the local dialect by a midwife who is proficient in both English and the local dialect to ensure accuracy, data were fed into the NVivo8 software for organisation by the primary author. The translators were educated about the need for confidentiality. Thematic data analysis was undertaken. Following transcription, one interview was read through a few times to get familiar with the data. Codes were generated from key concepts in the data such as repetitive ideas, words and phrases. Similar codes were grouped into categories. These were in turn reviewed and a short description of each category written. Identical categories were grouped under overarching themes (Miles and Huberman 1994). This process was applied to all the data sets. The themes were collaboratively discussed and then accepted by the PARG.

RESULTS

The findings from the focus groups and interviews were combined as they covered similar themes. Thus, findings from the evaluation are presented in three themes: (a)Revised understandings of the causes of maternal mortality (b) More appropriate behaviour to prevent maternal mortality (c)Seeking help from other people and government to prevent maternal mortality.

Revised understandings of the causes of maternal mortality: Generally, from the community education programme, the findings suggest that most members of the community began to revise their understandings of the causes of maternal mortality compared with their previous comments. Some statements indicate that they were beginning to question the rationale of certain traditional beliefs they held about causes of maternal deaths. For example, one participant discussed how they previously attributed the causes of maternal deaths to evil forces but now following the education programme was able to offer a different explanation:

'I have learnt a lot of things from this project because before now, it was a common belief to associate the cause of unduly long labour to evil spirits which have locked the womb and the traditional remedy would be sought from witch doctors to unlock the womb. Unfortunately, the woman would die. But now, we have learnt that an unusually long labour could be caused by wrong position of the baby in the womb, … narrow 'waist' of the mother so that the baby cannot pass through… heavy blood loss also ascribed to witches are not so. I have learnt from the explanation given to us about how these problems happen and that if the womb does not grossly reduce in size and get firm, bleeding can occur after delivery' (C.FG4.01).

Another view emerged from the interviews as regards the information from the community education on teenage pregnancy as a high-risk pregnancy:

'the community education has been very enlightening … first of all, our young girls now know that teenage pregnancy is very risky; things could get worse, if they attempt an abortion. This is commonly

discussed in the community now and I hope it will go a long way to help us' (H.FG1. 01).

Trapped placenta following birth of the baby was particularly noted and they recalled it would require urgent transfer to the hospital for expert intervention:

'I have also learnt that if the placenta fails to be delivered, it is a very serious problem that requires urgent transfer of the woman from the TBA to the hospital. The TBA should not keep the woman or even send for help from another TBA as has been the common practice here. The woman must be sent to the hospital in good time to save her life' (Int.07).

As indicated previously, the TBA would consult other TBAs rather than refer a woman with complication promptly to the hospital. The decision by the participants in favour of the hospital suggests an attitudinal and practice change from their former practice of going through various TBAs and probably opting for the hospital as a last resort. They appear to have been able to appreciate the limits of the TBAs / out of facility care by choosing the hospital when complications occur. Some people, particularly, the husbands who are the major decision-makers in the family, report the need for pregnant women to be attended by healthcare professionals even when there is no imminent health problem:

'since pregnancy is a gift from God, I have always believed that the woman does not need any special care …from this education, I have seen that there could be complications and the woman needs to have the attention of doctors and midwives…' (H.FG 1. 02).

Therefore some participants were now of the view that they were able to identify the limitations of the TBAs and also realized when they needed to seek the attention of skilled birth attendants.

Having explored the participants' apparently new perspectives on the causes of maternal mortality, consideration was thereafter given to what they said they would do differently to prevent maternal deaths. These are summed up in the next theme.

More appropriate behaviour to prevent maternal mortality: This theme describes more appropriate behaviour regarding child birth to prevent maternal deaths which members of the community planned to adopt and some have already started implementing. For example, one woman speculates that next time she is pregnant; she would attend the hospital which in this context refers to the place where skilled birth attendance is provided; rather than seek the service of a TBA and some women have already started using maternity services at the modern health care facility in the community after it had been abandoned for about fifteen years:

'... I used to go to the TBAs whenever I am pregnant… following the education; I have decided to attend the hospital in my subsequent pregnancy' (OW.FG3.03).

Some participants said that they would also be encouraging other women to undertake activities that would prevent maternal complications, for example, advice against unsafe abortion and attendance by healthcare professionals:

'this programme has equipped me with knowledge which I can now use to advise fellow young girls against abortion (unsafe abortion)' (YW.FG2.05).

The religious practice of fasting by pregnant women was also questioned in the interviews by some participants while a participant who has adopted a new stand of attending the hospital and encouraging other women to attend, also maintained that she would still be attending the Church for fasting as well, though with a reduced number of hours. Fasting interferes with adequate nutrition which is essential for healthy pregnancy and childbirth.

'… It is not a good practice to impose fasting on the pregnant woman' (C.FG4.04).

'I will register and be attending the hospital whenever I am pregnant and I will be encouraging other women to do that…however, I can also still go to Church for prayers and do my fasting from 6am to 12noon' (OW.FG3.01).

The 'campaign' to bring about improved maternal health that came from the community education programme did not end within the members of the community. This was because the elders also reported that they saw the need to get involved by soliciting for help from outside the community through bringing pressure on the government:

'We will mount pressure on the government to equip the Health Centre for us' (CL.FG5.02).

Further comments on what needed to be done included the promise of making provision for transportation of pregnant women when needed:

'I appreciate this project and we are seeing the good effects. I believe our problem in the area of maternal deaths is being solved. Concerning transportation, I have promised to make my motorcycle available to take a pregnant woman who has problem to the hospital. If it is not available, I will provide money for the transportation so that we can save the lives of these women' (CL.FG5.02).

Participants reported that hospital or professional care for the pregnant women was preferable to the TBAs' care. This was often based upon on experiential analogies derived from past sad events and the recent education:

'As a chief in the community, if an expectant mother develops problem, I would advise that she should be taken immediately to the hospital…it had also happened to my late wife. She was to deliver twins, one came out but the other did not. I did not have the idea that they were twins. She left in labour in the morning to the TBA working in the Church for care and this problem happened there. They kept her for a long time, up to 6pm. She had the baby but the placenta could not be delivered...she became very weak due to the long labour...she died. If I had known what I know now, she would not have died because I would have taken her to the hospital' (Int.02).

A health professional at the referral hospital made the following remark about attendance at the antenatal clinic:

'I have experienced an improved attendance at the Antenatal Clinic by women from the community in this study. Before now, in one month, we might have about two to three women from that community attending the clinic but now it has increased to about ten to twelve. Their attendance has really improved' (DMW.FG8.01).

It was reported that a TBA took her clients who were not reported as having any complication to register at the referral hospital. This was a new development which may have the advantages of creating a form of collaboration to improve TBA / Skilled birth attendants' relationship to facilitate co-learning, prompt referrals from the TBAs to healthcare professionals for prompt interventions thus reducing maternal mortality. Such collaboration has been lacking in the past:

'Last month, a TBA from a Church in that community brought two women to register in the Antenatal Clinic of this hospital…she stayed through with the women until all the antenatal procedures were carried out. The TBA was so enlightened' (DMW.FG8.01).

Some members of the community also commented on tangible changes which they attribute to this project:

'I even overheard a TBA advising a pregnant woman to go to the hospital. That showed that what you have done here was very good and it has touched everybody's life' (H.FG1.02).

Some of the clergy were also heard advising pregnant women to attend the hospital for care in spite of the labour room in their church:

'This project has influenced the way some things are now done in the community. Some Pastors now preach about this in their Churches. You know most Churches here conduct prayer and fasting for their members and also have labour rooms where women can have their babies. I was happy to hear a Pastor preach about this and advising the pregnant women to attend the hospital for care in spite of the labour room in their Church' (FG1.02).

A clergyman also spoke about how actively involved he was in the education that he has now incorporated it into his church programmes:

'... during the women's week (in the Church), the women actually scheduled a date for healthcare teaching. They invited midwives who taught them how to take care of themselves during pregnancy and after childbirth as well as taking care of the child …both the married women and the young unmarried ones were there. I think I have decided that from time to time, I have to key in these teachings to help those who were not there (at the community education program)' (Int.01).

Furthermore, the co-researchers highlighted a positive development in the Health Centre as regards resumed utilization of maternity services which may have resulted from the community education:

'... maternity services at the Health Centre had not been functional for about fifteen years. A co-researcher who was pregnant had started attending the Health Centre for antenatal care and subsequently had her baby delivered successfully in that facility. This was followed by another woman in the community who also started attending the same facility for antenatal care. This appears to trigger greater referral to the Health Centre generally from the community' (PM).

Although, prospective data were not formally collected as part of this study, the records in the Health Centre showed they had attended to 35 and seven women for antenatal care and childbirth respectively, between October, 2009 and November, 2010 since this project started compared with fifteen years back (1994 to 2008) when there was no antenatal care and no childbirth services.

Generally, the TBAs reported that they had acquired new ideas from the training programme which had influenced their practice. For example, the TBAs discussed the limitations of their practice while attending to pregnant women:

'The training has given us a lot of ideas. Now, when a woman comes in labour, I look at the watch to note the time so that I do not keep her for too long' (T.FG6.01).

Taking note of the duration of labour is an important development for the TBAs because this would serve as a baseline for prompt referral. Besides that, they also gained insight into identifying women with potential problems through assessing physical appearance. This is a limited assessment that helped them to take precautions:

'I have learnt that as a TBA, I should not deliver certain women. A woman in labour in her first pregnancy was brought to me, I asked her husband to take her to the hospital and she had her baby there ... last week, another woman in her seventh pregnancy was brought to me... I asked her husband to take her to the hospital and he did that… Her problem was more than what I could bear' (T.FG6.02).

These comments imply that the training has had some impact on the behaviour of TBAs, particularly, in the area of referral to skilled birth attendants.

Although most people appreciated the project, there were a few who appeared not to be interested in it. For example, there was one TBA who persisted in warning clients not to attend the hospital as well as another female participant who said that the hospital/skilled birth attendants do not have solution for maternal deaths.

'…I do not refer any woman to the hospital, instead of that, women with complications from the hospital come to me for treatment ... Problems in pregnancy and childbirth are caused by evil spirits…I encourage my clients to be definite about their choice, for example, if they decide on hospital care, they should not come to me and if they want my attention, they should not go to the hospital' (TBA 5).

'My opinion about maternal death is that, women should go to Church and pray to God for help. This will prevent maternal death. Hospital does not have the solution. The pregnant woman should be in Church always' (MLMW.FG7.02).

The community education programme targeted individual or community interests. However, participants also desired the government and others to confront certain issues to prevent maternal deaths. These included the improvement of relevant infrastructures.

Seeking help from other people and government to prevent maternal mortality: Most of the participants were of the

opinion that the government had a responsibility to help them with their situation. In particular, this was with having adequate staffing for the health facilities, for example, adequate numbers of staff were needed for the Health Centre to function optimally. Generally, that Health Centre had only one midwife who was sent to work there a few months after the start of this project and before her posting, the Health Centre was staffed by a health officer who had no midwifery background. It should be noted that the presence of only one midwife was grossly inadequate to attend to the maternity needs of women in the community for 24 hours every day. The staffing position has become an important issue now that following the community education there appears to be a shift in thinking from some traditional beliefs to adoption of biomedical view of pregnancy / childbirth as superstitious beliefs are being repudiated resulting in more acceptance of professional healthcare:

'Government should employ more midwives for the health centre so that they can cover all the shifts in a day, otherwise, if the centre is short staffed, at close of work, there will still be nobody to attend to the women after the morning shift' (DMW.FG8.01).

On the other hand, a few suggested that the community could also be involved in making the Health Centre functional by helping in their own way. For example:

'…although the health centre is the responsibility of the government, the health workers have the duty of telling us what to do to help… Without asking, we may not know what is lacking in the health centre. We can help in our little way if we are informed about the needs, for example by making benches…' (H.FG1. 01).

Although, there were promises made by officials to assist at the advocacy meetings, little could be observed by way of tangible results by the time the primary author withdrew from the field. The co-researchers had requested: (i) accommodation for midwives deployed to the Health Centre; (ii) assistance with transportation of the women to the referral hospital during obstetric emergencies especially at night when public transport was scarce and (iii) the provision of basic furniture like seats for the Health Centre and also the repair of its access earth road, through community mobilisation. In response, the Council of Chiefs promised to secure accommodation for newly posted midwives to improve the staffing situation of the centre but the midwives would be expected to pay for it. The Chiefs also promised to solicit help of all the commercial and private transport owners in the community to be on the alert and oblige their services to avert maternal deaths. One of them pledged personal help. With regard to repair of the access road to the Health Centre, the Chiefs readily decided to gather the youths to work on the road. Concerning the seats, they argued that they required government assistance for these because they thought that their community had been neglected by the government. However, apart from working on the road which took place a few days after the promise was made, the other promises had not come to fruition by the time the primary author withdrew from the field three months later.

Advocacy to the local government council also did not readily yield results. For example, co-researchers advocated for the provision of basic equipment such as forceps to use for childbirth as well as renovation of the staff quarters. The latter would encourage staff to reside within the premises of the health facility to improve their availability for skilled birth attendance. However, the co-researchers were only given a promise that their request would be deliberated upon.

At the State Ministry of Health, the same requests as presented to the Local Government Council were made but with the addition of possibly employing more midwives which could be deployed to that Health Centre. This required a long-term plan because the Health Centre is not directly under the jurisdiction of the State Ministry of Health but under the Federal Ministry of Health. A proposal was to be submitted to form a Primary Health Care Agency which could eventually attend to such requests. Additionally, the Ministry of Social Welfare was approached for possible donation of equipment to the Health Centre as well as funding of future community education to sustain information on the prevention of maternal mortality. Although donation of equipment would not be possible, the PARG was given hope that findings from the research would influence the subsequent year's budget to assist with the reinforcement of community education on maternal mortality.

On the whole, data from the participants suggest that the community education on maternal mortality influenced the participants' understanding and behaviour positively. This implies that awareness has been created about their situation. Generally, their responses suggested a revision of their knowledge, for example, not associating maternal deaths entirely with evil forces and taking responsibility for some of the deaths because the women were not aided to get adequate intervention when it was necessary. As a result of the influence of the community education, the participants made commitments to engage in behaviours that would reduce maternal deaths. For example, utilising the services of skilled birth attendants whenever there was complication

DISCUSSION

As previously discussed, the fact-finding phase of this project (Esienumoh *et al*. 2018) identified the following as key factors influencing maternal mortality in the locality studied: ignorance about obstetric causes of maternal mortality; maternal health problems; sociocultural and superstitious beliefs; poor transportation as well as poor resourcing of health facilities in terms of staff and equipment. Participatory actions undertaken to address these issues and reported in this paper were: community education; TBA training in the interim prior to availability of adequate number of midwives and other skilled birth attendants; initiating the collaboration between skilled birth attendants and TBAs; advocacy towards the improvement of health and transport infrastructures. The participatory evaluation of the actions indicated that some members of the community demonstrated revised understanding of the causes of maternal mortality as well as more appropriate behaviour that may help to prevent maternal mortality. Additionally, they also realised that they could seek help from other people and government that may reduce its likelihood.

The community organization model assists in the explanation of the process of this project. This is a participatory model which involves helping communities to identify common problems, resources, and to develop and implement strategies to reach collective goals (Rimer *et al*. 2005). This model has a similar philosophy to participatory action research by developing the capacity of the population studied, taking action to bring about solutions to problems that confront them, thereby effecting a change (Koshy *et al*. 2011;Reason *et al*. 2009). The aim of the community organization model is to engender change which is initiated from the needs of the community. The process of change which emanates from the priorities of such a population has been found to be successful and sustainable (Rimer *et al*. 2005). Similarly, as Somekh narrated: 'the key to the process of change is the hearts and minds of the individuals who have the power to make it happen. One good way of engaging their hearts and minds is by involving them in some way...' (Somekh, 2006, p.125). This model recognizes the ecological nature of health problems that are identified in the dynamic relationship among individuals, and the social and physical environments.

In this study, the potential of individuals to influence their 'environment' was recognized and promoted through the encouragement of community participation and involvement. This was for the ultimate purpose of empowering them to change their environment which, in this case, resulted in an apparent change in the perspectives and behaviour of most community members concerning maternal mortality. Although the principles of this model was achieved to a greater extent, the community members identified the common problem as maternal mortality but a few of them differed in the identification of common resources as well as the development of common strategies to reach a collective goal of its prevention. For example, while most members accepted skilled birth attendance as best option to prevent maternal mortality; a few still maintained their original position of not utilizing professional health services. This is evidenced in the case of the TBA who warned his clients against hospital care as well as the woman who insisted that only Church attendance can prevent maternal mortality. This may illustrate how deeply the cultural beliefs of the people influence their health behaviour. This finding which demonstrates that not all members of the community accepted professional health services is supported by the theory of diffusion of innovation. The theory explains that innovations like new ideas or behaviours are not adopted by all individuals in a social system at the same time; the initial adopters through interaction and interpersonal networks pass the innovation to the late adopters (La-Morte, 2018, Greenhalgh *et al*. 2004). It is expected that in the long term, when the gains of professional healthcare services manifest among the early adopters in this community, these may motivate others to also adopt the innovation.

Where both the scientific healthcare system co-exist with traditional health system as it was the case in this setting, some people would choose either of the two or both based on their perception of the cause of the health problem (Abubakar *et al*. 2013; Osubor *et al*. 2006). In corroboration with this view, some other authors also found that pregnancy and childbirth were believed to be mysterious phenomena which expose women to attacks by evil spirits, thus supernatural interventions are required to help the women. TBAs are believed to possess supernatural powers and their places of practice provide a secure refuge for pregnant women, therefore, they are preferred to skilled birth attendants (Mboho *et al*. 2013). This implies that some community members may integrate both scientific and traditional healthcare systems in the attempt to meet their health needs.

In spite of the variations just presented, the general outcome of the process as evidenced in this study included acquisition of revised understandings of maternal mortality, and reported development of positive attitudes and practices towards taking actions that may prevent maternal deaths. These may have led to increased uptake of the services of skilled birth attendants and claims of more prompt referrals of pregnant women with complications by TBAs. This also led to advocacy meetings with local government agencies with the aim of improving maternal healthcare. In a study, on why some women do not attend antenatal and postnatal care services in Indonesia, the authors had recommended community involvement in promoting the use of those services (Titaley *et al*. 2010). The study by Shehu in northern Nigeria on community mobilization to reduce maternal mortality also supports this strategy (Shehu 2000). The evidence shown in that study included reduction of delays in seeking emergency obstetric care, improved transportation to emergency obstetric care facilities, increased awareness of causes of maternal deaths and increased uptake of antenatal and delivery services in the hospital. Although it was not reported if these findings led to reduction of maternal mortality, they are welcome developments that may lead to reduction of maternal mortality. Though successful, the author remarked that she encountered challenges in that the community mobilization project required time, patience and persistence; but the final results can be rewarding. It was also noted that a much longer period is needed for re-enforcement to ensure permanence in the gains made (Shehu, 2000). The experience of this author is similar to that of the PARG in this study in that about ten months were spent in the community for the PAR. This allowed time for persistence and patience by the PARG which may have contributed to the satisfactory outcome of this project indicated in the evaluation. However, it is acknowledged that this PAR project has started a change process that will require much longer term reinforcement.

In the community organization model, ecological factors are further classified into the following levels: intrapersonal, interpersonal and community level (Gruszin *et al*. 2010). The intrapersonal level describes inherent factors in the individual like knowledge, attitudes, beliefs and personality traits. Interpersonal factors include the influence of family, friends and peers in the attempt to provide social identity and role definition. Lastly, the community influence is brought to bear through enforcing norms, rules and regulations as well as government policies. The data generated from this study clearly demonstrated the interplay among these various levels with resultant potential for a high incidence of maternal mortality. For example, the pregnant woman typically demonstrates ignorance about the causes of maternal deaths, her situation is made more grave by superstitious beliefs and

unfavourable cultural norms within her family and the general community as well as the unavailability of a functional health service. Altogether, these place her in a serious predicament for child birth the outcome of which may not be favourable. Given that the various levels of ecological factors work together to bring about change, it implies that if any of these factors is difficult to change, then it can affect the overall change that this project targeted.

The interplay of the intrapersonal, interpersonal and community level factors following interventions in this project may strengthen the efforts towards prevention of maternal mortality.

Rimer *et al*. (2005) also noted that the community organization model is not a single mode of practice and that it involves various approaches to effect change. These approaches have been classified to include community development, social planning and community action (Gruszin *et al*. 2010). Community development component targets the building of group identity, consensus and capacity. Social planning emphasizes problem-solving while community action is the sum of the other two and its main thrust is to increase the capacity of the community to solve problems that affect them. Community development in this model is in congruence with PAR used in this study. As previously discussed, prior to this evaluation, community development and social planning were achieved in this project through the sequential fact-finding and planning phases of PAR. Activities in these two phases culminated in capacity-building of the community indicated in the various actions which included community education and advocacies aimed to facilitate empowerment of the people towards solving the problem of maternal mortality in this community. Although the PARG aimed to facilitate empowerment of most members of the community directly involved with childbirth (men and women), it was not totally possible because not all members of the community attended the community education. The community leaders supported the PARG to ensure success of the project through mobilisation of the people to attend the education sessions as well as making promises to provide means of transportation in emergencies. Conversely, the government bureaucracy posed a challenge in the advocacy by non-provision of adequate healthcare resources.

The community organization model is supported by the concept of community mobilization which is defined as individuals taking action organized around specific community issues (Kim-Ju *et al*. 2008). Another author further explained that community mobilization involves engaging members of the community to change the norms within their own community. This is based on the assertion that behaviours, attitudes and beliefs are affected by norms (Ortiz 2017). Central to these approaches in the pursuit of change is the concept of empowerment which has been discussed previously.

In relation to this study, empowerment entails that the people critique their beliefs in relation to maternal mortality, vis-à-vis theoretical evidence. This process, would lead to the development of their critical understanding about this situation which in turn positions them to be able to take appropriate action to improve their situation (Freire 1970). The process of empowerment in this action research was viewed as being facilitated by the primary author (Stringer 2007).

Community empowerment is said to take place when the people work together for a common cause as a result of consciousness-raising thus resulting in conscientisation (Reason *et al*. 2009). Consciousness-raising resulting in conscientisation is a process that emanates from sensitization which raises awareness of the people to be able to critique their status quo and thus develop a critical understanding of their unpleasant circumstances (Freire 1970; Greenwood *et al*. 2007). As shown in the evaluation of this project, some members of the community attested to acquiring improved understanding about maternal deaths as well as new and revised behaviour towards its prevention from attending the community education. It then follows that conscientisation is the empowered state of the people and is a pre-requisite for action to bring about change. However, these gains need reinforcement complemented with availability of adequate contemporary healthcare resources for the purpose of sustainability (Shehu 2000). Conversely, the members of this community may likely experience potential demoralisation and de-motivation after being conscientised and government fails to provide the required health infrastructure as indicated in the evaluation of the government aspect of the advocacy.

This study appears to have impacted positively on the members of this community by stimulating ideological critique of their beliefs, which led to critical understanding of the obstetric causes of maternal deaths, thus resulting in the acquisition of new knowledge. The evidence of this includes repudiation of some fatal beliefs about maternal deaths, resumed uptake of the services of the skilled birth attendants and the promise by the chiefs to provide transportation in emergencies as well as advocate for the equipment of the Health Centre. Also, members of the community indicated interest to work closely with the staff of the Health Centre.

Additionally, the co-researchers appeared to assume leadership roles that are capable of providing stimulus to encourage other members of the community to continue to take actions that may prevent maternal deaths. These were indicated in the promise of a Chief to advise that any expectant mother who develops a health problem should be taken immediately to the hospital. The new knowledge appears to have led to empowerment of the people to some extent which enabled them to take some actions which potentially may prevent maternal deaths.

Although both traditional (Chiefs) and contemporary (government) policy-makers were sensitized on different occasions during the advocacy meetings on the preliminary findings of this study, the Chiefs readily displayed a willingness to take action to help as previously discussed. On the contrary, though the project was appreciated but due to bureaucratic constraint, the government policy-makers could not readily render assistance. Government workers are always constrained to working within bureaucratic processes which are notoriously slow. However, a strong alignment between government and civil society efforts for health promotion is recommended as this would enhance action on health inequalities and can support more inclusive and healthier societies (WHO *et al*. 2016).

Another aspect of impact of this study is that, members of the community, who were actively involved in this study, became engaged in the diffusion of the new knowledge by sharing lessons from the community education with other members of the community. This finding supports the position of Akande (2007), who stated that community education is geared towards spreading understanding and providing necessary skills in various areas which includes health to enable community members to solve their problems. This practice suggests that since the Clergymen are very highly respected in the community, their involvement in education to prevent maternal mortality will be predicted to have a far-reaching effect. Therefore, we recommend their involvement in community programmes to prevent maternal mortality.

In general, the concept of empowerment has been widely used in the attempt to bring about change, however, it may not be a panacea to all problems. It has been observed that some people may feel empowered only cognitively while not being economically and politically empowered (Jacob 2013). This was also observed in this evaluation; while members of the community demonstrated revised knowledge about the causes of maternal mortality, economically, their fate hung on the government and the traditional leaders for the provision of adequate health and transportation infrastructures respectively. The introduction of social entrepreneurship schemes (Malunga *et al*. 2014), may be necessary to create an avenue for communal financial resource generation, for example, revolving funds. These may be established through joint commercial ventures such as palm oil milling and sales. From this money, any amount that is used is replaced to ensure availability of the full amount again. This may enable the community to generate money to finance some communal projects, for example, transportation, thus making them less economically dependent.

In conclusion, based on the evidence generated in this project, progress has been made in the attempt to bring about a positive change in a rural community's perception, knowledge, attitudes and practices towards pregnancy and childbirth. Through the process of PAR, required resources were identified and mobilized, thus facilitating the empowerment of some members to take action that may prevent maternal deaths. The early adopters of this project are expected to set in motion the activities for more widespread change. These actions from our study may result in reduction of maternal deaths. However, these changes need to be sustained through skilled birth attendants / health system collaboration with the community. The actions are expected to complement other strategies put in place by the WHO, related to skilled birth attendance and emergency obstetric care to prevent maternal deaths. To the best of our knowledge, this is the first PAR which has mobilised a community to prevent maternal mortality in Nigeria.

Through a PAR strategy, there is a potential for positive change as a result of mobilization and empowerment of the community to take action in collaboration with skilled birth attendants towards reduction of maternal mortality. We recommend that capacity of skilled birth attendants needs to be developed to incorporate community engagement strategy in programmes to reduce maternal mortality. Midwives can help work with communities by engaging in information-sharing programmes on maternal mortality and its prevention. They can use techniques such as community mobilisation to address cultural norms and help to get the community to take ownership of some of the problems like transportation and can also set up forums between skilled birth attendants and TBAs to promote the timely care and referral of women during childbirth.

Acknowledgements

The authors express their thanks to members of the community and health professionals who participated in this project especially, Chief Archibong Adim, Pastor Effiong Obong,, Mma Ikana Ukpabio, Mma Margaret Joseph, Asari Archibong, Glory Etefia, Mma Roseline Effiong, Oluseun Olarewaju, Iquo Ekpo, Theresa Esuabanga, Mary Umoh and Dorothy Odo.

REFERENCES

Abubakar, A., Van Baar, A., Fischer, R., Bomu, G., Gona, J. K., Newton, C. R. (2013). Socio-Cultural Determinants of Health-Seeking Behaviour on the Kenyan Coast: A Qualitative Study. PLoS ONE, 8(11)(e71998).

Adah, S. O., Ogbonna, C., Anga, P., Chigle, m. p., Ashikeni, M. A., Envuladu, E., Agaba, C., Audu, S., Bupwatda, P., Zoakah, A. J. (2010). The impact of advocacy and community mobilization on the utilization of health services at the Comprehensive Health Centre , Gindiri. Research Gate.

Akande, J. O. (2007). The place of community education in Nigeria. *Educational Research, 2*(10), 264 - 270.

Carr, W., Kemmis, S. (1986). Becoming Critical: Education, Knowledge and Action Research. Falmer Press, London.

Denscombe, M. (2010). The Good Research Guide for small-scale research projects. Open University Press, Berkshire.

Esienumoh, E. E., Allotey, J., Waterman, H. (2018). Empowering members of a rural southern community in Nigeria to plan to take action to prevent maternal mortality: A participatory action research project. Journal of Clinical Nursing DOI:101111/jcn14244.

Etuk, S., Itam, I. H. & Asuquo, E. E. J. (2000). Morbidity and mortality in booked women who deliver outside orthodox health facilities in Calabar, Nigeria. Acta Tropica 75, 309-313.

Federal Ministry of Health (2014). Mother, Newborn and Child Health and mortality in Nigeria –General Facts. Abuja, Nigeria.

Freire, P. (1970). The pedagogy of the oppressed. Herder and Herder, New York.

Gibson, C.,(1991). A concept and analysis of empowerment. Journal of Advanced Nursing, 16**,** 354-361.

Greenhalgh, T., Glenn, R., Macfarlane, F., Bate, P. & Kyriakidou, O. (2004). Diffusion of Innovation inn Service Organization: Systematic Review and Recommendations. Milbank Quarterly. 82(4):581- 629

Greenwood, D. J., Levin, M. (2007). Introduction to Action Research. Social research for Social Change. SAGE Publications, London.

Gruszin, S., Jorm, L., Churches, T., Madden, R., thackway, S., Madden, R. (2010). Public Health Classification Project - Determinants of Health. Phase 2 Final Report.

Hart, C., Bond, M. (1995). Action Research for Health and Social Care. Open University Press, Philadelphia.

Ingabire, C., Allai, J., Hakizimana, E., Kateera, F., Muhimuzi, D., Nieuwold, I. (2014). Community mobilization for malaria elimination: Application of an open space methodologyin Ruhuha sector, Rwanda. Malaria Journal. 13, 167.

Jacob, F. (2013). Empowerment: a critique. British Journal of Community Health Nursing. 1, 8.

La-Morte, W. W. (2018). Diffusion of Innovation Theory: Boston School of Public Health.

Kim-Ju, G., Mark, G. Y., Cohen, R., Garcia-Santiago, O., Nguyen, P. (2008). Community mobilization and its application to youth violence prevention. American journal of Preventive Medicine, 34(3S)**,** S5.

Kinicki, A., Kreitner, R. (2008). Organizational Behavior: key concepts, skills and best practices. McGraw-Hill Irwin, Boston.

Koch, T., Kralik, D. (2006). Participatory Action Research in Health Care. Blackwell Publising Limited, Oxford.

Koshy, E., Koshy, V., Waterman, H. (2011). Action Research in Healthcare. SAGE Publications Ltd, London.

Malunga, P., Iwu, C. G., & Mugobo, V. V. (2014). Social Entrepreneurs and Community development. A literature analysis. *Mediterranean Journal of Social Science*, *5*(16).

Mboho, M., Furber, C., & Waterman, H. (2013). Social-cultural practices and beliefs influencing maternal mortality. *African Journal of Midwifery and Women's Health*, *7*(1), 26-31.

Miles, M. B., Huberman, A. M. (1994). Qualitative Data Analysis. SAGE, London.

Ortiz, L. G. (2017). Community mobilization and Primary Prevention.www.igoconsulting.org

Osubor, K. M., Fatusi, A. O., Chiwuzie, J. C. (2006). Maternal Health-seeking behaviour and associated factors in a rural Nigerian Community. Maternal and Child Health Journal 10(2)**,** 159-169.

Rappaport, J. (1984). Studies in empowerment: Introduction to the issue. Prevention in HumanServices 3**,** 1-7.

Reason, P., Bradbury, H. (2009). Handbook of Action Research. SAGE, Los Angeles.

Reeve, J., Paperboy, D. (2007). Evaluating the evaluation: Understanding the utility and limitations of evaluation as a tool for organizational learning. Health Education Journal, 66(2)**,** 120-131.

Rimer, B. K., Glanz, K. (2005). Theory at a Glance: A Guide for Health Promotion Practice. US Department of Health and Human Services. National Institutes of Health. National Cancer institute.

Rosato, M., Laverack, G., Graham, L., Tripathy, P., Nair, N., Nwamsambo., Azad, K., Morrison, J., Butha, Z., Perry, H., Rafkin, S., Costello, A. (2008). Community participation: Lessons for maternal, newborn and child health. Lancet. Lancet, 372**,** 962-971.

Shehu, D. J. (2000). Community participation and mobilisation in the prevention of maternal mortality in Kebbi, Northwestern Nigeria. In: Berer, M., Ravidran, T.K.S. (Eds.),Safe Motherhood Initiatives Critical Issues. Blackwell Science Limited, London.

Somekh, B. (2006). *Action Research. A methodology for change and development*. Glasgow: Open University Press.

Stringer, E. T. (2007). Action Research, A Handboook for Practitioners. SAGE Publications, London.

Titaley, C. R., Hunter, C. L., Heywood, P., Dibley, M. (2010). Why don't some women attend antenatal and postnatal care services?: A qualitative study of community members' perspectives in Garut, Sukabumi and Ciamis districts of West Java Province, Indonesia. BMC Pregnancy and Chidbirth. DOI:10.61http://wwwbiomedcenttral.com/1471-2393/10/61. Viewed 7 May 2018

Van Dyk, A. C. (2001). Traditional African beliefs and customs: Implications for AIDS education and prevention in Africa. South African Journal of Psychology, 31**,** 60-66.

Waterman, H., Harker, R., MacDonald, H., McLaughlan, R., Waterman, C. (2005). Advancing opthalmic nursing practice through action research. Journal of Advanced Nursing, 52(3)**,** 281-290.

Wekesah, F., Izugbara, C. (2017). Report on Maternal health in Nigeria: Facts and Figures. African Population and Health Research Centre, Nairobi, Kenya. www.aphrc.org/publications/maternal-health-nigeria-situation-update/.

WHO, UNDP. (2016). Health in Sustainable Development Goals. Policy Brief 3: Social Mobilization. 9th Conference on Health Promotion, Shanghai.

WHO, UNICEF, UNFPA, World Bank Group, United Nations Population Division (2015). Trends in maternal mortality 1990 to 2015. Geneva, Switzerland.

Winter, R., Munn-Giddings, C. (2001). A Handbook for Action Research in Health and Social Care. Routledge, London. https://.org/10.4324/9480203199671