

Scientists and the Roman Catholic Church Communication on Scientific Issues in Turkana County, Kenya

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Abstract

The purpose of this study was to examine dynamics of scientists and the Roman Catholic Church communication on scientific issues in Turkana County, Kenya. The contention of this article is that science and religion address threats facing humanity. However, the two are perceived to be in conflict especially on matters of health. A case in point is the use of Artificial Family Planning methods which are supported by scientists. The Roman Catholic Church on the other hand advocates for Natural Family Planning only. Such pedagogical variations inflict confusion to the public. The main purpose of this study was to examine methods in which scientists and the Roman Catholic Church communicate scientific concerns in Turkana County, Kenya. The study is of significance to health policy makers and Roman Catholic Church in addressing hostilities, controversies, and conflicts surrounding Family Planning and other health matters. The Functionalist Theory of Religion, Influence of Presumed Media Influence (IPMI) Theory, and Dialogue Model guided this study. The study adopted a cross-sectional exploratory design. The approach was qualitative. A sample population of thirty-two comprising scientists and Roman Catholic Church congregants were purposely identified. Raw data from key informants and FGDs were coded, classified and categorized to allow for thematic analysis. The major findings were that there are no forums for engagement between scientists and Roman Catholic Church on such topics as health hence scientists and the Roman Catholic Church hardly communicate on Family Planning. Further, findings suggest that although scientists are expected to disseminate research findings to the public, scientists are not effectively trained on science communication. The study recommends that avenues of communication between scientists and RCC on topics such as Family Planning be established.

Key Words: Scientist, Roman Catholic Church, Family Planning, Communication, Turkana, Kenya

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1.0. Introduction

Science and religion are concerned with the generation of knowledge for human welfare and development. Although the two disciplines work towards alleviating human suffering and improving human life, both have developed and claimed legitimacy to different stands which have been viewed as conflicting. Harrison (2015), alludes to this dichotomy to the propositional content of the two enterprises and the methods or modes of knowledge that generate those propositions. The world has witnessed unprecedented levels of development, in science and technology. Scientific and technological developments have made life more comfortable and enjoyable.

Macharia (2009: 133), notes that “the modern technological innovations have changed the world to an extent that those who lived in the 19th century in Africa would be very confused if they came back to life today.” However, such developments which pervade all dimensions of human life, have raised the ultimate questions –questions about the underlying nature of reality, the cause of the universe, the meaning of life and even about morality. Of interest is the debate on the relationship between science and religion, two domains considered to be key sources of knowledge. Polkinghorne (2005) argues that science generates knowledge but technology utilises this knowledge to do things not previously thought to be possible. More developments are being witnessed in the medical sphere, for instance use of Norplant for Family Planning. The Roman Catholic Church (hereafter referred to as the Catholic Church) has cited ethical and theological concerns associated with FP and interpreted such acts as playing God. Consequently, the Church has responded negatively to such developments by issuing statements advising their congregants worldwide not to yield to such practices. The outcome is the throwing of the populace into the dilemma of choosing between their faith and science.

This article examines communication methods that scientists and the Roman Catholic Church (RCC) engage in when communicating their information to the public. It seeks to illuminate how the two entities tackle and reach out to the public on science issues with a focus on Family Planning (FP). It shelters themes including science communication, Behaviour Change Communication (BCC), communication strategies used by the scientists, and the challenges faced.

1.1 Statement of the Problem

Some religious-based organizations have responded negatively to modern developments in the field of science and technology, such as artificial methods of Family Planning. Of specific concern to this article is the Catholic Church which has come out strongly and opposed the use of Artificial Family Planning terming it an immoral practice and therefore against God’s plan. A communication gap exists between scientists and religious practitioners on the subject of

Family Planning. It seems the Catholic Church strongly advocates for Natural Family Planning methods, while scientists champion artificial methods. This article, therefore, attempts to seal the gap and answer the question: Why is it that there are differences in those positions on the same matter? Could it be a case of communication breakdown or outright lack of communication between scientists and religious authorities such as Roman Catholic Church on policies and approaches aimed at addressing health matters?

1.2 Objectives of the study

The objective of this article is to examine methods in which scientists and the Roman Catholic Church communicate scientific concerns in Turkana County, Kenya.

1.3 Communication on Science Issues

There is an influx of new scientific and technological advances in Sub-Saharan Africa which requires scientists to come up with creative ways of communicating to the community. One scientist in the area of the study explained that they:

... pass scientific information to the public, through seminars and workshops...the internet, papers, and books are rich sources of scientific information (KI 001)

Upon further interrogation, whereby the researcher sought to know whether they incorporated the locals during the actual research and dissemination process, it was revealed by one of the informants that:

... scientists are at the core of every research...goal of every research is to mitigate existing challenges although we might not involve locals because they are non-experts...however, some processes may pose some challenges to their lifestyles... (KI002)

Some scientific advances are suspected to be causing moral depreciation within traditional societies, especially in this information age, thereby threatening the vital role of traditional institutions that serve to inculcate community values. The Koech Commission (1999) observed that the institutions within the African traditional setting which had been responsible for inculcating values are no longer operational due to the rapid changes in society.

There is a new shift in the field of basic and developmental science which demands citizen inclusion in those studies. The revelation made by scientists suggests that locals are rarely involved in the process of research. Neupane (2015) asserts that, if basic research is to be used for the betterment of human lives, there is no better way to identify a citizen's needs and challenges. Science should serve the interests of those people in the associated developmental processes. The foregoing is in line with the democratization of knowledge and observance of the rights of the participants involved as part of the new trends in research. Neupane further illustrates that without citizen involvement, no social good can come of open data, since there will be no recognition of local needs for subsequent data downscaling and data mainstreaming.

Science, whose engine is research, has been credited with alleviating human suffering

through technological innovations in line with the view that basic research is extremely important for any scientific research. Almost all facets of human life have a contribution from science; more resources are channeled towards conducting more research. Currently, as human life and the world economy are threatened by the coronavirus (COVID-19) pandemic, all eyes are focused on scientists and the World Health Organization (WHO) to come up with a remedy, possibly a cure. WHO has strived to fight the Corona Virus pandemic which has posed dual economic and health crises in the world (Wong, *et al.*, 2020).

In Kenya, efforts to control the spread of COVID-19 have been put in place by the Ministry of Health (MoH). The foregoing effort has gone through challenges such as misinformation, misconceptions and the unwillingness of the general public to follow the guidelines laid out by the MoH such as banning social gatherings (Wong *et al.*, 2015). Austrian *et al.* (2020), revealed that most participants reported receiving information on COVID-19 from a wide variety of sources. The study also noted that there were some misconceptions regarding specific symptoms. Historically, researchers (scientists) have saved the world from similar epidemics such as polio, and malaria; they have led the discovery of antiretroviral (ARVs) for persons living with HIV.

1.4 Communication on Family Planning

The objective of this article was to explore ways in which scientists and the Roman Catholic Church communicate on science issues in Turkana County, Family Planning being of particular interest. Family Planning communication refers to the various campaigns adopted in the promotion of FP to the intended audience. Communication has played a critical role in the promotion of FP since its adoption in Kenya (Mokaya, 2014). Over time, communication methods have evolved due to the dynamic nature of the world. The Population Council (2012) has identified various historical epochs through which communication methods have evolved. To begin with, the 'Clinic model' was predominant in the 1960s. The model was characterized by a doctor and nurse lecturing patients on contraceptive use in clinical facilities. Later, the 1970s ushered in the 'field era' that was characterized by community-based distribution and home visits to encourage the use of contraception. Lastly, the 'Strategic communication' took over in the 1990s. Strategic communication shifted the attention to evidence-based programs and evaluation. Findings obtained from the field through FGD revealed that health groups-NGOs, public and private, normally hold extensive consultations with village elders to build awareness of health.

Data from one of the FGDs revealed that scientists used various modes of communication such as:

Radio, outreaches, using CHV, using articles and journals, health staff and TV adverts to spread talks on FP (Informant 3, FGD 002).

Scientists have diversified avenues of disseminating scientific information to the public. The avenues incorporate all the stages through which communication on FP has evolved. Diversification of approaches is an effort to increase the bracket of FP users so that the illiterate who cannot benefit from written materials on FP can be assisted through the help of CHVs. Mass media commonly in use in Kenya include radio, TV, posters and newspapers. Radio and

TV can incorporate other outreach programs such as drama, expert talk shows and songs. Behaviour Change Communication (BCC) programs also use “small media” with a more limited reach, such as videos, audio cassettes, pamphlets/flyers, and FP messages in various paraphernalia such as T-shirts, key chains, hats, calendars, and mugs (Population Council, 2012). In Kenya, a modern practice is organizing road shows, especially to cover lower economic zones. To make it effective in transmitting their message, they partners with groups such as a specific radio station or corporate enterprises. Almost always, on board is a team of entertainers such as comedians musicians and dancers to ensure the target audience does not get ‘bored’ but remains active.

Community-level events involve many activities, with a common characteristic of meeting the population face-to-face in their social environment (Population Council, 2012). The Council postulates that much of the community mobilization operates on the principle that empowering communities to take ownership of their health needs is essential to effective and sustainable programs. One of the Scientists further revealed that;

We conduct outreaches with the target FP users...with the help of community health volunteers (KI 002).

Another scientist revealed that:

We organize seminars and workshops...we also produce scientific reports and publish papers in journals...scientific information is also available from the internet websites (KI 004).

In a run-up to this, members from the village are selected to be trained on health matters such as FP as explained below by one informant in a Focus Group Discussion (FGD) who made the following revelation

We have had some of our (Turkana) members recruited as community health workers to assist doctors (scientists) in engaging the community members on FP (FGD 001).

This is the approach that encourages the sharing of information between scientists and the locals, which is part of the democratization of science that encourages members of the community to be part of the solution.

Scientists also revealed that they were careful not to get into conflicts with the community elders on culture. One noted that:

As doctors (scientists), we normally hold extensive consultations with the village elders to build awareness on health matters such as FP (KI 003).

The population in Turkana County is considered to be indigenous; its culture has not been heavily influenced by modernity. Concerning the use of mass media, scientists were quick to point out the importance and risks that were associated with it. Their responses included;

We have been able to reach many of our targets in Turkana through the use of radio stations that are available in Turkana County...they have a wide audience (KI 001).

Yet another scientist reported that;

Mass media such as the radio and newspapers are strategic...but they also run the risk of misrepresenting FP facts to the populace and the outcome may be that FP suffers rejection (KI 003).

Scientists acknowledged the significance of incorporating mass media in their work but not without reservations. Their major concern was that the media might misrepresent FP facts to the locals; the outcome may be the emergence of controversies and eventual rejection of FP. However, scientists should be ready to debunk controversies for the benefit of users.

The Population Council (2012) notes that the media industry has advanced in developing countries; it has sophistication in communication strategy and evidence-based approaches, resulting in higher-quality FP programs. Part of the concern of this study was to explore ways adopted by the scientists and RCC in promoting the uptake of FP. Kenya has made FP a component in the realization of UHC (Mvurya, 2020). BCC programs are the most widely used means of disseminating FP messages in developing countries, including Kenya (Population Council, 2012). Such programs appeal to people's aspirations, provide factual information and seek to dispel myths and misconceptions surrounding FP methods. These are some of the strategies that have been adopted in promoting FP in Turkana County by scientists. Despite the efforts put forth in these programs, misinformation still finds its way to the populace leading to prolonged controversies and even rejection of FP services. In line with this, scientists were requested to indicate how they handle controversies and rejection of FP services by potential users. A response from one of them and which is typical and representative went as follows: :

Attempts have been made before to counter controversies and rejection of FP ...like calling a presser, publishing reports and giving replies in the papers...apart from that we also research and testing of our results to ascertain the reliability and safety of FP drugs (KI 001).

The scientists are aware of controversies and rejection of FP in some instances and have taken steps to counter them. However, the measures taken are not assertive and as such they are overwhelmed by controversies. The implication is that damage would have been caused and a significant populace would not believe the scientists at this point. The GoK in conjunction with private organizations have adopted various campaign programmes aimed at reaching different audiences. They operate at levels such as communities, individuals, service providers and advocacy within policy-makers. Advocacy communication is aimed at influencing the opinions and decisions of policymakers regarding laws, regulations, and other structural factors that affect contraceptive use (Population Council, 2012). A number of the GoK policy documents place a strong emphasis on the important role of Social and Behavioural Communication

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Change (SBCC) in improving Reproductive Health/FP behaviours and health outputs (Ministry of Public Health and Sanitation, 2010). These include *FP Guidelines for Service Providers*, *Youth Reproductive Health Policy*

The article sought to find out whether scientists in Turkana County incorporate these programs as outlined by the Population Council (2012) when carrying out the promotion of FP in Turkana. Scientists intimated that;

As doctors (scientists), we sensitize the locals on the significance of having smaller families...linking it with the assurance of a better economy and healthcare in their families (KI 002).

Scientists were aware of showing connection between the adoption of FP and better healthcare and the economy of the locals. They do this by linking a better future with the adoption of FP. These programs appeal to the aspirations of the audience (Population Council, 2012). Messages in this category include sensitizing the people with information such as smaller family ensures quality life of for both the children and the parents. Capitalizing on the benefits of accepting FP, the parents are informed that they can comfortably provide for the needs of the children without necessarily overstretching the available resources. While many couples aspire to meet the needs of their family without 'begging', the adoption of FP is thought to easily find acceptance.

According to the Population Council (2012), the provision of factual FP information facilitates contraceptive adoption. The researcher enquired about this from scientists and the revelations included;

Adoption of FP is dependent on information provided to potential users everywhere...it is the right of users also to know about the side effects of the methods ... (KI 003).

The above information concurs with BCC programs championed by the Population Council (2012). It insists on factual information that facilitates contraceptive adoption, including types of methods, safety, sources of supply, and management of side effects. A lot of controversies have rocked FP services due to misinformation. Several barriers to the uptake of FP, such as perceived and actual side effects of contraceptive methods, can be circumvented through scientific communication (Ochako *et al.*, 2015). A key to avoiding controversies surrounding FP services is the provision of factual information through effective communication delivered from trusted sources.

The researcher further inquired from key informants on science whether their communication programs sought to dispel myths and misconceptions surrounding FP. Responses included;

FP campaigns have been marred by myths and misconceptions...but we are keen to dispel them by use of truthful information about the FP methods we promote in Turkana County (KI 001).

The information above compares with that of the Population Council (2012), which provides that communication programs seek to dispel myths and misconceptions. Barriers based on myths and misconceptions such as fear that a particular method would render them (clients) infertile (NCPD, 2013) can be dispelled through effective communication. Since various sources are harbouring vested interests, it is unlikely that information reaching the target would be similar.

BCC programs as proposed by Population Council (2012), seek to motivate the intended audience to action. The researcher thus sought to know whether scientists in Turkana County applied this when promoting FP.

Women of reproductive age are the target of our FP campaigns ...we constantly encourage them to share this information with their husbands so as not to risk exposing them to challenges of gender-based violence (KI 001).

Yet another scientist informed that:

we give FP information to bring more women under FP programs...we inspire them to regularly visit clinics for FP information; on how to use and mitigate side effects without necessarily having to discontinue them (KI 001).

The above responses from scientists reflect the prescription of the Population Council (2012), on how BCC works. The BCC programs encouraged target individuals to discuss FP with their spouse or partner, visit a clinic or community worker, initiate the use of a contraceptive method, and manage side effects should they occur, rather than discontinue use. Once a couple receives information on FP, they should be in a position to implement it. BCC comprises four main channels of communication: mass media, community mobilization, interpersonal communication/counselling, and electronic media (Bertrand, Merritt, and Saffitz 2011). Although a given country, program, or organization may rely more heavily on one of these channels, the most comprehensive and potentially effective BCC programs use most or all of them in a complementary manner (Population Council, 2012). In Kenya, the most common intervention program is mass media. This could be attributed to the high number of audience commanded by these sources. Print media, broadcast and health workers have been utilized to deliver FP messages in Kenya by the MoH. In Turkana County, scientists were also using the means to deliver FP messages as shown in the discussion above.

Interpersonal communication/counselling often occurs in an institutional setting, such as a clinic, school or workplace (Population Council, 2012). An extension of counselling has been a norm in Kenya when FP advocates organize peer-education programs with a target audience. Health experts in FP first identify the prevalent barriers to uptake of FP services then use such forums as workshops, marketplaces or schools to address them. It is normally a platform in which the clients interact directly with the experts and their fears are addressed directly and immediately "In clinics we are given various AFP methods from which one can choose...they (scientists) explain to us on how to use them" (FGD 003). Sessions of questions and answers were considered important in elaborating on FP issues and responding to the concerns of the clients. Health experts maximize such forums since it is a kind of dialogue approach to health issues with the non-expert communities.

Electronic media include text messaging, internet counselling, social networking, and related modes of communication via cell phones or the internet. The majority of those active in internet usage are the youth, therefore messages meant to promote FP can be posted online for them. However, this means is expensive; it does not provide wide coverage since it requires internet access and literacy skills. Currently, a complementary approach has been in use since it is the most effective in terms of reaching a wider audience. For instance, a government agency in charge of promoting FP services such as NCPD can partner with a local radio station in Turkana to publicize, and a banking institution, to organize a recreational activity such as a walk or a marathon in promotion of FP.

1.5. Roman Catholic Church Handling of Scientific Information

The RCC relies on Church doctrines for information to guide decision-making and Church communication on every issue. There are a range of scientific and technological contributions to development in the world that have elicited concerns from the RCC. Global warming, abortion, pollution, FP, organ transplant, loss of biodiversity, genetic engineering and surrogacy are some of the major issues which have sustained controversy to the present. These topics have thrown health experts and ethical watchdogs such as the Church into having dichotomies due to a lack of sustained proper scientific discussions. The RCC has responded to such issues through the issuance of various documents, especially encyclical letters by the head of the Catholic Church that have consistent approaches to specific themes. Information in the RCC is relayed from the Pope down to their faithful and the public at large through publication which can then be communicated to the faithful through oral means during mass services.

An interview conducted by the researcher with clergy in the field who was a key informant revealed that RCC has various means of getting messages on any topic, including FP, to its faithful. This can be categorized into three. First is the oral message:

The pulpit is the major forum for dissemination where both the scientists and the laymen are reached with the message (KI 002).

The speaker, usually the clergy, when giving a sermon uses the pulpit to express the position of the RCC on specific topics to guide their faithful. Messages from the Pope guiding the RCC are also read to the faithful.

Second is the written message “Worldwide the RCC has a publication department which is tasked with the production of written copies detailing the stand of RCC or its report on any issue that arises” (KI 002). The Publication Department produces materials such as encyclical letters such as *Humanae Vitae*, On Human Life, ‘Apostolic Letters’, Apostolic Exhortation such as ‘The Joy of Love: On Love in the Family’, and Catechisms. They also have a newspaper known as ‘The Catholic Mirror’. Third are electronic messages “In fact the RCC also has active websites where its faithful or interested persons can access information about the Church and on topics the RCC has commented on” (KI 002). Encyclicals issued by the prelates are also found online to be read by as many readers as possible on sites such as the CNS.

The Kenya Conference of Catholic Bishops (KCCB) which presides as the shepherds of the Catholic Church in Kenya has several established commissions with specific mandates. One of the commissions is the Catholic Health Commission of Kenya (CHCK) with the mandate of

providing leadership on emerging health challenges. The information from the RCC touching on the tetanus vaccine controversy then was handled by CHCK. Examples of documents and encyclicals published by the RCC to address issues of FP abound. They include: *Humanae Vitae* (1968), *Familiaris Consortio* (1982), and *Standards* (2010)

1.6 Humanae Vitae (1968)

In recognition of the rapid demographic development which triggered fears of sustainability in the face of meagre resources among nations of the world. The Pope who is the head of the Catholic Church gave a response in line with God's revelation about the uniqueness of human life. Pope Paul VI in 1968 issued an encyclical letter, *Humanae Vitae*, in response to the pressing questions touching on the regulation of birth. This is in agreement with the data obtained from RCC's key informant who confirmed that RCC does not oppose FP. On further probing, the respondent singled out the encyclical letter, *Humanae Vitae* states that:

The Catholic Church is not against FP ... the Pope in issuing *Humanae Vitae* advocated for the adoption of NFP thus opposing AFP. Opposition to AFP was because it promotes the use of contraceptives such as the use of condoms...as a means to achieving birth control (KI 001).

The document stresses the inseparability of human sexual activity from nature the dignity of human life and the transmission of that life. The direct interruption of the generative process is to be excluded as a lawful means of regulating the number of children (HV 14). Processes that do not promote the dignity of human life or that are preventive of transmission of human life are condemned. The document prohibits any form of contraception and artificial FP as advocated by the majority of advocates of family planning (FP).

1.7 Standards (2010)

The article notes from RCC key informants that there existed various materials that were valuable for guiding their faithful. Some resources have been formulated in one part of the world for their use but its utility can extend to other regions hosting their faithful. This was noted in the case of the *Standards* whereby the RCC key informant alluded that;

...our teachings are derived from key publications of the Church such as *Humanae Vitae* and *Standards* as for birth control...we as clergy are aware of their teachings and we inform our faithful using these materials (RCC key informant 003).

The language suggests that the RCC has various resources at her disposal to guide on issues and the clergy are informed. The *Standards for the Diocesan Natural FP Ministry (2010)* popularly known as the *Standards* is a publication of the United States Conference of Catholic Bishops motivated by the need for a nationally consistent and systematic training of NFP teachers in the United States of America. The document was formulated following the Catholic moral and sacramental teaching on human sexuality, marriage and family life. The NFP experts worked jointly with the members selected from the NFP Program which provides national

leadership and assistance in the NFP ministry for the Catholic dioceses in the USA. The *Standards* target married and engaged couples with quality NFP services covering competent education in line with Catholic doctrines. In matters of sexual intercourse, the RCC teaches that there is an inseparable connection between the two meanings of the act of intercourse- love-giving (unitive) and life-giving (procreative). In line with this teaching contraception use is prohibited. The publication of *Standards* is a challenge to the RCC in Turkana County to also come up with their own that is more focused on FP and targeting the RCC faithful. The RCC has several news outlets that serve to present their stand and view on several issues especially those related to the sacredness of human life. Examples of such outlets are discussed below.

1.8 Catholic News Service (CNA).

During the COVID-19 period, Kenya witnessed an unprecedented upsurge in pregnancies among teenage girls. To mitigate the challenge, the GoK sought to introduce comprehensive sex education in schools and the legalization of abortion which the KCCB of RCC warned against (Bank & Eftekhar, 2020). According to KCCB, the resultant teenage pregnancies and minors' exploitation can be averted through the provision of proper family values and parental responsibilities for nurturing and safeguarding. The news outlet advocates for a solution to alarming figures of teenage pregnancies- of whom a majority are school-going, from within the family; safeguarding all children. On the same topic, the RCC voice was also made clear when the national broadcaster aired a live service from Holy Family Basilica where the presiding Bishop termed the Reproductive Health Bill unconstitutional. The bill sought to introduce adolescent-friendly reproductive and sexual health information and education. According to RCC, sex education ought to be provided to learners while considering the manner of dissemination and their age.

During the 25th anniversary of the International Conference on Population and Development (ICPD) which was held in Nairobi in 1994, the summit tackled the sexual and reproductive rights of women, among others. It identified abortion as vital towards the attainment of those rights. The RCC, alongside other players such as diplomats, scholars and youth leaders, raised their concerns while opposing the resolutions of the Nairobi Summit saying they ran contrary to African culture and their religious beliefs. The RCC has released some pastoral letters to guide on the challenges facing the Church family. For instance, the KCCB issued *Lineamenta* (Pastoral guidelines for a process of discussion in action). The pastoral letter identifies challenges and provides pastoral solutions to families and marriages in Kenya today. The letter singles out threats facing families and responding to them in light of the Gospel. It contains varied issues guiding the catholic faithful on how they should respond and what the Church has always stood for. For instance, on Q 40 regarding care for gay persons, the letter advises RCC faithful to “never judge or condemn them, but help the person to be aware and get out of the behaviour by referring them to trained people to deal with their issues” (L, Q 40). The pastoral letter is intended to reach all Catholic faithful.

The RCC also makes press statements on some occasions to clarify her stand, especially when controversies rock a subject at hand. For instance, the GoK carried out a mass tetanus vaccination programme in 2014. Surprisingly, the RCC had their reservations. RCC in Kenya responded by issuing a “Statement by the KCCB on Mass Tetanus Vaccination Campaign carried out in Kenya in March and October 2014”. In their press statement, the KCCB made

their stand clear, that the vaccines used for mass tetanus vaccination campaigns in March and October of 2014 contained some vials laced with beta HCG. These findings were informed by the independent sampling by the Catholic Church and testing in different laboratories in Kenya (KCCB, 2015). According to KCCB (2014);

When injected as a vaccine to a non-pregnant woman, this Beta Human Chorionic Gonadotropin (HCG) sub-unit combined with tetanus toxoid develops antibodies against tetanus and HCG so that if a woman's egg becomes fertilized, her own natural HCG will be destroyed rendering her permanently infertile. In this situation, tetanus vaccination has been used as a birth control method. (Catholic Health Commission-KCCB, 2014)

The outcome of research done by the RCC indicated a hidden agenda by the GoK to introduce unconsented birth control on women. Going forward, the Catholic Church insisted that no further mass tetanus vaccination should be undertaken in Kenya before the vaccines had been appropriately tested and proven to be safe. The Catholic Church commands a following of 23% in Kenya hence it could convince a significant number of Kenyans to boycott the vaccination program. The vaccination programme against polio in 2015 stood at 93%. According to the WHO standards, this is regarded as successful when less than 10% of the targeted population is missed (Okeibunor, 2014). These figures suggest that among those who turned up for vaccination were RCC faithful but chose to side with the government's vaccination program.

There exist perennial and competing interests among the stakeholders involved in the promotion of a service. Biotechnology innovations such as genetically modified organisms (GMOs) are operated by profit-driven companies. This orientation receives preferential treatment over the safety of the services they offer because of their economic value. A lot of information about GMOs may contain bias since the technology producer companies which want to sell their products are the main ones interested in generating this data (Newmann & Albuquerque, 2018). In Turkana County, the government and some NGOs have been aggressive in promoting AFP only as a form of FP due to the neglect of AFP. One clergy made a revelation that;

... the stakeholders ought to be transparent and honest when it comes to handling FP ...some of them are after money from donors in support of AFP hence they care less about the safety and reliability of drugs... (Key informant 002).

Although the suspicions held by the Church may not be unfounded, it is upon the stakeholders of FP services to come forth and lay bare all the facts. According to Alkema *et al.*, (2013) as reported in Oller *et al.*, (2017), WHO, which is one of the organs of the United Nations, has been pursuing a long-term goal of reducing worldwide population growth primarily through "family planning" and contraception. The point of contention between the opposing sides, WHO and Ministry of Health on one side and RCC on the other, is birth control through contraception. The position of the RCC is informed by the divine plan of God, the creator, contained in Church traditions and has gone a step ahead to justify their claims using

their researchers; Kenya Catholic Doctors Association (KCDA), to prove how laced the vaccines were. On the other hand, the government and partnering organizations are keen to attain their target goals backed by scientific research.

The avenues used by the Catholic Church to get their information out to the public are limited as compared to those used by the scientists who mostly side with the government. This is unlike the scientists and government which have strong machinery enough to mobilize resources within the shortest time. Considering the huge disparities in resource acquisition and dissemination capacity, the government stands to win a significant majority against the Catholic Church.

1.9 Conclusion

Science and Religion are two domains of knowledge that have both incorporated distinct communication programs in their work. The domain of science is research-oriented and thus it is characterized by experimentation of new developments such as biotechnology. As an ever-advancing field, science has incorporated new techniques in their work such as science communication to reduce the gap between scientists and the lay public. It is an attempt to make scientists climb down from their ivory towers and engage the public. Scientists have had backing from the government in utilizing their dissemination machinery such as the mass media in addition to their publications and seminars, to reach a vast majority.

Furthermore, scientists have incorporated BCC programs to boost the quality of their programs. RCC on the other hand has its reservoirs of knowledge derived from the Church's tradition which sometimes are at loggerheads with the findings of science. The Roman Catholic Church has publications such as *Humanae Vitae* to guide birth control and the clergy uses the pulpit to reach out to their faithful. It is worth noting that, new technologies by science have brought forth unforeseen developments which have resulted in controversies that only serve to promote dichotomy between the two domains.

1.10. Recommendations

This article suggests that scientists have limited avenues of passing scientific information, mostly seminars and workshops, which have less audience. There is a need for scientists to improve on the means they use to deliver new scientific knowledge to widen their audience coverage. The article, therefore, recommends that the adoption of science communication be undertaken by all scientists in learning and training institutions. This will equip scientist with the skill of communicating their findings to the public without over-reliance on media, and those who are already researching to undergo in-service training. This will eventually lead to enhanced cooperation between scientific researchers and the non-expert communities. Also, science communication would address suspicions and mistrust associated with them by the Roman Catholic Church.

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