

Full Length Research Paper

Now that Nigeria is polio-free: The effects that social mobilisation programme on polio immunisation program had on the hard to reach parents of children eligible for immunisation programmes in Nigeria

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Vaccination prepares the body's immune system ready to recognise, destroy and remember foreign disease-causing agents when it encounters them. It is the most effective way of averting communicable diseases if fully accepted and demanded by the population at risk of spreading contagious diseases. Social mobilisation has been a critical way of encouraging demands, as well as acceptance and compliance, by the general public for immunisation services. Vaccination campaign against poliovirus by WHO since 1988 was a huge success across the globe except in three countries: Nigeria, Afghanistan and Pakistan. Up until 3 years ago, polio eradication remained a challenge in Nigeria due mainly to non-acceptance of the vaccination by the hard-to-reach (HtoR) group. In this study, carried out at the height of the epidemic in Nigeria, we investigated the effects that social mobilisation on polio vaccination had on the hard-to-reach group. The participants were selected based on three criteria: age of the child, religion and social status. Semi-structured interview was employed and data analysed using the thematic content analysis. The results revealed that religion, service factor-distance to health facility and health staff behaviour are the key factors limiting the social mobilisation effort among the HtoR group. Nigeria began to make success only when one of the most respected Muslim leaders took ownership of the campaign for the elimination of polio, which has now placed Nigeria among the polio-free countries. Therefore, effective social mobilisation for vaccination programs of the HtoR group could be achieved faster with the involvement of religious leaders because of the enormous influence they have on their followers. This revelation is very important to note for the success of the upcoming vaccination campaign against COVID-19 disease, now that effective vaccines against the disease have been developed and ready for distribution.

Keywords: Poliovirus, COVID-19, vaccination, social mobilisation, hard-to-reach population.

INTRODUCTION

Vaccination prepares the immune system of the body to recognise, destroy and remember foreign disease-causing

agents in subsequent attacks (O'Neill, 2005). It has been used to reduce health inequality worldwide and has

significantly minimised burden of infectious diseases (Quinn and Kumar, 2014). Vaccines are produced from weakened or killed state of the disease-causing organism (Karch and Burkhard, 2016) and generally accepted as a major means of attaining public health successes (Schlipkötter and Flahault, 2010); as in the case of smallpox eradication.

Smallpox, caused by variola virus, was thought to start from Egypt in the 3rd century and spread across the globe with the development of civilisation, exploration and expansion of trade routes (Kennedy et al., 2009; Ferrari et al., 2020). This disease claimed the lives of more than 300 million people in the 20th century (Henderson, 2011). The discovery of vaccine to prevent the wide spread of the disease ignited the usefulness of vaccine production and the disease was the first communicable disease to be eradicated through massive immunization (Strassburg, 1982; Okwo-Bele and Cherian, 2011). This success spurred the World Health Organisation (WHO) to focus on eradicating most vaccine-preventable diseases, with polio virus at the fore front (Duintjer Tebbens and Thompson, 2018). However, as economically useful as immunisation seems to be, it is not wholesomely accepted by many groups of people across the globe.

Vaccination campaign against poliovirus by WHO since 1988 was a huge success across the globe (Figure 1) except in three countries: Nigeria, Afghanistan and Pakistan (WHO, 2013). Refusal or delay in acceptance are determined by the following: contextual influence-religion, culture, gender, socio-economic, communication and media environment; individual and group influences-personal experience with vaccination, health system and providers trust; and vaccine/vaccination specific issues-risk/benefit and cost (MacDonald, 2015).

In Nigeria, religion is the major factor influencing refusal of immunisation among the hard-to-reach (HtoR) population (Nasir et al., 2014). HtoR population refers to the urban poor, minority groups, religious groups, geographically disadvantaged and nomadic groups that do not benefit from public health services. According to Asije et al. (1999), the two characteristics of HtoR groups are: they embrace religious or cultural beliefs that dictate their health decisions, and surprisingly, they can be in either the extremely low or high social status. However, most studies suggest that they are more often from the lower social status (Matthews and Diamond, 1997, Waisbord, 2004). Therefore, as a result of some or all of these disadvantages the children from the HtoR groups are not covered during polio immunisation exercises, even though they are more vulnerable to acquiring the disease. In other words, the immunisation of such group is influenced by the circumstances surrounding them (Matthews and Diamond, 1997).

Examples of HtoR groups in Nigeria are the Moslems, the Fulanis and few Christians e.g. the Faith Tabernacle followers (Asije et al., 1999). It is usually difficult to ensure that these populations are reached by health services because of various economic or social barriers; this is why special strategies, like social mobilisation, are used (Rasmuson, 1990). This HtoR group, if not properly immunized against all vaccine-preventable diseases, could form human reservoirs for reintroduction of the supposedly eradicated diseases in the general population. Social mobilisation was one of the key strategies adopted to increase awareness and combat the social barriers to polio eradication (NPC, 2004). At the peak of the polio epidemic in Nigeria, we investigated the reasons behind hard-to-reach parents' choices for accepting or rejecting the immunisation of their children. The present investigations revealed that religion, service factors such as distance to health facility and health staff behaviour, are key factors limiting the effects of social mobilisation effort among the HtoR group in accepting vaccination campaigns. These limitations and the rumour that vaccination is being used to sterilise the people were overcome when the religious leaders were engaged, resulting into full acceptance and ending polio epidemic in Nigeria.

METHODOLOGY

The research process was carried out using primary and empirical data that was generated during this study. The effects of social mobilisation from the perspective of the parents of children eligible for the immunisation programme in Nigeria were examined. As this study sought to discover the opinions of parents about the effect of social mobilisation, a phenomenological approach was most relevant (Parahoo, 1997). The main tool of data collection in this phenomenological study is the semi-structured interview (Moule and Hek, 2011).

Research setting

The study setting was an urban Local Government Area (LGA) with a lot of deprived places lacking good roads, water and power supply. In this LGA, there is a large population of Moslems who settled together. The areas where these Moslems reside are amongst the deprived areas in this LGA. The population living in the LGA as at study date was 90,689, with only one health centre centrally located within it. The interviews were carried out at participants' homes and at their convenient times.

Sample

A purposive sampling method was used for this research, which means that a non-random selection was carried out to deliberately

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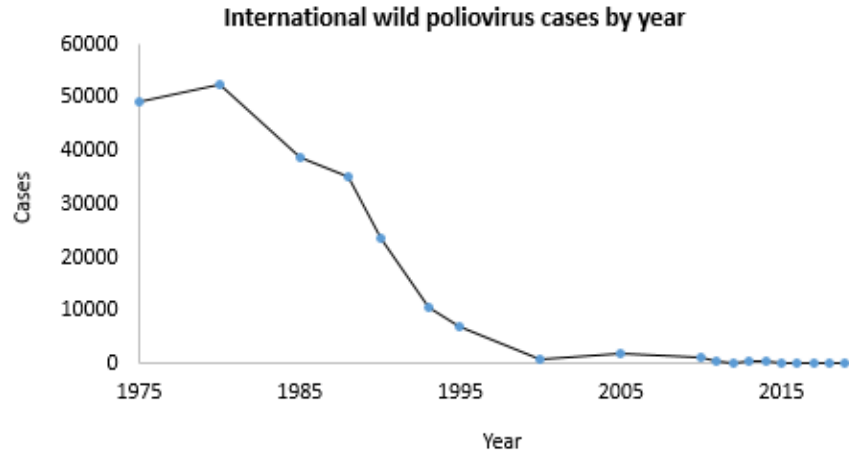


Figure 1. Wild poliovirus cases by year showing sharp decline with the use of vaccine.

Table 1. Categorisation of problems affecting immunisation

Consumer issues in immunisation uptake	Service issues in immunisation uptake
Demand and Participation	Awareness creation
Culture and trust	Sources of information
Religion	Primary health care provision
Decision taker and caregiver	Health staff and their attitudes

select the people with the characteristics of HtoR population (Bollens, 2000). Since most previous studies on social mobilisation in Nigeria have interviewed staff who implemented social mobilisation (Asije et al., 1999; Waisbord, 2004), this study differed in that it involved parents rather than staff members in the interviews. The participants were selected based on three criteria: age of the child, religion and social status. This is because the literature revealed that HtoR groups were characterised by culture or religious beliefs and low social class groups (Waisbord, 2004; Yahya, 2006).

Moslem parents with children from age 0 to 59 months were selected, because this is the age in which children are eligible for polio immunisation. There were 3 mothers and 4 fathers in the sample. In this study, three participants had education up to higher institution, another three had only primary education and one was uneducated. Although the study anticipated interviewing ten participants, only seven were interviewed due to the difficulties encountered while accessing and gaining the consent of participants. It must be acknowledged that this small sample number makes the study non-generalisable; besides, the purposive sample is a non-probability sample. This means that the result of the study will not be able to state the probability of the target population but the findings from this research will be useful for subsequent social mobilisation activities in Nigeria.

Ethical and moral issues

The participants were asked to give their informed consent in written form before participating in the study. They were also informed of their freedom to withdraw from the study at any time without affecting their immunisation rights. The interviews were

transcribed in such a way that participants' anonymity was maintained. In preparing for the study a proposal was written and submitted to the School of Health Science (SHS) in the University of Wales, and this proposal was approved by the Research Ethics Committee. A request was then made at the Department of Health in Rivers State to grant permission for the study to be carried out within the state, and this permission was granted.

Method of data collection

A semi-structured interview was used in order to ensure that the topic was explored in depth and to help to get the respondent's views in detail. The semi-structured interview also facilitated the investigation of pertinent matters that arose during the course of the interview. Each interview lasted for about 45 to 55 min. Three interviews were carried out in English while four interviews were carried out in Pidgin English because some of the respondents could not speak English.

RESULTS AND DISCUSSION

In this qualitative study, the effects that the social mobilisation programme on polio immunisation program in Nigeria had on HtoR group were assessed. Rasmuson (1990) categorised the problems affecting immunisation uptake under two broad headings: consumer issues and service issues (Table 1) and the three themes of social mobilisation link to these two broad heading is as shown

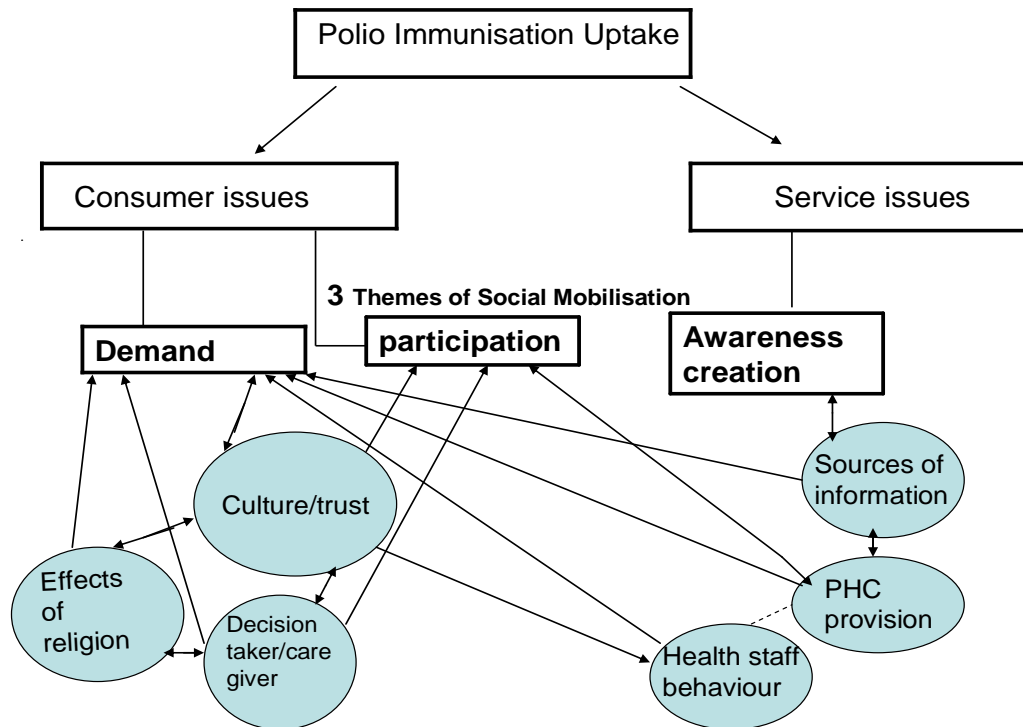


Figure 2. Themes of social mobilisation. How the three themes of social mobilisation link to the consumer and service issues affecting polio immunisation and the interconnectivity of the categories that emerged from this study

in Figure 2. These were used to group and categorise the findings of this study.

Awareness

Although the participants demonstrated some level of awareness of poliomyelitis, parents had very little information compared to what they were expected to know. For instance, most parents could not describe the symptoms of polio virus (Table 2), the target age group to be immunised or the right name of the vaccine used for polio immunisation. Basic immunisation messages usually contain messages like symptoms and consequences of poliomyelitis (Mehndiratta et al., 2014), the safety of the Oral Polio Vaccines (OPV), the target age group to be immunised (0-59 months), the dates and locations for both mass and routine immunisations and the need to support and participate in the exercise (Gage et al., 1997). The gap in parents' knowledge may have helped fuel false information to thrive and lead them to reject immunisation. Although parents' awareness contributed to the acceptance of immunisation, nevertheless, the level of awareness which they had did not adequately equip them with the cognitive and social skills to be able to access immunisation services. For instance, when they were disadvantaged, such as when the health facility was

far away or when parents had no money for transport, parents usually opted out from accessing the service. Most of the participants got their children immunised only when they were in advantageous situations or when access to the service was easy. It was previously mentioned that in addition to basic information, social mobilisation should contain messages to target specific audience (Asije et al., 1999; Rasmuson, 1990). Such messages should promote understanding and access to information that will empower them to both support health service delivery and gain access to it. This means that when disadvantaged people like HtoR groups are the target audience the content of mobilisation messages should enhance their ability to make wise choices about immunisation.

It is argued that awareness creation or campaigns, where information is transmitted through interpersonal communication and media campaigns, were based on simple relationship between communication and behavioural change. Overtime, most campaigns that operate on this scale have failed to impact health behaviours (Nutbeam, 2000). It is believed that communication through mass media does not increase disadvantaged peoples' control over the determinants of health and it fails to increase their confidence to effect changes. It is therefore suggested that more personal forms of communication methods should be utilised for

Table 2. Vaccine-preventable diseases and their symptoms.

Disease	Symptoms
Polio	Fever, sore throat, headache, vomiting, fatigue, back pain or stiffness, neck pain or stiffness, pain or stiffness in the arms or legs and paralysis
Cervical cancer	Blood spots or light bleeding between or following periods, menstrual bleeding that is longer and heavier than usual, bleeding after intercourse, douching, increased vaginal discharge, pain during sexual intercourse, bleeding after menopause, unexplained, persistent pelvic and/or back pain
Cholera	Profuse watery diarrhoea, vomiting, thirst, leg cramps, restlessness or irritability
Diphtheria	A thick grey-white coating at the back of the throat, a high temperature (fever) of 38°C or above, feeling sick, sore throat, headache, swollen glands in the neck, difficulty breathing and swallowing
Hepatitis B	Abdominal pain, dark urine, fever, joint pain, loss of appetite, nausea and vomiting, weakness and fatigue, yellowing of the skin and the whites of the eyes (jaundice)
Influenza	Fever or feeling feverish/chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue (tiredness), vomiting and diarrhoea, which is more common in children than adults
Japanese encephalitis	Fever, headache, weakness, and movement disorders. Seizures are common, especially among children
Measles	Cough, runny nose, inflamed eyes, sore throat, fever and a red, blotchy skin rash
Meningitis	A high temperature, cold hands and feet, vomiting, confusion, breathing quickly, muscle and joint pain, pale, mottled or blotchy skin, spots or a rash
Typhoid	Weakness, stomach pain, headache, diarrhoea or constipation, cough, loss of appetite
Mumps	Discomfort in the salivary glands, difficulty chewing, pain and tenderness of the testicles, fever, headache, muscle aches, tiredness and loss of appetite
Pertussis	Paroxysms (fits), rapid coughs followed by a high-pitched “whoop” sound, vomiting during or after coughing fits, exhaustion after coughing fits
Pneumonia	Cough, which may produce greenish, yellow or even bloody mucus, fever, sweating and shaking chills, shortness of breath, rapid, shallow breathing, sharp or stabbing chest pain that gets worse when you breathe deeply or cough, loss of appetite, low energy, and fatigue
Rabies	Irritability or aggressiveness, excessive movements or agitation, confusion, bizarre or strange thoughts or hallucinations, muscle spasms and unusual postures, seizures, weakness or paralysis
Rotavirus	Decreased urination, dry mouth and throat, feeling dizzy when standing up, crying with few or no tears and unusual sleepiness or fussiness
Rubella	A low-grade fever, headache, mild pink eye (redness or swelling of the white of the eye), general discomfort, swollen and enlarged lymph nodes, cough and runny nose
Tetanus	Jaw cramping, sudden, involuntary muscle tightening (muscle spasms) – often in the stomach, painful muscle stiffness all over the body, trouble swallowing, jerking or staring (seizures), headache, fever and sweating, changes in blood pressure and fast heart rate
Varicella (chickenpox)	Blister, scab, ulcers, or red spots fatigue, fever, loss of appetite, headache, itching, sore throat, or swollen lymph nodes
Yellow fever	Fever, headache, jaundice, muscle pain, nausea, vomiting and fatigue, bleeding, jaundice, delirium internal bleeding, or liver injury
COVID-19	Fever, dry cough, tiredness, difficulty breathing or shortness of breath, chest pain or pressure, loss of speech or movement

better results (Talbot and Verrinder, 2010).

Demand

In this context, demand is used to refer to the utilisation or acceptance of the polio immunisation service; these words will be used interchangeably. Although mass polio immunisation was more accepted than the routine polio immunisation there was still low polio immunisation coverage in Nigeria (Babalola and Aina, 2004). It was suggested by previous studies that this low uptake is primarily caused by service problems (Abdulraheem et al., 2011) but through this study, it was revealed that both service and consumer issues contributed almost equally to the problem of low uptake. Focusing on the consumer issues, even though parents' awareness about polio was limited, it was discovered that it still contributed to immunisation uptake; unfortunately, theorists suggest that limited knowledge may lead to the inability of the social mobilisation to sustain long term demand for immunisation (Rasmuson, 1990).

Acceptance or rejection was influenced by trust or preference. For instance, it was revealed that most parents permitted their children to be immunised because they preferred western medical approaches while some still rejected the service. In relation to the study's aim to find out about cases of rejection, parents rejected the service because of preference for traditional medicine and service issues like using underage girls as vaccinators. Amongst the parents who accepted the immunisation service there were some who demanded for one type of immunisation rather than both (routine and mass), and this was due to lack of adequate or misunderstood information.

The issues mentioned earlier, such as consumer preference, trust and misunderstandings may suggest that although parents were informed through mobilisation, the messages which they received did not deal with such consumer issues. It may also not have been interactive enough to enhance opportunities for parents to ask questions when they have misunderstanding (Nutbeam, 2000; Talbot and Verrinder, 2010). To support this suggestion it is assumed that the issue of trustworthiness is usually judged based on people's understanding of the information given (Chen, 2004). The issue of trustworthiness is made more serious because of the discovered link between trust and social gradation (Wilkinson and Marmot, 2003). Since Nigeria is a country with various socio-economic classes (upper, middle and lower classes) the issue of mistrust is not surprising. This therefore points back to the issue of preparing mobilisation strategies in ways that consider issues like parents' preference and social class.

Participation

Real participation is when decision making is

decentralised. It involves practices like partnership, delegation of power and citizen control (Talbot and Verrinder, 2010). Through participation, members of the public bring their opinions, contributions and expertise to health issues. It is also a way through which people are made to accept health services (Talbot and Verrinder, 2010). Results of this study suggest that participation was not encouraged by the social mobilisation as implemented. All the participants who were interviewed were only informed about the health service, none of them mentioned being involved in decision making about the service or ever being asked about their opinions concerning the service. It could be seen to be manipulative for people to be asked to participate in services without considering the value of their opinions about a service (Arnstein, 1971). Before participation is requested people should be informed, asked for their opinions in order to encourage them to take ownership of the campaign. This reveals that the implemented social mobilisation only enhances immunisation services that are implemented in the top-down and one-way direction.

Decision taker/caregiver

The issue of parental or caregiver consent is important and should not be undermined in issues of immunisation because the children who receive the immunisation cannot make choices. It was revealed that sometimes the role of caregiver and decision taker is shared between both parents, because of religious or cultural practices. Most of the time, the role of decision taker was given to the father while the role of caregiver was given to the mother. Previous literature showed that infant mortality rates were lower where women were given equal rights and opportunities both at home and outside the home (Wilkinson, 2005). In Nigeria, household decision making is highly dominated by husbands (NPC, 2004) and this culture was practiced by some participants in the study. It has been proposed that the role of social mobilisation in this context is to help such female parents to develop or acquire the confidence to influence such norm that hinders service utilisation (Nutbeam, 2000). Once again, the traditional methods of disseminating information may not be able to achieve this task; instead, more interpersonal methods of communication where dialogue is achieved would be better.

Sources of information

The findings disclosed that the sources of parents' information were linked to their choices. Rejection was influenced by information from sources other than health messages, such as traditional doctors and uninformed parents or friends. Also, the educational attainment of the parents was a predictor of their sources of information. For instance, the least educated parents (those without

any education or with primary education) relied on parents, spouses and traditional doctors for information about immunisation, despite the fact that all parents agreed to have received polio messages from television, health lectures and radio. It was revealed that these parents chose to use these unreliable sources firstly because they felt that they understood and could trust these messages and secondly because they could discuss and ask questions from the providers of the information. This concurs with the proposition that parents will trust messages that are well explained to them through interactive methods (Talbot and Verrinder, 2010; Waisbord, 2004).

Primary health care (PHC)

The findings of the study revealed that social and economic issues such as inaccessible roads, distance to health centres, lack of transport or user fees, parent opportunity cost, lack of power supply and vaccine scarcity affected the provision of the service. Due to all these disadvantages that parents experienced, the utilisation of the service was greatly influenced; but PHC is based on delivering health care to marginalised people through their active involvement in the service delivery; this suggests a strong emphasis on public participation. Unfortunately, as previously stated, social mobilisation was implemented in ways that did not enhance clients' participation. The failure of the clients to partake in the decision making and the execution of the service does not help to plan immunisation programmes that can address socio-economic problems of marginalised parents. This therefore suggests that the social mobilisation may still be far from ensuring that HtoR groups receive services equitably.

Health staff attitude

In the study, some participants complained about the behaviour of some health staff to veiled women. They disclosed that some were prejudiced against them because of their religious practice of wearing the veil. Since the study did not investigate health staff views, no further conclusions can be drawn.

Culture and trust

Parents' cultural beliefs and practices influence their attitude to health practices (Schott and Henley, 1996). The study supported this theory because it disclosed that culture sometimes predicts the health methods parents trusted or preferred. For instance, parents delivering their children at home did not trust western medical methods and hence cared less about polio immunisation.

The issue of culture is linked to religion, for example, although not all Moslems practiced the belief, some parents believed that poliomyelitis was from God. Such parents put in little or no medical effort to prevent the disease. They emphasised more on prayers; this therefore affected the kind of health which these parents expected for their children, which was of very low standard. This is because they see polio paralysis as unpreventable and hence, that which must be accepted if it happens.

Effects of religion

This study revealed that the mosque was not well used for disseminating information during social mobilisation, even though it is supposed to be one of the target places for the mobilisation (Ahmad et al., 2019). Parents admitted that the information they gathered from the mosque was not first-hand information. The information that the parents received from the mosque was usually from casual communications with fellow worshippers outside the mosque, because issues like immunisation were rarely raised by the imams inside the mosque. This therefore suggests how rumours are easily spread amongst the Moslems. Apart from the mosque not being used adequately to circulate correct information about polio, some Islamic practices influence parents' decisions about polio immunisation. Male domination over women (Schott and Henley, 1996) leaves the women as ordinary caregivers who do not have rights to take decisions about their children's health. Some participants did not practice this because of religion but as part of a culture they have become used to. This information from our interviewees underscored the importance of the involvement of religious leaders in disseminating accurate information on vaccination for effective acceptance and demand by their followers.

Indeed, Nigeria was only able to overcome vaccine rejection when the Sultan, the spiritual head of Moslems in Nigeria, supported polio vaccination. The strategy adopted was to enlighten prominent Jumu'a imams, who give the weekly Friday sermon and lead the prayer on that day (Nasiru et al., 2012). They are traditionally the most knowledgeable religious scholars and the most influential and respected in the community. At the end of the training sessions, the majority of the imams were highly receptive to the idea of being engaged in the Polio Eradication Initiative (PEI), with sincere appreciation, a sense of urgency, or even disappointment about the delay in engaging them. Each Jumu'a imam was requested to engage and share information with at least five regular prayer imams within his community. Together, the imams were expected to deliver the message repeatedly after daily prayers, and at public gatherings such as naming and wedding ceremonies (Nasir et al., 2014).

Conclusion

Creating awareness, demand and participation in vaccination exercise would be achieved faster when the religious leaders, who have tremendous influence on the people, are engaged. This will minimise mistrust and accurate information about the benefits of vaccination will be embraced by high-risk population. With the growing mistrust toward COVID-19 vaccination, incorporating the religious leaders, as done with the polio vaccination, will be important for the social mobilisation of COVID19 vaccines that are now being approved and ready for distribution. The earlier the COVID-19 vaccination is demanded and accepted the earlier the world will be ready for normal life to return.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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