

BEHAVIOUR CHANGE AND COMMUNICATION

- a descriptive literature review of behavior change and communication in
Sub-Saharan countries

Susanna Kauppi

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ABSTRACT

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Activities for promoting health among any population are a formidable task. Especially in the developing countries societies might face challenges to respond to the requirements of the better health. Population growth, low economy, poor infrastructure and health system and sometimes unstable political atmosphere are affecting individuals' and communities' health. However, the great majority of the diseases are preventable and human behavior plays a central role in the prevention of disease and in the maintenance of health even though change in behavior takes often considerable time and results might be seen after years. By understanding behavior and barriers of behavior change as well as used communication channels and methods it is possible to plan and implement activities which have better health outcomes.

This study is a descriptive literature review. The purpose of this literature review is to describe factors which associate behavior and behavior change in the communities and to describe communication and communication methods which have been used in behavior change communication programs in developing countries of Sub-Saharan Africa. The objective of the study is to provide information about health behavior communication in community and used methods which can be utilized in behavior change campaign in developing countries.

The study followed the process of descriptive literature review. After the identification of the research question, data were collected from the scientific databases, Academic Search Premier and ProQuest, and manually from the other sources between February and August 2015. 39 researches were accepted to this review, most of them were published in 2009 or after and conducted by the quantitative method. Data were analyzed by the descriptive synthesis. The synthesis produced seven main themes which contained factors related behavior and behavior change and communication.

Communal and personal issues, culture, education and knowledge, economy and access to goods are related to behavior and behavior change as well as way of communication. The above mentioned issues, both individual and community are interwoven to each other and therefore behavior change need to be seen in wider context. Community's influence on behavior is stronger in comparison with the individual's own capability to behavior change and therefore the involvement of the community from the beginning is a key issue for the success of behavior change campaigns. Various media channels can be used to deliver the message of behavior change and combination of many communication methods such as mass media and personal communication predicts better outcome.

Behavior change is not an exact science and each person and community behaves as they do due to different reasons. Even though there are a lot of researches about behavior change, further research is needed. More information is needed about the interventions of behavior change and their outcomes. Due to technological development all over the world, more information is needed how new technology with application programs can be utilized in behavior change campaigns.

Keywords: behavior change, individual, community, communication, Sub-Sahara

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1 INTRODUCTION

According to WHO (2009) inequalities in health are rooted in inequities in society. However, health is a fundamental human right and a social investment, which is affected by political, economic, social, cultural, environmental, behavioral and biological factors. Governments' duty is to create healthy public policy and health promotion which are covering all their citizens. Policies and health promotion need to be adapted to the local needs and possibilities taken into account differing social, cultural and economic systems. In the developing countries, good health and wellbeing are not the norms for most of the people. Lack of resources, weak public health infrastructure and unresponsive governance has all great impact on welfare of poor people. Inadequacy of health facilities means that poor people suffer from diseases without being able to communicate their needs. (Macfarlane, Racelis & Muli-Musimee 2000.) Moreover, preventive health and remedial care could be under-invested or over-invested by the households if people do not have information about illness prevention, neither the effectiveness or cost-effectiveness of preventative behavior (Dupas 2011).

The purpose of health promotion is to influence the health behavior of individuals and communities on the positive way. Health promotion improves the health status of individuals, communities and the nation and improves the quality of life for all people. (Green & Tones 2011.) Most of the health problems are preventable and the solution lies in behavior change (Newson et al. 2013).

Previous approaches to behavior change focused on individual. However, individual's behavior is linked to social determinants, environment and norms in society. These factors have been seen to have stronger effect on behavior change than the individual's own personal capacity and hence health promotion, education and behavior change should focus on the social and environmental determinants of health rather than individual's behavior. (Ragnarsson et al. 2011; Green & Tones 2011.)

Behavior change theories help program to understand why people behave as they do and how the change is possible to achieve. Theories help to evaluate the behavior change process. However, theories have not been used as required because application of theory to practice might be found difficult due to lack of clear guidelines. Lack of information

about theories as well as lack of information about technics which should be used let program planners and leaders to avoid behavior change theories (Corcoran 2013; Webb, Sniehotta & Michie 2013.) Moreover, many theories have focus on individual's behavior forgetting environment and social relations and their effects on behavior (Corcoran 2013).

Experience has showed that people are able to solve their own health related issues and other concerns in partnership with governments and non-governmental organizations (Macfarlane et al. 2000). Community participation is essential on each stage of health promotion actions (Atkinson, Vallely, Fitzgerald, Whittaker & Tanner 2011; Babalola et al. 2006), because it also predicts better success for the program (Riehman et al. 2013). In summary, health promotion is done with community members, by community members and for community members (Ritchie 2007, refer to source Green & Tones, 2010).

Behavior change is influenced by many factors. Readiness for behavior change is highly influenced by the attitude and personal values of the individual. Moreover, behavior is influenced by the prevailing culture and environment (Green & Tones 2010) as well as people they liked and who have authority (Newson et al. 2012). Households might learn from their neighbors and peers and learning from the others happens faster than learning by oneself. Education and access to information as well as economic balance of the household often promote behavior change. (Dupas 2011.) Poor access to service and goods as well as poor experience of the previous campaigns impairs behavior change (Corcoran 2013).

Health and development programs use behavior change communication to improve people's health and well-being. According to Dupas (2011) information can make a difference, but not all kind of information. The source of information has to be credible, traceable (Tindana et al. 2011) and culturally acceptable (Atkinson et al. 2011). A successful program has a clear goal and focus narrowly on specific behavior (Kirby, Laris & Lori 2007). Target group for the information and information campaigns has to be selected well and sometimes it is necessary to cover a larger population if the campaign has direct or indirect effects on people around (Tindana et al. 2011).

Effective communication uses various channels (Ricotta et al. 2015; Atkinson et al. 2011; Briscoe & Aboud 2012; Kirby et al. 2007; Babalola et al. 2006) such as mass media and

interpersonal communication (Sood, Shefner-Rogers & Skinner 2014). Message has to be repeated frequently (Atkinson et al. 2007). People need to have enough time to adapt to the new information and message has to be presented in a simple manner (Newson et al. 2013). Especially individuals with low education might not be able to process complex information, but on the other hand more educated people might have a skeptic attitude towards simple information (Dupas 2011).

Behavior change communication and behavior change in the communities have produced plenty of researches in the developed and developing countries. Characteristic of the subject is much culture bonded and therefore factors which influence behavior cannot be generalized worldwide even though similarities might exist between cultures. Therefore, more research is needed to investigate which kind of factors are influencing behavior in certain area. Moreover, more information is needed about used communication methods, because of technological development.

The purpose of this literature review is to describe factors which associate behavior and behavior change in the communities and to describe communication and communication methods which have been used in behavior change communication programs in developing countries of Sub-Saharan Africa. The objective of the study is to provide information about health behavior communication in community and used methods which can be utilized in behavior change campaign in developing countries.

2 BEHAVIOR CHANGE

Behavior change has become a central objective of public health and health promotion interventions, as the influence of prevention within the health services has increased. According to Newson et al. (2013) “*behavior change is often positioned as a required individual adaptation for avoiding or reducing the risk of ill-health.*” However health transition is influenced by upstream determinants, thus behavior change for better health is needed at all levels: individual, family, community, country and the world (Newson et al. 2013).

At individual level, beliefs, behaviors and biology affect the balance between health and disease. Social and economic priorities, culture, access to health-promoting environments as well as health services are key determinants of health at the level of families and communities. National and global level has a downstream impact on the health of families and individuals when the speed of development and the distribution of developmental benefits and supplies across social groups act as drivers of health transition. (Newson et al. 2013.)

Culture can have strong impact on the behavior of the individual and therefore health programs should make attempts to develop culturally appropriate strategies. Culture reflects in a group’s meaning of life, practices and norms. Language and the way of communication are part of the culture as well as ethnicity. (Corcoran 2013; Huff & Kline 1999.) Culture shapes how personal understanding of health and illness are constructed (Airhihenbuwa, Ford & Iwelunmor 2014). Cultural differences can present major barriers to effective interventions and therefore awareness and sensitivity to cultural diversity has to be taken into account in planning, designing and implementation of health promotion program. Especially western style communication with a quick snapshot may be seen cold and too direct in other cultures. (Huff & Kline 1999.)

Poverty and poor education influence behavior change in developing countries. Poverty limits access to interventions and poor education is a barrier to information. Poverty and poor infrastructure in the society influences the adoption of behavior change if the access to interventions is not possible due poor roads or other constrains such as lack of electricity. (Quick 2003.)

The threat and fear of health risk can motivate people to seek information. However, fear can also cause people to deny that they are at risk. Evidence, that the recommended response will avert the threat, and people's confidence that they can avert the threat, has an impact on behavior change. (CommGAP n.d.) People can be also more open to campaigns if they receive feedback from the campaign and its' tangible benefits (Tindana et al. 2011).

Campaigns, which have excessive disruption for daily life (Tindana et al. 2011) and cultural barriers can prevent behavior change (CommGAP n.d.) However, by convincing target population of the positive consequence and benefits of health behavior change, barriers could be possible to lower or remove (CommGAP n.d.). It has also been suggested that messages of behavior change should be targeted to opinion leaders or gatekeepers instead of target groups, because they interpret, disseminate and block messages (Corcoran 2013). However, education level of the individual and community may influence prevailing norms so that higher education is bringing more autonomy and hence message can be targeted directly to the audience (Stephenson, Baschieri, Clements, Hennik & Nyovani 2007). Moreover, due to adequate use of resources, attitude and intention for behavior change have to be evaluated before attempting behavior change (CommGAP n.d.).

Behavior has been seen to be habitual, normative and preventive which is influenced by the environment (Adoub & Singla 2012). The previous approaches of behavior change focused more to the individuals who have autonomy to make their own decision and act on their own choices ignoring their social context (Ragnarsson et al. 2011). However, social determinants lead to an unhealthy personal behavior (Newson et al. 2013). Environmental prompts are affecting behavior, because individual is influenced by the people he liked and those who have authority (Newson et al. 2013). Therefore, when the individual is behaving in line with the expectation from the community there is a positive or negative impact on behavior change (CommGAP n.d; Newson et al. 2012). Before any behavior change campaign, and due to strong effect of the community, it is necessary is to clarify the meaning of community, its' needs, strengths and barriers in that particular context as well as readiness for change (Green & Tones 2008).

Community involvement in the behavior change campaigns is essential (Sood et al. 2014). The chiefs are the most powerful representatives of the community interest and their

opinion affects the whole community (Corcoran 2013; Tindana et al. 2011). According to Tindana et al. (2011), community mapping that describes the hierarchies of authority and decision-making pathways help to identify the leaders of the community. However, opinion leader can be anyone of standing or influence in a community such as mothers who often act as a gatekeeper to health information for other family members (Corcoran 2013). Social gathering called by chiefs is a usable forum to establish relationships and exchange information (Tindana et al. 2011). Community mobilization is also essential for behavior change. Community members will be trained in the communities to distribute the message and guide people for behavior change (Quick 2003).

Interventions of behavior change campaigns have been often poorly reported, because of that replication is also difficult (Webb et al. 2013). Many studies of behavior change techniques do not investigate real- world interventions campaigns. Artificial set up as laboratory or field experiments produces high-quality data on isolated environment leading to unfamiliar situational context where social effects are absent. Moreover, studies which only compare two behavior change technique are with limited value, because doing something has greater value than doing nothing. For designing better behavior change campaigns it is essential to gather the data during the campaign. Analysis should contain effects which can be expected of different behavior change techniques including psychological constructs and not only behavioral outcomes. (Tobias, Huber & Tamas 2013.) According to Newson et al. (2012) upfront and long term resources are needed to achieve sustainable behavior change, to make behavior a habit. It is also necessary to have adequate interventions that draw upon a systematic behavioral analysis of particular problems.

It is not reasonable to expect that more than a half of the population is changing their behavior because of the interventions in a short or long term (Aboud & Singla 2012; Quick 2003). It might be difficult to convince the certain group of people to change their behavior if they have managed well and healthy with their old habits even though old habit might be unhealthy for them, their family of environment (Aboud & Singla 2012). Therefore, behavior change needs to satisfy individual's need. Changes that are not pleasurable compared previous options should not be more than one at a time (Newson et al. 2013).

2.1 Theories of behavior change

Wide ranges of theoretical models are available for behavior change. In any campaign where the aim is change in behavior it is necessary to select a theoretical model which is providing a framework that can guide the practitioners (Sood et al. 2014; Corcoran 2011). Theories help to identify critical cognitive, emotional and motivational states of behavior change (Webb et al. 2013). Theories help practitioners understand behavior, information development and implementation of campaigns. (Corcoran 2011.) In addition to that, theoretical models help to frame evaluation process (Corcoran 2013). However, behavior change campaigns might have been evaluated just in a very simple way: either campaign met the objectives or not set by the campaign planner. Simple evaluation leads to the situation that the effects of the best communication models, methods, development, cost and data sources have not been evaluated as required even though some interventions can or should be evaluated comprehensively. (Thompson, Dorsey, Miller & Parrot 2008.)

The application of the theoretical model is desirable, but there are several reasons why theories have not been used. Theories have been overlooked and practitioners might find it difficult to apply theory to practice. Lack of clear guidelines of which theory to use in campaigns, lack of information about how to turn theory into an attractive message and practitioners ignorance of health behavior changes leads to avoiding theories. (Corcoran 2011.) Behavior change theories which emphasize individual's behavior might exclude other aspects affecting their behavior such as family, friends, social norms and culture (Corcoran 2013). Many theories emphasize cognitive factors, but they do not specify methods or techniques which are suitable for the theory based interventions (Webb et al. 2013). Moreover, behavior change theories might not be useful in the health campaigns and programs where the target is in large-scale high-risk populations (Corcoran 2013).

Many theories of behavior change are focusing on cognitive characteristics of the individual lacking social, environmental and cultural factors (Burke, Joseph, Pasicks & Barker 2009; Corcoran 2011) such as the transtheoretical model, the theory of planned behavior and the health belief model. The social cognitive theory, the social ecological model and diffusion of innovation theory are taking into account also social and environmental factors and their impact on the individual's behavior.

2.1.1 Social cognitive theory

Social cognitive theory, called also social learning theory, goes beyond individual's factors in health behavior change (Huff & Kline 1999). Social cognitive theory seeks to explain human behavior and personal factors and the influence of the environment where the behavior is performed. Personal factors and environmental events operate in interacting determinants that influence each other bidirectionally. (Bandura 2008.)

Theory highlights the importance of personal goal (short-long term) and feedback in relation to behavior change as well as social support in maintaining the change. (Nutbeam, Harris & Wise 2014.) According to Bandura (2008) people are self-organizing, proactive, self-reflecting and self-regulating. However, human development and change are embedded in the social system. In transaction, people can be seen as producers and products of the social system and environment. Transaction is a dynamic process which contributes person's cognitions or expectancies. Expectancies include beliefs about how events are connected, beliefs about the consequences of action and beliefs about competencies to perform the needed behavior. (Huff & Kline 1999.) Successful performances and outcomes might increase person's self-efficacy and encourage them to perform the behavior again (Nutbeam et al. 2014). Moreover, expectations of rewards, vicarious or direct, for the preferred behavior motivate person to continue that behavior. External rewards can be promotions or professional recognition, internal rewards can be seen in improvement in self-satisfaction. (Huff & Kline 1999.)

According to the social cognitive theory, external influence affects behavior through the cognitive process, not directly. Observation is also partly based on cognitive factors. According to that an individual has the capability to observational learning through observing other people's actions and its consequences on them. (Bandura 2008; Huff & Kline 1999.)

2.1.2 Social ecological model

The social ecological model is based on the assumption that health is influenced by a multidimensional environment and it involves understanding the health problem within the society (Huff & Kline 1999). In this context, ecology refers to the relationship between an organism and its' environment (Burke et al. 2009).

Interactions in human environment are on separate levels: individual, family, organizational and population with reciprocal feedback across different levels. Individual's behavior is shaped by the social environment. The benefit of the model is its ability to be addressed on many levels of different environments. In the model it is possible to persuade individual behaviors at inter- and intrapersonal level, organizational change at the institutional level and policy change in the system. (Burke et al. 2009.) However, the model does not clarify where culture, social class, gender and economics/employment are supposed to fit (Corcoran 2013). Also, many levels in the model bring challenges to construct intervention for each level. (Burke et al. 2009.)

2.1.3 Diffusion of innovation theory

Diffusion is *“the process by which an innovation is communicated through certain channels over time among members of a social system”* (Rogers 2003, in the book of Nutbeam et al. 2014) and an innovation is *“an idea, practice or object perceived as new by an individual”* (Nutbeam et al. 2014).

The success and speed of new ideas which are adopted in the community are influenced by five factors: characteristics of the potential adopters, rate of adoption, nature of the social system, characteristics of the innovation and characteristics of the change agent who facilitates the adoption of change. The change agent can be a person working with the community or coming outside. (Nutbeam et al. 2014.)

Some individuals and groups pick up new ideas quicker than others. The theory categorizes population into five groups depending on the attitude towards adoption of new ideas and innovations. The innovators are quick to adopt new ideas, but only a small amount (2–3 %) of the population is innovators. The early adopters are those (10–15 %) who are the most amenable to change and have some resources to adopt the innovation. The early majority is those (30–35 %) who is amenable to change and who are persuaded of the benefits. The late majority, (30–35 %) is sceptics and adopt new ideas only when benefits have been clearly proven. The laggards are the rest of population and they are the most conservative and resistant to new ideas. (Nutbeam et al. 2014; Adoub & Singla 2012.)

The theory contains various aspects and it emphasizes the time which is required for various groups to adopt new ideas. However, it is not taking into account resources or other structural barriers, and in addition to that those, who are least able to adopt the change might be blamed even when the lack of change has not been their own choice. (Nutbeam et al. 2014.)

2.2 Behavior change communication

Behavior change communication is based on proven theories and models of behavior change. Preparing and responding successfully to health demands require evidence-based behavior change communication strategies for promoting positive health outcomes. (Nutbeam et al. 2014; Corcoran 2013.)

Communication refers to the exchange of information or feelings between individuals or groups (The Communication Network, 2008 refer to source Corcoran 2011). Nowadays the communication model consists of a sender, a message, a receiver, understanding and feedback. The expert-driven top-down model of communication is changing to the non-hierarchical, horizontal form of communication in the areas where people have easy access to health information. (Corcoran 2013.) Communication channels could be intrapersonal/ interpersonal, organizational and communal. Intrapersonal/ interpersonal communication refers to communication between individuals such as father to daughter, peer to peer. Organizational communication refers to communication networks within the organizations such schools and workplaces. Community communication refers to wider communication structures that reach the whole communities including mass media. (Corcoran 2011.)

There are various communication approaches to changing behavior. According to Corcoran (2013), behavior change communication utilizes theoretical models and it uses mixed communication methods. Strategic communication is evidence-based where information has been tailored to the local context. Advocacy is an operations model which prepares the population to accept a behavior, an idea or a program at a social or political level. Social mobilization brings together different sectors, including the community itself, to promote a climate where change can occur.

According to Noar, Harrington, van Stee and Aldrich (2011) communication can be divided into the generic communication, personalized generic communication, targeted communication and tailored communication. Generic communication means communication, which is not individualized or based on any kind of individual assessment e.g. general brochures and leaflets about smoking, alcohol use or obesity. Personalized generic communication is similar to generic communication, but the message is personalized by using a name etc. Information, which is developed with a certain group of people in mind and is used a lot in health communication, is referring to targeted communication. In the tailored communication information is customized to an individual, not to the group.

Effective and successful health communication takes into account several factors. Culture, ethnicity and social status and power as well as age, gender and social class are linked to communication. These factors with attitude, beliefs and values are effecting how, when and where communication has been received. The age of the target population influences information preferences. Younger people have been reported favoring TV and Internet as a source of health information. Gender also relates preference source of health information. However, the preferred source of information varies lot depending on culture and country. Social determinants, especially education level, effect on communication and it might cause inequalities among the target population. People with lower education may have difficulties in learning and understanding new facts or complex messages as well as difficulties using different kind of technology. (Corcoran 2013; Newson et al. 2013.) Attitude has been said to be linked with the knowledge so that people with higher knowledge are more open to behavior change. However, people with relevant knowledge might still behave in non-preferable way and it has been estimated that other factors such as cultural habits and traditions go beyond knowledge and decision making. (Corcoran 2013.)

The aim of mass media is to raise public awareness on issues (Green & Tones 2008). By mass media information can spread quickly and widely (Bandura 2008). Audio-visual, printed and electronical media have different ways to distribute behavior change message such as documentaries, soap-operas, education entertainment, announcements, cartoons, stories, reports, and various social media channels (Sood et al. 2014; Corcoran 2013). Use of mass media is relatively low levels of cost per population (Corcoran 2013). If the aim

of the message is in behavior change and not that it is just remembered, the message has to be repeated for a long period (Newson et al. 2013; Green & Tones 2008). Message has to be easy, understandable, desirable and rewarding (Newson et al. 2013).

Developments of new communication methods have been fast, different techniques have also been spread in low income countries. Mobile health, which refers to the use of mobile communication technology, mainly mobile phones, has demonstrated positive outcomes because of the easy access and low cost. However, the coverage of networks and mobile phones are still pending especially in rural areas. Personnel's unclear roles, responsibilities and skills on digital health technology, illiteracy of target population as well as misunderstanding of the aim of the text messages make utilization of new technology challenging. (Aranda-Jan, Mohutsiwa-Dibe & Loukanova 2014.)

Mass media has used to promote policy change, to engage in agenda setting and coalition building, to increase knowledge, to raise health interest and to increase acceptability and to reduce stigma (Corcoran 2013). A person picks up new information from the media and passes it forward to the person who is interested in the information (Bandura 2008). However, mass media cannot change structural, political or economic factors, it cannot change strong attitudes or beliefs or convey complex information or teach skills either. Mass media cannot change behavior without facilitating factors (Corcoran 2013) and it is not effective alone. Therefore, it needs support programs and interventions go alongside (Tones & Green 2008).

2.3 Community

It is not possible to implement behavior change communication in the community if the meaning of community is not identified by the local participants, external researchers and other stakeholders (Green & Tones 2011; Shagi et al. 2008). Homogenous communities with similar ethnic, political, religious and class backgrounds have been suggested being more cohesive, united and willing to cooperative actions (Atkinson et al. 2011). By doing the identification with the local participants the community can be conceptualized in a number of ways (Shagi et al. 2008).

Location and communication, social bonds and connection are central to the concept of community (Green & Tones 2011), but community is also seen as an informally organized set of loose associations among residents (Thompson et al. 2008). The community is seen as a cluster of personal relationships, groups, networks, traditions and patterns of behavior that exist among those who share physical neighborhoods, socio-economic conditions and understanding. However community and neighborhood are not the same and these should not conflate with each other. (Green & Tones 2011.)

Community can be also defined as a group of people living in the same area who share the same problems and resources. However, geographical perspective does not take into account social cohesiveness such as cultural heterogeneity, ethnicity or imbalances in resources. (Atkinson et al. 2011.) Riehm et al. (2013) defined the community as the collection of households units brought together by common interest. According to Green & Tones (2011) the community enables access to all things which allow people to live a full life and hence individuals may align themselves with a number of different communities depending on how they feel.

3 PURPOSE, OBJECTIVE AND RESEARCH QUESTIONS OF THE STUDY

The purpose of this literature review is to describe factors which associate behavior and behavior change in the communities and to describe communication and communication methods which have been used in behavior change communication programs in developing countries of Sub-Saharan Africa. The objective of the study is to provide information about health behavior communication in community and used methods which can be utilized in behavior change campaign in developing countries.

Research questions are as follows:

1. What kinds of factors are associated to behavior and behavior change in the community and individual level?
2. What kinds of communication and communication methods are used in behavior change campaigns?

4 METHODOLOGY AND RESEARCH PROCESS

This study is a descriptive literature review. The definition of a literature review is multifold. A literature review may refer to extensive research, but already the joint process of two researches can be called a literature review (Johansson, 2007, 3-9). According to Salminen (2011) literature review is research from research, where earlier research findings are the basis for the new results.

Descriptive literature review can be divided into integrated and narrative form. A narrative descriptive literature review could be done in three different ways. The aim of the editorial review is to collect small number of literature as a base for the article. Commenting review creates discussion and it might bring up the writer's own opinion. A general overview, like this review, is the most common. The general overview can be characterized as a descriptive literature review without strict limitation or rules, which also allows various methodological techniques and content wise various type of literature and its aim is to condense previous researches. (Salminen 2011.)

By literature review can be understood what kind of research on the subject exists. By gathering the researches, it is possible to get a view of the subject and to know how much and which kind of information is available. (Johansson, 2007, 3–9.) Literature review also draws a picture about used methods (Johansson, 2007, 3–9). It produces descriptive and qualitative results, like in this review, even though quantitative researches have included in the review (Kangasniemi et al. 2013). Descriptive literature review is content driven and its aim is to understand the phenomena and to create comparison between the research material rather than be a presentation of the used researches (Kangasniemi et al. 2013). However, in this review comparison of the research material was challenging because of the subject which was much effected by different cultures and societies.

Success of the literature review is based on certain matters. The literature review needs to answer the research questions, quality of the research material has to be evaluated beforehand and referencing of studies has to be carried out in an objective and truthful way. (Kangasniemi et al. 2013; Salminen 2011). Researches for this descriptive literature were read and evaluated by the researcher before acceptance keeping in mind the research questions. Special attention was paid to how the research was written and was the report

of the research presented in a logical order and followed the research process steps including limitations and ethical consideration. Attention was paid to the sample sizes, methodological issues and to selected analysis method. (Coughlan, Cronin & Ryan 2014.) According to Coughlan et al. (2014) all the studies have limitations and no research is perfect and even though in this review some research reports had not been put across properly the goal, purpose or limitation of the research, these have been accepted to the review if the criteria of the research report are otherwise fulfilled.

Stages of descriptive literature review have been followed during this review as Kangasniemi et al. (2013) has mentioned. According to them, the conduct of literature review can be divided into four stages. The first stage includes forming the research question. Well-defined research question guides the selection of relevant literature. It also expresses the focus of the research. (Coughlan et al. 2014.) The second stage includes data selection (Kangasniemi et al. 2013). The main inclusion criteria of the data should be the content of the researches and not beforehand fixed stipulation of information retrieval, because collected data reflect the research question throughout the research process. It might happen that the research questions have to be modified for better response to the data as in this review. The third stage includes the construction of description. The thread should be the synthesis of the data and comparison between the data without changing the content. The last stage of the descriptive literature review includes the observation of the produced result, used methods, ethical considerations and evaluation of reliability. (Kangasniemi et al. 2013.)

4.1. Data collection

Data collection was carried out in PubMed, Academic Search Premier where EBSCOHost acted as the intermediary, ProQuest Hospital and manually from various databases and Google. Manual search contained researches which were seen on the other researches text and on the reference lists and which were considered appropriate for this study. Research questions directed the search. Keywords and word combinations for the search were based on the literature of behavior change and what was already known about it. (Appedix 1).

Database	Search
Academic Search Premier	change in behavior AND community AND communication behavior change communication AND campaign behavior change AND communication AND developing country sport AND behavior change AND developing country
ProQuest	behavior change communication community campaign

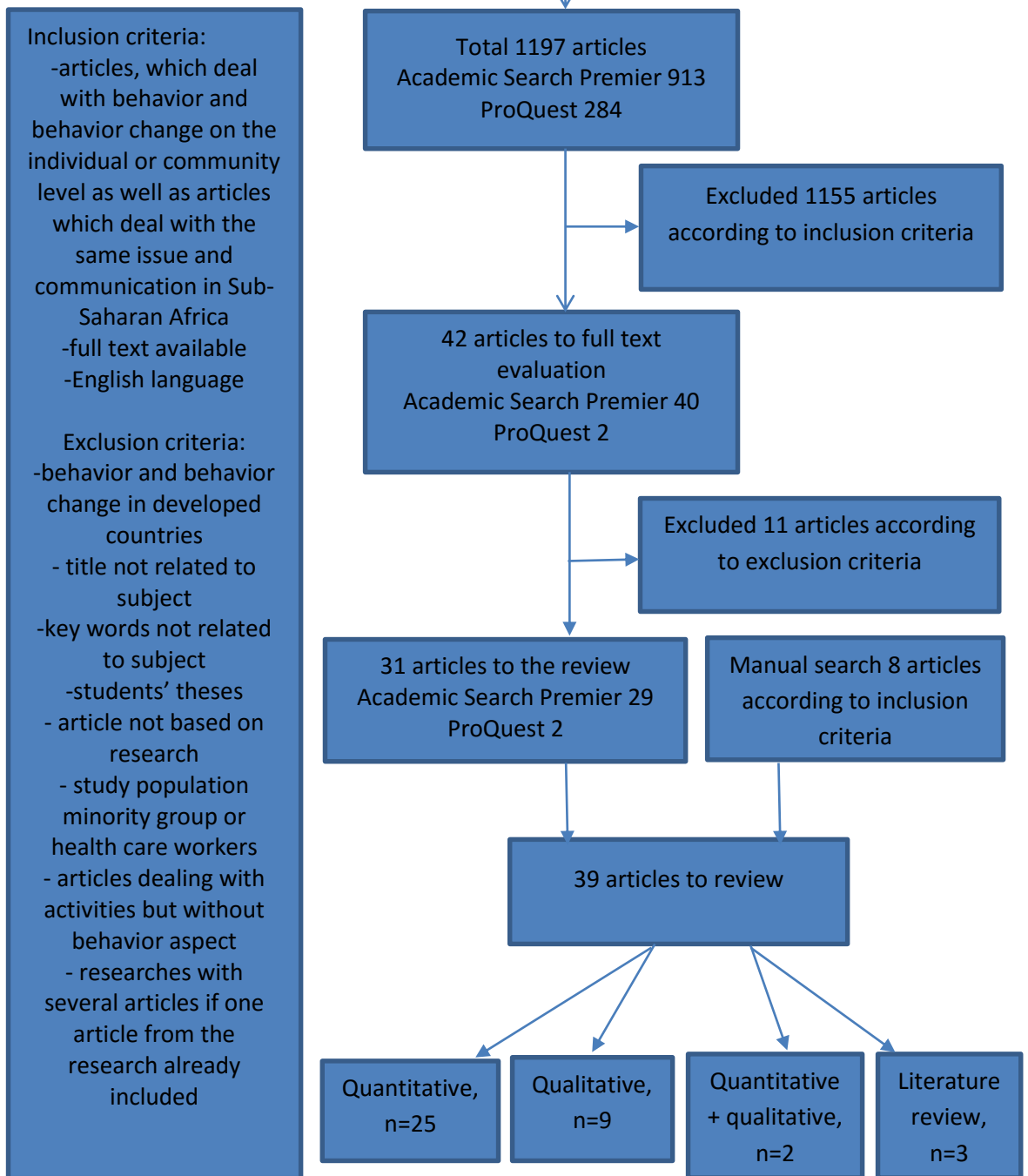


FIGURE1, Selection process from database search

The first search was conducted in February 2015 using all the databases under health. The combination of the words used for the search was behavior change with or without community and communication. Searches gave thousands of hits without reasonable logic and after discussion with the information specialist of the library of the Diaconia University of Applied Science it was decided to carry on searches on the health related database at a time.

Search was continued by using CINAHL and Academic Search Premier database where EBSCOHost acted as an intermediary. In the beginning the search was conducted by the very simple way using word combinations without any limitation just to find out how much and which kind of articles exists in these databases. The word combination for the search was used “community behavior”, “behavior change communication” and “behavior change communication and community”. Search history was printed out. Search gave tens of thousands of articles. According to the title of the researches many of them concerned behavior change in developed countries and to limit the number of the document it was necessary to conduct new searches with limitation.

On the next stage researches about behavior change communication in the community were searched using advanced search (Figure 1). The same word combinations were used as on the first search but with or without AND in between the words. The publication date was limited to the years 2006–2015, because researches more than ten years old might contain information which might not be useful to transmit to the present day. However, search which included only year limitation was still not enough narrow and therefore new searches with geographical limitation and additional word “campaign” was conducted. In geographical limitation, all the countries outside of Sub-Saharan Africa were excluded from the search. By the new searches, number of the documents as well as the title of the documents began to look like what was meant to apply. Search history was printed out for further documentation.

All the documents of the search results were screened first by the title and by key words. If the title of the document gave any impression about behavior or behavior change, it was selected for further investigations as well as documents which included the following words among key words: behavior and/or change and/or community and/or communication and/or media. After that, the abstract of the research was read. If the abstract gave an impression that the document was suitable for the review, full text was

read. However, several documents were excluded after the overview of full text, because contents or type of the document were not exactly what was needed despite the titles and/or the abstract. Therefore new searches were conducted with modified limitation.

New searches conducted mostly in August 2015 with the same base words using word combination “behavior change” with or without AND “communication” AND “community.” The Boolean mode was complemented with or without words: “developing country” and “sport.” The date of publication remained the same than before containing years 2006–2015. Geographically search was limited to contain only those African countries which were on the country list of each search. However, South-Africa was excluded each time because researches from South-Africa might concern developed circumstances or developing circumstances and it was seen too time-consuming to evaluate these researches. Geographical limitation caused that most of the accepted studies came from Kenya and Tanzania (table 1). Also search with more limitation was tested, but it skipped away researches which were already seen suitable for the review’s purposes and thus it was returned to the former search terms. Similar screening was conducted as in the search before. Meaning that potential articles were selected first by the title and keywords and thereafter by the abstract and full text.

TABLE 1. Number of researches per country included into literature review

Country	Number of researches
Botswana	2
Cameroon	1
Ethiopia	2
Kenya	8
Malawi	1
Nigeria	4
Tanzania	8
Uganda	4
Zambia	1
Zimbabwe	1
Multiple countries (2–7)	4
Literature review	3

Searches with the different word combination brought out often the same researches. Moreover, the same researches were possible to find in various databases. All the accepted researches were found in Academic Search Premier even though CINAHL was included in the search. From PubMed and ProQuest only one search was conducted, because search gave the same potential researches which were already found and accepted from the Academic Search Premier. Additional to that, in PubMed the full texts of the articles were not available in the same extent compared with Academic Search Premier and therefore no more search from PubMed was conducted.

Manual search was conducted from Google and databases of well-known and reliable international organizations as well as scientific journals, which were not available electronically. Manual search was conducted by using the full title of the article or the name of the writer. Search contained researches which were not found in the other databases.

Even though all the searches were documented, updated search was conducted in October 2015 to check that the results of the searches were still valid. By using the same word combinations and with the same search criteria than before it was still possible to find all the selected researches.

Similar inclusion/ exclusion criteria were used within all databases. The first inclusion criterion was that the research needed to be written in English and the research needed to be published in the scientific journal. Researches which did not have full text available were excluded, even though according to abstract, research would otherwise fulfill inclusion criteria. General articles about behavior change, even though scientific, but without research were excluded as well as scientific articles which were conducted only by a student; on the other words, researches done by the master or bachelor degree students were rejected. Researches related to behavior change in developed countries were rejected, as well as researches related to developing countries outside of Africa. However, three literature reviews met the inclusion criteria even though one was concerned with developing countries both in Africa and outside of Africa, one concerned with developing and middle income countries in African and outside of Africa and one concerned with developing and developed countries worldwide including countries in Africa. Articles from the large scale researches with multiple research reports were rejected if one article from the research were already included to review. This was due to

avoid duplication. Moreover, research articles were the study population presented health care workers or minority groups such as sex workers or electrician were rejected.

After excluded/ included criteria 39 researches were accepted to this descriptive literature review (Appendix 2). Nine of them were qualitative, 25 quantitative and two had used both the quantitative and qualitative approaches. Three literature reviews met the inclusion criteria and all of them had been conducted by using both qualitative and quantitative researches.

4.2 Analysis of the research material

The objective of a non-quantitative review, such as a descriptive literature review, is to present the characteristics and results in a meaningful way. The aim of a descriptive literature review is to create comparison among researches, find the strengths and weaknesses of existing facts and to create wider conclusions from the data. The creation of the synthesis from the selected research material is the leading factor (Kangasniemi et al. 2013) and analysis of descriptive literature review should be done by descriptive synthesis (Salminen 2011).

Research questions guided the synthesis (Kangasniemi et al. 2013). All the researches which were accepted to this descriptive literature review were read through carefully (Siu & Comerasamy 2013) and factors which had any connection to individual's or community's behavior or behavior change were searched from the texts.

In synthesis, factors which are important in relation to investigated phenomena will be picked up from the material and connected which leads to better understanding about the phenomena (Siu & Comerasamy 2013). Researched phenomena can be viewed by themes, categories and in relation to categories. (Kangasniemi et al. 2013.) After all the articles were read through, factors which had any connections to behavior or behavior changes was picked up with the content and underlined with the marker to ease the further process. Knowing the context was necessary because behavior is much context bonded and the weight of the factor can change without knowing the original context. Thereafter factor in that particular context was examined as well as the factor's negative or positive

effect. Factors, which seemed to influence to behavior or behavior change were written up with the context to the separate file.

After that positive and negative categories were created and factors affecting to behavior or behavior change were moved under the positive and negative categories depending on the proviso of the factor. However, later on categorization to negative and positive factors was seen not appropriate, because most of the factors had both negative and positive aspects depending of the target population, country and culture and therefore this categorization produced an incoherent and confused report.

After categorization to positive and negative categories it was decided to investigate the phenomenon by themes. Example of theme formation is presented in table 2.

TABLE 2. Example of theme formation

Original phrase	Group	Theme
<i>“Community based organization were mentioned as the source of change” (Riehman et al. 2013)</i>	Communal issues	Community
<i>“The poster was constructed to be incongruent with the text and prevailing cultural practice” (Ntshebe et al.2006)</i>	Communicational issues	Communication and communication methods
<i>“Attitude, subjective norms and perceived behaviour control were significantly associated with HIV counselling and testing” (Mtenga et al. 2015)</i>	Individual’s personality	Personal issues
<i>“Girls generally received less schooling than boys and less intellectual stimulation to enable them to learn about sexual health” (Wight et al. 2012)</i>	School/education	Education and knowledge

Factors related to behavior or behavior change were picked up from the text with the context once again. Coding, as mentioned by Coughlan et al. (2014) can be done with

symbols or abbreviations. In this review coding was done by using different colors for different meanings so that issues linked to education were marked with an own color, issues linked to culture with the other colors etc. After that codes with the content were placed into the groups so that similarities stayed in same group. Groups were named in a general way just to get a view about content. When all the researches were processed and all the factors which had any connection to behavior or behavior change were inserted under the groups, groups were analyzed again by searching differences and similarities. (Coughlan et al. 2014.) Some factors were easy to insert under a certain groups but some were more challenging because the factor related to behavior or behavior change had a close connection to many group as such. For example, lack of education relates to knowledge but also to economy. In these cases the context and the root cause defined the grouping. Factors which did not have similar meaning were moved to other groups. When grouping was complete, the content of the group was investigated to find a name for the theme (Coughlan et al. 2014). Finally, factors associated to behavior and behavior change were inserted under seven themes (table 3). Six of them associated to behavior and behavior change. These themes were named as: community, personal issues, culture and tradition, education and knowledge, economical factors and accessibility of goods. The seventh theme associated to communication and communication methods.

TABLE 3. Number of the researches by themes

Theme	Number of research
Community	15
Personal issues	14
Culture and traditions	8
Education and knowledge	13
Economical factors	10
Accessibility of goods	10
Communication and communication methods	18

According to Siu and Comerasamy (2013) synthesis requires that found data has been interpreted on the new way. However, synthesis, as required was not possible to do

because researches were done in many countries and details and nuances were not possible to connect so that found data was interpreted totally on the new way.

5 RESULTS

Factors associated to behavior and behavior change are presented below by themes. The last theme contains results of communication and communication methods. Under the first sub-heading are presented those factors which relate to behavior and behavior change directly or indirectly. Under the second sub-heading are presented communication methods which have been used in behavior change campaigns.

5.1. Factors relate to behavior change

Several factors are associated to individual's and community's behavior and behavior change. Individual's behavior is strongly influenced by the community and community's behavior is influenced by the individual. Therefore it is not possible to separate these two elements from each other. (Huff & Kline 1999). Below are presented factors which associated to behavior and behavior change. These factors are: community, personal issues, culture and traditions, education and knowledge, economical factors and accessibility of goods.

5.1.1 Community

Organizations, which are working close to the community and are known by the community members have better possibility for success in their behavior change programs because people's participation associated normative change in their behavior (Riehman et al. 2013). Programs with community participation have reported to be more appropriate for community needs and community's self-identification of the problem. Moreover, sustainable participation (Atkinson et al. 2011; Kirby et al. 2007), commitment to the program (Huber & Mosler 2013) and transparency regarding program success increased behavior change (Atkinson et al. 2011; Kirby et al. 2007). In Kenya, people in the communities where the high proportions of individuals were aware of activities of

community-based organizations showed greater knowledge of HIV transmission and prevention and acted accordingly e.g. use of condoms increased. (Riehm et al. 2013).

The early engagement of community leaders and representatives from all ethnic, religious and social groups is important for motivation (Hardre, Garcia, Apamo, Mutheu & Ndege, 2012) and to ensure inclusive participation in the programs (Briscoe & Aboud 2012; Atkinson et al. 2011). Support from the authority gives a message to the participants that eligible behavior change is normative (Leerlooijer et al. 2013; Atkinson et al. 2011.) In Nigeria core community groups were established to support the traditional leaders. Ruling councils and large community meetings were organized to discuss the social and health complications of female genital cuttings. Involvement of community groups and the local individual members as well as the local radio personalities in the design and implementation of the program helped to foster participation in the program. Social support as well as perceived self-efficacy to resist the outside pressure to perform genital cutting were increased by the programme activities. (Babalola et al. 2006.)

In Uganda, attitudes towards teenage mothers were generally negative. Teenage mothers without a husband were seen unmoral and behaving against community rules. Due that teenage mothers' possibility affected in the community was poor. Moreover, some teenage mothers applied ineffective coping strategies such as early marriage to avoid the stigma. However, support from the powerful community leaders to the behavior change program caused changes in the general attitude even though it took time or still some of the community members were still not familiar with the program, but positive results of the program e.g. success at school, changed atmosphere more positive and supportive. (Leerlooijer et al. 2013.)

The similar socio-cultural background between community and volunteers has increased community's involvement and access to behavior change programs (Atkinson et al. 2011). In Tanzania the community change agents who knew the communities well and were selected by community leaders engaged communities with collective dialogue about malaria prevention, treatment and control (Ricotta et al. 2015). Safe social environment (Kirby et al. 2007), regular supports and supervisions of community volunteers and the health workers have been essential element to avoid the impairment of motivation. Moreover supervision provides a way to consolidate the skills, feedback and express concerns. (Atkinson et al. 2011.) However, according to Ochako et al. (2015) health

providers and other educational sources were rarely mentioned as a source of health information and the information was mainly received from the peers and other community members.

Behavior change campaigns can be integrated to sport activities (Maro & Roberts 2012; Delva 2010). The HIV prevention program integrated into football achieved positive sexual behavior change in Tanzania. Peer coaches, who received training both soccer play and HIV education, achieved positive results in intention to prevent HIV transmission among young people. Their attitude and norms towards exclusive sexual relationship and towards abstinence and condom use improved. (Maro & Roberts 2012.) However, according to Delva et al. (2010) there was no significant difference between members of a sport club and those who did not belong to a sport club on risky sexual behavior and the only difference was seen in increased intention to use condom among members of the sport club.

Pressure from the community and the assumptions that community expects certain behavior or neighbors opinion can prevent behavior change. In eastern Nigeria, beliefs that female genital cutting has some benefits was common among men and women and it was seen as cultural and socio-economic props. Therefore discontinuation of female genital cutting was not favored. (Babalola et al. 2006.) In Nigeria interest for insecticidal net repair or washing was neglected because of anxiety about neighbors seeing torn or dirty nets (Koenker et al. 2015). Opposite behavior was seen in Uganda where strong social norms surrounding net hygiene and appearance forced to keep a net in good condition. People with filthy and broken mosquito nets were seen lazy and careless and not taken good care of their families. On the other words the net's appearance was seen more important than protective feature against malaria. (Scandurra, Acosta, Koenker, Kibuuka & Harvey 2014.)

Religion and strong religious beliefs can prevent risky behavior. In Tanzania, people who grew up in a Muslim or Christian family were more afraid of punishment due to sexual activity and possible unwanted consequences (Wight, Plummer & Ross 2012). Unexpected teenage pregnancies occurred also less among Muslim families compared with Catholic (Leerloojier et al. 2013). However, religious rules and threat of punishment can also prevent safer behavior because risky behavior is hidden in the shades and not

discussed (Wight et al. 2012) as it has seen in the research of Mtenga, Exavery, Kakoko and Geubbels (2015) where voluntary testing for HIV was low among Muslim families.

Lack of information or misinformation can prevent behavior change (Atkinson et al. 2011). In Uganda evidence was found in the internet that sex between males exists in the country. However, in Uganda homosexual behavior is illegal and immoral and hence there are no HIV programs focused on homo and bisexual people. Therefore, all the HIV related information focused on heterosexual transmission leading to assumption among gay and bisexual that bisexual men were more in the risk for HIV. (Kajubi et al. 2008.)

Constrain in financial resources and community resistance to the program and lack of public health infrastructure were reasons for the failure of programs and change in behavior. Moreover, inadequate communication and the reporting system including unclear roles and responsibilities among people impaired the success of the behavior change program. (Atkinson et al. 2011.) In Ethiopia, volunteers did not receive enough tools for teaching. Moreover, volunteers did not receive enough training and support from the supervisors/ health workers. The gap between the community volunteers and the formal health system lead to unchanged situation in behavior. (Kim et al. 2015.)

Communities' motivation and participation for the campaign can be induced by incentives. Non-cash incentives have used mainly for volunteers including performance based rewards, positive publicity, free healthcare, tax breaks and improved social status not forgetting personal development. Non-cash incentives have seen less desirable than cash incentives, but cash incentives can improve the mismanagement of the program and recruitment of under-qualified people when relatives and friend might be favored. (Atkinson et al. 2011.)

5.1.2 Personal issues

Person's positive attitude is a significant factor predicting positive behavior change (Mtenga et al.2015; Koenker et al. 2015, Huber & Mosler 2013) as well as perceived behavior control meaning individual's ability to perform and control own behavior (Mtenga et al. 2015). The positive attitude was the strongest social cognitive predictor for voluntary counselling and testing for HIV among married couples. Reason for that might

be that married individuals' felt of being safe in their marriage. (Mtenga et al. 2015). In Tanzania people who had more positive thought towards bed nets as a protective matter for malaria were more likely to have the universal coverage of the nets in the house (Ricotta et al. 2015). The positive attitude about net care and repair has been the significant predictor towards self-reported actions in Nigeria (Koenker et al.2015).

Gender and age are affecting behavior and behavior change as it has seen in the study from Nigeria. According to Garley, Ivanovich, Eckert, Negroustoueva and Yazoume (2013) small children had higher odd to sleep under insecticide-treated nets compared with older individuals. This can be due to women who were more likely to adhere to health interventions and take less risks when it comes to health compared with men. Especially young adult men, age 15–25 were not keen to use insecticide-treated net.

Peer support has the important role in behavior change (Leerlooijer et al. 2013; Hardre 2012; Atkinson et al. 2011; Denison, McCauley, Dunnett-Dagg, Lungu & Sweat 2009). According to Hardre et al. (2012) motivation for safer sexual behavior can be improved if peer support exist. In the teenage mother groups, peer support helped teenage mothers coping capacity. They felt that someone was listening. Their self-confidence improved when they were able to share their feelings and experiences that they mattered to others. (Leerlooijer et al. 2013.) Moreover, the adult mentors assist in problem solving and as role model has motivated youths to avoid risky sexual behavior (Hardre et al. 2012).

Parents have the important role in the behavior change of children and adolescents. Support from the parents has been the essential motivator for safer sexual behavior (Hardre et al. 2012) and according to Leerlooijer et al. (2013) for future orientated behavior. Moreover, parental monitoring reduced the odds of adolescents' sexual activity. In other words, adolescents whose parents who knew where their children went during the night, knew their friends and knew how their children spent their free time were more likely to reduce sexual activity. (Biddlecom, Awusabo-Asare & Bankole 2009.)

Fear about existing disease and relapsing symptoms can trigger the behavior change (Ragnarsson et al. 2011). Experience of severe illness helped adopt the risk reduction strategies of HIV (Muchini et al 2011; Ragnarsson et al. 2011). Additional to that, health workers support and skilled counselling have the important role in strengthening of individual's self-efficacy and hence individual's capability for behaviour change. In

Kenya, in communities where AIDS deaths were publicly acknowledged behavior change among youth occurred and behavior change delayed sexual activity. (Tenkorang & Maticka-Tyndale 2014.)

Fear can also prevent behavior change. In Kenya, women consider the use of condoms something bad and dirty. Due to fear of stigmatization and rejection, men did not discuss with their partners about the safer sexual practices and use of condoms (Ragnarsson et al. 2011). In other words, fear prevented behavior change even though behavior created health risk. According to McClain Burke & Ambasa-Shisanya (2014) the fear of side-effects of contraceptives was the main reason for discontinuation. According to Leerlooijer et al. (2013) the fear of stigmatization from the peer students hampered teenage mothers' motivation and intentions to return to school and hence they abandoned the continuation.

5.1.3 Culture and tradition

Cultural beliefs and practices of the community have a strong effect on the community members and their behavior (Juma, Askew, Alaii, Bartholomew & van der Borne 2014; Wight et al. 2012; Mwanga, Mshana, Kaatano & Changalucha 2011; Mwale 2009). Retrogressive culture (Mwale 2009), culture of masculinity (Wight et al. 2012; Mwale 2009) as well as culture of silence (Tenkorang & Maticka-Tyndale 2014; Wight et al. 2012; Mwale 2009) required certain kind of behavior from individual.

Cultural beliefs and traditions can overlook attitudes and beliefs of individuals. In south Malawi, retrogressive cultural ceremonies and rituals for boys and girls coming to certain age encourage them to have unprotected sex with the experienced person, even though their own beliefs and values were different. (Mwale 2009.) According to Juma et al. (2014) Luo cultural traditions prohibited puberty aged children sleep in the same house with their parents which gave an opportunity to the adolescent to sneak out during the night and exposed them to risky behavior due lack of parental control. Moreover, traditional funerals which last for days with dance exposed the adolescent to risky sexual behavior. According to Mwanga et al. (2011), overnight social events such as weddings and discos with excessive alcohol consumptions increased risky sexual behavior among

adults and adolescents in the rural Tanzania. Tradition of wife-sharing (Mwanga et al. 2011), tradition to replace deceased wife with the younger sister (Mwale 2009) as well as tradition to inherit widow by the appropriate male relative of her deceased husband (Mwanga et al. 2011; Mwale 2009) put more people at risk of sexual transmitted disease such as HIV (Mwanga et al. 2011; Mwale 2009).

Culture of masculinity or machismo encouraged men to have sexual relations with more than one woman (Wight et al. 2012; Mwale 2009). According to Ragnarsson et al. (2011) strong expectation from the community on how to act as a man was the main obstacle of use of condoms and to avoid the transmission of HIV. Cultural (Tenkorang & Maticka-Tyndale 2014; Ragnarsson et al. 2011) and social expectations of masculinity, to get married and have children made safer sex practices the dilemma which prevented behavior change (Ragnarsson et al. 2011). Pressure from a greater number of source (Tenkorang & Maticka-Tyndale 2014; Wight et al. 2012), mainly from the male friends and relatives pushed young men to get sexual experience to avoid shame and rumors about sexual inability (Wight et al. 2012). In the refugee camps, men reported having higher levels of risky sexual behavior than women. However, compared their risky behavior with men who lived in the surrounding communities, male refugees and residents behavior did not differ much. (Dahab, Spiegel, Patterson & Schilperoord 2013.)

Culture of stoicism towards death affected the attitudes of HIV infections. In other words, death seemed inevitable and the cause of death was not the relevant issue and hence behavior change was not needed (Mwale 2009). Moreover the discussion about HIV was not seen appropriate. Silence during the discussion was linked to fear of being shunned. Culture of silence created false beliefs about HIV and AIDS messages and dangerous to disease had seen as the exaggeration of the western media. HIV was seen also as a punishment for sexual sins. (Mwale 2009.) According to Tenkorang and Maticka-Tyndale (2014) and Biddlecom et al. (2009), in many African countries, parents do not communicate about sex with their children. In Tanzania, the culture of silence prevented adults' discussion about sexual risks and behavior with young people, because discussion was considered partly as promoting sexual activity (Wight et al. 2012.) According to Biddlecom et al. (2009) discussion about contraceptives between parents and children was not common. However, according to Hardre et al. (2012) parents and community leaders mentioned open discussion with the young people one of the main issue to

motivate them for safe sexual behavior. They also had higher perceptions of young peoples' competencies to stay faithful or abstinent in comparison with young people. Moreover, youths who were able to talk with the parents, relatives or friends about intention to take HIV test were more likely to be tested even though the intention to take a test was generally low. (Denison et al. 2009).

Traditional social system where men are in position of power and women under restrictions that limit their influence is not necessarily a barrier for behavior change (Wight et al. 2012; Atkinson et al. 2011). In Tanzania, mother or other female relatives were responsible for decision making and action in child care and treatment regardless of the father's attitude (Mushi et al. 2008).

Even though inequality has limited women's changes for behavior change, young people have also been powerless. The generational hierarchy in Tanzania meant that young people's status was just above children and hence programme targeting young people was not effective, because the beliefs of those around young people were not involved in the intervention. (Wight et al. 2012.)

5.1.4 Education and knowledge

Education level of the target population or population exposed by the health programs and campaigns is correlating the positive way towards health programs (Mtenga et al. 2015; Asp, Petterson, Sandberg, Kakakyenga & Agardh 2014; Leerloojier et al. 2013; Keating, Meekers, Adewuyi 2006). In HIV campaign awareness and perceptions about safe sexual behavior and knowing where to obtain condoms were higher among educated population (Keating et al. 2006). According to Asp et al. (2014) women who had completed secondary school were more likely to be well prepared for child birth. According to Mtenga et al. (2015), individuals with secondary school education were more likely to use voluntary counselling and testing for HIV compared with those with lower education. Low education, especially in the rural areas has been seen a reason for poor knowledge and distorted beliefs of HIV/ AIDS among young women in Kenya (Muli & Lawoko 2014).

Although women are acting as a community volunteer ability to read is not required even though illiterate people lack access to written material (Atkinson et al. 2011). According to Kim et al. (2015), among community volunteers for young child feeding program nearly half of them had limited capacities of reading or writing. However, the tool for teaching was prepared in an easily understandable way taking into account illiteracy.

According to Leerloojier et al. (2013) the possibility of teenage mothers to continue school prevented early marriage, increased autonomy and income generation. Moreover, education strengthened their belief to take care of themselves. In Kenya, schoolgirls in schools with the better health program initiated sexual relationship at the later age compared with the other youth and they abandoned behavior which limits their wellbeing (Wight et al. 2012).

According to Garley et al. (2013) the education level of the household head increased the use of insecticide-treated nets meaning that in the households where the head of the household had no formal education use of nets was low. Especially in the rural area people's interest can be in other issues than in behavior change (Keating et al. 2006). Less schooling and less intellectual stimulation compared with boys limited girls capability to learn about sexual health and analyze their problems neither seek appropriate help (Wight et al. 2012). At the refugee camps education level of the respondents was not known, but men were reported having higher knowledge about HIV than women. Moreover, the use of condom increased as well as HIV testing representing positive behavior change. (Dahab et al. 2013.)

Knowledge and awareness of certain subject do not correlate necessarily to the behavior change (Ochako et al. 2015; Richter, Phillips, McInnis & Rice 2012). Rumors about the adverse effects of interventions created negative perceptions, despite opposite experiences and led to the use of other health services (Mushi et al. 2008). In Kenya myths and misconceptions that modern contraceptives are causing infertility, false information about side-effects and fear that women become sexually promiscuous affected to the use of contraceptives (Ochako et al.2015). The discontinuation of the contraceptive increased after respondents received information about method-related side effects (McClain Burke & Ambasa-Shisanya 2014). In the other study from Kenya, young people who endorsed a greater number of myths about HIV had sexual experience earlier than the other youth (Tenkorang & Maticka-Tyndale 2014). Myths and beliefs about condoms prevented

condom use in Tanzania because condoms, infection and infidelity were associated to each other (Wight et al. 2012). High education with significant knowledge of HIV transmission did not change risk behavior, but increased awareness of HIV transmission encouraged people to open discussion and to be tested (Richter et al. 2012).

Knowledge of HIV transmission and prevention did not predict intention to be tested among the adolescent because most of them did not see any risk factors in their behavior within next year. Adolescents who wanted to be tested for HIV wanted to be sure about their status and to be free of fear of HIV. However, the prevalence of those adolescents who wanted to know their status was low. (Denison et al. 2009.) According to Cawley et al. (2014) the use of condoms was low among those HIV negative participants who used voluntary counselling and testing for HIV even though the message about prevention and safe sexual behaviour has been shared during counselling. Moreover, those HIV negative people who used voluntary counselling and testing twice were more likely to increase their number of sexual partners.

5.1.5 Economical factors

Poverty (Hardre et al. 2012; Wight et al. 2012) and poor education is an important obstacle to behavior change because decisions have made in the short term. Among poor people talk about their lives was fatalistical and linked to God's will. Immediate advantage of certain behavior, such as sex, was seen more beneficial than possible unwanted consequences or long term threats. (Wight et al. 2012.)

Poverty can force people to behave on safe way or force them to find alternatives for risk reduction. In Zimbabwe, rising poverty due to the economic collapse reduced risky sexual behavior especially among men, because poverty led men to disengage from paid sex (Muchini et al. 2011). In Uganda, mosquito nets were maintained and repaired even though poverty hampered the access of material needed for repair, but cost of repair was seen less than the cost of malaria treatment (Scandurra et al. 2014). In rural Tanzania, condoms considered being too expensive and therefore some men made home-made condoms which preventive feature neither bodily healthiness was not guaranteed (Mwanga et al. 2011).

According to Juma et al. (2014) poverty was the motive of the parents to encourage girls for early marriage. Cattle for the dowry increased their income while early marriage led the school dropout of the girl affecting her future opportunities. However, parents and community leaders mentioned that by the removal of poverty youths will get hope and reason to invest in surviving and hence their behavior can change to the safer direction. According to them, poverty can be reduced by assisting in business or employment. (Hardre et al. 2012.)

In Uganda, within the program income activities increased the autonomy of teenage mothers and enabled them to act in the new way. The goat, given by the community and purchased by the program was in the best situation a starting point for the better income because the well-treated goat produced enough to buy other domestic animals. Income of teenage mothers was increased also by the support group. Support group established collective income activities such as bee, poultry and cattle farming, cultivation and sale of vegetables. (Leerlooijer et al. 2013.)

Socio-economic factors involved travelling among some profession such as businessmen/women (Muchini et al. 2011; Mwanga et al. 2011) fishermen and fish mongers (Mwanga et al. 2011). In the rural Tanzania, already common pre- and extra marital relationships were increased due to mobility and migration and hence mobility and migration were reported to be the most common reason for unprotected sex and risk sexual behavior. In Zimbabwe, “men with money” continued risky sexual behavior despite of messages to avoid HIV (Muchini et al. 2011).

The lower status of the women in the society (Juma et al. 2014; Wight et al. 2012) and economic dependence on men was associating negatively to women’s sexual behavior change (Wight et al. 2012). Girls who have been less valued in comparison with boys may have looked to be valued by choosing marriage or by engaging risky sexual behavior (Juma et al. 2014). According to Tenkorang and Maticka-Tyndale (2014) young women’s lack of control over their sexuality and sexual outcomes exposed them for the early sexual debut. According to Wight et al. (2012) restricted gender roles and polygyny disadvantaged women as well as very limited economic opportunities.

According to Mwanga et al. (2011), in the fishing communities women sold sex for livelihood, but condoms were not used. Similar behavior was seen in the refugee camp,

where transactional sex increased, but simultaneously, use of condoms decreased at the same camp exposing women to unsafe sex. However, reason for such unsafe behavior was not identified in the study. (Dahab et al. 2013.)

Transactional sex has been a coping strategy for some teenage mothers to sustain their living if they were not enough financially supported by the parents (Leerlooijer et al. 2013). Lack of money encouraged women to have transactional sex to meet basic material needs (Wight et al. 2012; Muchini et al. 2011; Mwanga et al. 2011). In the rural Tanzania, transactional sex was embedded in the culture at all income level and young women's and girl's respectability and self-worth were linked on receiving suitable recompense for sex such as gifts and money. Due to that, young women were encouraged to have sex and change partners. However, according to cultural norms, respectable young women should avoid pre-marital sex, but parents were not aware of the unsafe behavior, because young people learned to present themselves according to the requirements of different social context. (Wight et al. 2012.)

5.1.6 Accessibility of goods

The easy access of the goods is increasing behavior change in the community (Huber & Mosler 2013) as well as mass distribution campaigns of commodities (Ricotta et al. 2015; Scandurra et al. 2014; Garley et al. 2013). In Tanzania, the presence of health facility or drug shop in the village increased the use of prompt malaria treatment including timeliness of treatment (Alba et al. 2010). Mass distributions of insecticide-treated nets to the households lead to the increased use of nets, however it did not guarantee that households had enough nets or it has used or maintained as required (Ricotta et al. 2015). Also in Nigeria the free distribution of insecticide-treated net increased the use of nets, however nets were more used by the women and small children especially when the household owned only one net. (Garley et al. 2013.)

Previous experiences of program failures, new intervention technologies (Atkinson et al. 2011), lack of accessibility (Huber & Mosler 2013; Atkinson et al. 2011) and quality of the goods (Huber & Mosler 2013) created resistance in the community for programs (Huber & Mosler 2013; Atkinson et al. 2011). Similar effect is with activities which

require monetary value or time without any incentive (Atkinson et al. 2011). Moreover, geographical limitations and distance to the health facility or campaigns (Ricotta et al. 2015) as well as remoteness (Bowen 2012; Atkinson et al. 2011), poor weather and roads and availability of the transports associate negatively to the programs (Mwanga et al. 2011).

In the rural Ethiopia, more people think that the filtered water was far away from their home less filtered water they fetched, even though filtered water was safer. Also, more of the taste was considered not liked less filtered water was fetched (Huber & Mosler 2013). In Tanzania condoms were not used because of limited access (Wight 2012; Mwanga et al. 2011). Moreover, some people had never seen or knew condom and therefore condoms given to them were given to the children to play (Mwanga et al. 2011).

5.2 Communication and communication methods of behavior change

Success of behavior change campaigns depends on used communication methods (Bowen 2013; Keating et al. 2006). Behavior change communication material needs to take into consideration community's cultural experience and social routines including community's capacity to manage interventions (Atkinson et al. 2011) although many HIV education programs had the same characteristics in common and these programs can be implemented throughout the world (Kirby et al. 2007). However, cultural and language diversity has been considered a reason for the failure of HIV/AIDS programs in Botswana. Moreover practices which tended to conflict audiences traditional values caused discomfort (Ntshebe, Pitso & Segobye 2006).

Successful behavior change program has a clear goal and focus narrowly on specific behavior (Kirby et al. 2007). Use of various techniques of interventions is beneficial (Briscoe & Aboud 2012; Kirby et al. 2007) such as information, performance and media or materials and social support (Briscoe & Aboud 2012). Mass media, which reaches the large proportion of population (Keating et al. 2006) or various type of community activities have alone impacted on intention to behavior change, but the impact has been found to be more effective if the target population has been exposed to the combination of both sources (Ricotta et al. 2015; Muchini et al 2011; Atkinson et al. 2011; Babalola

et al. 2006;). Moreover, messages should be delivered regularly to keep the target population attention on the adequate level (Atkinson et al. 2011).

Mass media campaigns improve communities' knowledge and open discussion (Bowen, 2012; Keating et al. 2006). The mass media campaign of malaria prevention covering TV, radio, SMS messages, other audio such as songs and music videos combines with the free delivery of the commodity increased significantly the use of bed nets in Cameroon (Bowen 2012). Also in Tanzania combination of mass media (radio-and TV spots, discussion programs, printed material) and community messaging (road shows, mobile video units) with community change agents (house visits, group talks, cultural shows, school events, public meetings) influenced positively people's perceptions and beliefs about insecticide-treated nets and increased the likelihood of universal coverage of bed nets in the households (Ricotta et al. 2015). In Kenya, media exposure was positively associated with HIV/ AIDS knowledge. However, knowledge was considerably low among young women lived in the rural areas despite to radio listening (Muli & Lawoko 2014). Moreover, according to Ricotta et al. (2015), it has not been clarified how much different channels affected communities or people's behavior, because at the same time information was given by the community change agents. The source of information has been also the village crier and announcements in the churches and mosques. Even though a lot of different communication channels produced the information, reasons for complaint were infrequent health education sessions and inadequate explanation of purpose of intervention (Mushi et al. 2008).

According to Keating et al. (2006) willingness to discuss the prevention of HIV/AIDS with partners improved among those who were exposed by the mass media campaign. However, it has not been clarified how awareness of prevention of HIV, intension and the actual use of condoms correlated between each other. According to Alba et al. (2010) mass media campaign about prompt malaria treatment increased the knowledge of causes of malaria and its treatment. Children's treatment prevalence was already high before the campaign, but older people attendance to health facility for the first treatment increased significantly during the campaign.

The main mass media source has been radio (Koenker et al. 2015; Asp et al.2014; McClain Burke & Ambasa-Shisanya 2014; Muli & Lawoko 2014; Keating et al. 2006; Kajubi et al. 2008; Pappas-DeLuca et al. 2008; Babalola et al. 2006). In the state of Enugu

in Nigeria, consistent radio messages with community events reduced the false beliefs and intention of female genital cutting (Babalola et al. 2006). However, exposure to radio did not associate with behavior change for birth preparedness among women in Uganda (Asp et al. 2014). According to McClain Burke and Ambasa-Shisanya (2014), the discontinuation of contraceptives increased after the communication campaign delivered mainly through the radio, even though the purpose of the campaign was opposite.

Television as well as other mass media channels are reaching more males than females. This could be due to the higher education of males (Keating et al. 2006). According to Asp et al. (2014), in Uganda newspaper readers were better prepared for child birth compared to radio listeners. However, exposure to printed advertisements (Keating et al. 2006) or television was generally lower in comparison by radio (Asp et al. 2014; Keating et al. 2006; Koenker et al. 2015). It has not been identified why exposure to these mass media channels was low, but prevalence of newspaper reading was not very common partly depending of areas (Keating et al. 2006). People living in the rural areas might stay bystander in the campaigns which are mainly distributed in mass media especially by TV and newspapers or if variation of the languages in the country have not been taken into account in radio broadcastings. Moreover, literature rate might be lower in the rural as well as cost of newspaper high and therefore households' income has been used for other purposes. (Asp et al. 2014.)

Small media such as picture cards, posters, dramatic role plays and songs provide information alone and it is considered more interpersonal and less controlled way to distribute messages (Briscoe & Aboud 2012). Community messages should respect socio-cultural norms (Atkinson et al 2011), but messages should also challenge traditional beliefs (Briscoe & Aboud 2012; Atkinson et al. 2011). Posters, designed for target audience and based on their values and principles are effective (Kirby et al. 2007; Ntshebe et al. 2006; Mushi et al. 2008).

In Botswana HIV/AIDS reducing campaign which included cultural aspects had positive feedback from the community with suggestions how the posters could be more informative in the context of culture and ethnics and how the posters could be seen by more people (Ntshebe et al. 2006). In Uganda, the posters in the health care centers were one of the main sources of the information for gay and bisexual men, however the posters missed the information about possible HIV infection through male-male sex (Kajubi et

al. 2008). Posters can be misinterpreted and misunderstood as was the case in Tanzania. People did not understand posters' protective message about vaccination campaigns and malaria treatment with symbols and hence most of the people interpreted the message incorrectly. Moreover, there was no suitable brand name in local language for the intermittent preventive treatment of malaria in infants. New posters were developed based on the suggestions from the community and special attention was paid to the adoption of the positive impression. A new informative brand name using local language and meaning of the word was developed to strengthen community knowledge and understanding about new intervention. (Mushi et al. 2008.) However, in Kenya, posters about family planning did not make a difference regarding the discontinuations of contraceptives between those who was and who was not exposed to the family planning campaign. (McClain Burke & Ambasa-Shisanya 2014).

Community health workers (Alba et al. 2010; Keating et al. 2006; Mushi et al. 2008; Ricotta et al. 2015) and visits to the clinics has been reported as important information venues (Keating et al. 2006) especially for women (Keating et al. 2006) and only half of the men got the information from medical personnel (Kajubi et al. 2008). School campaigns held by community change agents engaged communities in discussion as well as village talks (Ricotta et al. 2015; Koenker et al. 2015) with street theatre, community outreach at weekly markets and road show organized by the trained community mobilizers. According to Wight et al. (2012), stories, class discussion and drama serial performed by peer educators encouraged pupils to anticipate the outcomes of their behavior. According to Alba et al. (2010), road shows, including roleplays, public lectures and quizzes, disseminate message about prompt malaria treatment more equitably compared with other communication method such as radio or billboards. Moreover, the house visits of the community mobilizer with interpersonal communication focusing on the behavior change were part of the behavior change campaigns. It is not clear how much house visits alone affected behavior change (Koenker et al. 2015), but according to Atkinson et al. (2011), it provides access to information for remote and marginalized populations who can otherwise stay in the pockets of campaigns.

Communities' awareness and knowledge of health related issues can be increased by entertainment-education drama. The drama needs to be designed on such way that the local context has kept in mind and hence the audience can feel similarity to the characters.

It might not change audiences' behavior directly, but it can change the attitude and increase the intention for behavior change. (Pappas-DeLuca et al. 2008.)

Popular radio drama in Botswana where HIV/AIDS was part of the content of the program had positive impacts on the audience behavior change. Positive association between audience and behavior change has been seen especially among those who had exposure to the drama for a long time. Intention to the HIV test and talk about HIV test with partners increased while stigmatizing attitudes related to HIV decreased. Moreover, the characters of the actors in the drama and how audience felt them, positively or negatively, might affect the intention of behavior change. (Pappas-DeLuca et al. 2008.) In Zimbabwe, a popular song with a famous performer increased awareness of AIDS (Muchini et al. 2011). In Nigeria campaign for insecticidal net care was boosted by the song content (Koenker et al. 2015).

According to Briscoe and Aboud (2012), common and effective combination to achieve behavior change has been delivering of free material with modeling and information. Free material might function as an incentive to engage with the intervention and it might present the standard which is needed for the behavior change.

6 DISCUSSION

The purpose of health promotion is to influence the health behavior of individuals and communities on the positive way and it should focus on the social and environmental determinants of health rather than individual's behavior (Green & Tones 2011). The purpose of this literature review was to describe factors which relate behavior and behavior change in the communities and to describe the channels which have been used in behavior change communication programs in developing countries in Africa. By understanding factors affecting behavior change it is possible to plan and implement campaigns and programs which might have the effective outcome.

6.1 Inspection of the results

For the literature review researches were collected from Academic Search Premier and ProQuest databases as well as manually from scientific journals and Google. Researches accepted to this review came mainly from the countries of Sub-Saharan and countries next to Sub-Saharan, except three literature reviews which had included many countries in their reviews. Most of the researches concerned with HIV/AIDS programs, sexual behavior and malaria prevention.

Community, personal issues, culture and tradition, education, economy and accessibility of goods are all related to behavior and behavior change. Some of them have both positive and negative effect depending on the circumstances, culture, country and/or region. Also the way of communication and used communication method influence how the behavior change has been accepted. In some studies, it was difficult to prove that the behavior changed happened because of the behavior change program/ campaign and not due previous learning. Also Thompson et al. (2008) mentioned that the evaluation of the campaigns effects provide a little information about the component which contributed the effect.

Even though behavior theories should be used as a base for behavior change communication programs (Sood et al. 2014; Corcoran 2011), only three studies (McClain

Burke & Ambasa-Shisanya 2014; Ricotta et al. 2015; Mtenga et al. 2015) accepted to this literature review stated clearly that behavior theory was used. Briscoe and Abdou (2012) mentioned also that theory has been used rarely to support the choices of techniques in behavior change communication interventions. However, behavior theory acts as a guide to campaign design and it helps to identify problems, factors to modify, outcomes and evaluation (Corcoran 2011; Nutbeam et al. 2014).

The meaning of the community has to be identified before any campaign and it should not be defined only by geographical location because geographical location does not necessarily mean that the community is homogenous (Atkinson et al. 2011). Different community needs different interventions (Green & Tones 2010). However, only one research accepted to this review identified clearly the target community. The reason for that might be that researches' weight have been on the other issues such as the results of the campaigns rather than on community definition.

According to Sood et al. (2014) community's participation is essential for the success of the behavior change and for health campaigns. Similar findings were seen also in this literature review. 15 studies emphasized community's engagement and participation in one way or another. Community's capacity strengthening, mobilization and dialogue between community and program leaders are the key elements to achieve behavior change (Babalola et al. 2006.) Community representatives are aware of problems (Atkinsons et al. 2011) and socio-cultural aspects (Babalola et al. 2006) in the community and hence programs which are based on the self-identification of the problem in the community are more likely to succeed. Interventions appropriate for the community might be less complex, more practical, affordable and locally accepted (Atkinson et al. 2011). Moreover, communities motivation for the preventive course of action is likely to be more effective than corrective action (Koenker et al. 2015) and programs integrated into broader development goals is suggested being beneficial (Atkinson et al. 2011). However, it is not clear how much activities for behavior change alone affect behavior, because national policies, laws and other campaigns also have an impact to it (Riehman et al. 2013).

Lack of public health infrastructure, unclear roles and responsibilities, irregular program implementation (Atkinson et al. 2011), lack of information, lack of support from the supervisors (Kim et al. 2015) and lack of material needed for education and training

impairs desirable behavior change (Kim et al. 2015; Atkinson et al. 2011). Moreover, activities which emphasize too much knowledge and beliefs and forgetting other factors such as gender inequality, ethnicity, poverty, educational system, policy and cultural practices, might limit effectiveness (Delva et al. 2010).

Social factors rather than preventive factors determine behavior (Scandurra et al. 2014) and even though individual's behavior is influenced by the community individual has still autonomy to make his own decision about how to act (Ragnarsson et al. 2011). In this review 14 researches indicated personal issues which affect to behavior and behavior change. One of the important issues was the individual's positive attitude towards behavior change, it also promotes the likelihood acting accordingly (Mtenga et al. 2015; Koenker et al. 2015; Ricotta et al. 2015; Huber & Mosler 2013). Instead, fear has various effects to behavior (CommGAP, n.d; McClain-Burke & Ambasa-Shisanya 2014; Leerloojier et al. 2013; Ragnarsson et al. 2011; Kajubi et al. 2008). Fear of symptoms and disease, can motivate people to seek information (CommGAP, n.d) and motivate them to change behavior to safer direction (Muchini et al. 2011; Ragnarsson et al. 2011). However, in the other kind of context fear can be the barrier to behavior change. Fear of stigmatization and rejection can lead to the unchangeable situation and continuation of risk behavior (Leerloojier et al. 2013; Ragnarsson et al. 2011).

Culture shapes how individual understand health and illness. It has been argued that behavior change campaigns should focus more on culture than behavior to achieve meaningful change and positive outcomes. (Airhihenbuwa et al. 2014.) The importance of culture and traditions in behavior change has been stressed also in eight researches of this review. Cultural beliefs, expectation and practices of the community have strong effect on the community members and their behavior (Juma et al. 2014; Wight et al. 2012; Mwale 2009; Mwanga et al. 2011). Culture of stoicism (Mwale 2009), culture of silence (Tenkorang & Maticka-Tyndale 2014; Wight et al. 2012; Biddlecom et al. 2011; Mwale 2009) and culture of masculinity (Tenkorang & Maticka-Tyndale 2014; Wight et al. 2012; Ragnarsson et al. 2011; Mwale 2009) have all rather preventive effects to behavior change than promotive effects.

13 researches in this review brought out the meaning of education and knowledge in behavior change and 10 researches brought out the meaning of economy in behavior change. Education assists to achieve better economy which then gives more possibilities

and freedom to change behavior to safer direction especially among women. (Tenkorang & Maticka-Tyndale 2014; Riehman et al. 2013; Leeroloojier et al. 2012; Wight et al. 2012). Education increased the awareness and actions for safer behavior (Mtenga et al. 2015; Tenkorang & Maticka-Tyndale 2014; Dahab et al. 2013; Leeroloojier et al. 2012; Keating et al. 2006). However, rumors (Mushi et al.2008), myths and misconceptions (Ochako et al. 2015; Tenkorang & Maticka-Tyndale 2014; Wight et al. 2012) can create negative perceptions and therefore prevent behavior change (Mushi et al. 2008) especially if the person does not see any risk factors in behavior (Denison et al. 2009). Therefore, it is essential, that behavior change satisfies individual's needs. Before that is not reasonable to expect major changes in behavior (Newson et al. 2013).

Economic factors have the important role in behavior change (Wight et al. 2012; Quick 2003). Price of the goods needed for behavior change can be the main barrier to adopt new behavior (Atkinson et al. 2011; Mwanga et al. 2011). Moreover, decisions have been made in short term and immediate advantage of certain behavior, such as getting food, has been seen more beneficial than possible consequences (Hardre et al. 2012; Wight et al. 2012).

According to Quick (2003) there are several other reasons why behavior change campaign can fail. This view is confirmed also according to this review. Most of the other reasons are linked to issues which are under the responsibility of the authorities, such as poor infrastructure including poor road conditions (Atkinson et al. 2011) and poor access for services (Wight 2012; Mwanga et al. 2011; Alba et al. 2010). However, such reasons can be prevented by the public health policies which notice them and their effect to safer behavior (Green & Tones 2010).

In this review 18 researches managed behavior change communication and used methods and channels. The success of the behavior change campaigns depend on characteristics of the communication and used communication methods. Some behavior change campaigns might have the same characteristics which can be used throughout the world (Kirby et al. 2007), but mainly behavior change campaigns need to use methods which are suitable for the audience needs (Corcoran 2013). In other words, behavior change communication and used material need to take into consideration community's cultural experience, social routines and traditions including special needs and position of subgroups (Atkinson et al. 2011; Ntsebe et al. 2006).

The successful behavior change campaign has the clear goal and focus narrowly on specific behavior (Kirby et al. 2007). The message should be gender neutral and touch everyone and not focus on women and children like advertisement often do (Garley et al. 2013). According to Sood et al. (2014) many campaigns use the various approaches to achieve behavior change. Also in this study similar issues were seen. Campaigns used various channels (Babalola et al. 2006; Atkinson et al. 2011; Ricotta et al. 2015), communication methods (Koenker et al. 2015; Bowen 2013; Keating, Meekers & Adewuyi 2006) and techniques (Briscoe & Aboud 2012; Kirby et al. 2007) and message were delivered regularly (Atkinson et al. 2011). Moreover, free material (Ricotta et al. 2015; Garley et al. 2013) with modeling and information have been the effective combination for behavior change (Briscoe & Aboud 2012).

Mass media channels were used for campaign (Asp et al. 2014; McClain Burke & Ambasa-Shisanya 2014; Keating et al. 2006; Babalola et al. 2006; Kajubi et al. 2008; Pappas-DeLuca et al. 2008; Koenker et al. 2015). Use of mass media has many benefits. It opens discussion, increase knowledge (Bowen 2012; Keating et al. 2006), it is not expensive measured per person (Bowen 2012) and it reaches the large proportion of population (Keating et al. 2006). Sood et al. (2014) had similar findings in their study. However, according to them, health communication campaign should reveal a shift towards small-scale community in the developing countries to secure community's participation.

Use of mass media has also other disadvantages. People who are living in the rural areas (Asp et al. 2014) or have other dialect might remain into shade (Mushi et al. 2008; Ntshebe et al. 2006). Moreover, the message can mislead the audience if legal and social norms do not allow to deliver the actual message (Kajubi et al. 2008).

Process of behavior change can take years and there are some issues which need to keep in mind. According to Newson et al. (2013) old behavior has to be unlearned, new behavior has to satisfy individuals need, positive feedback or information is critical and only one kind of change at the time is preferably if the changes are not more pleasurable than the previous options. Moreover, people need to understand what means behavior change, change has to be easy, desirable and somehow rewarding.

6.2 Reliability, limitation and ethics of the research

Literature review has been criticized as a research method. It has been considered being subjective and random where the researcher can deliberately select researches which fit his purpose. It has been mentioned to be inexact. Evaluation of the used literature might have been insufficient. (Kangasniemi et al. 2013.) Moreover, data criteria might not have been described properly and the reader cannot follow inclusion/ exclusion criteria (Kankkunen & Vehviläinen-Julkunen 2009). However, due its argumentative nature and possibilities to direct observation justifiably to particular question has mentioned to be the strength of descriptive literature review (Kangasniemi et al. 2013).

Collection of the data, results and limitation of this literature review has been tried to describe as clearly, logically and objectively as possible without any expectations and prejudice towards the subject or results of the review (Kankkunen & Vehviläinen-Julkunen 2009). Reliability of this literature review was improved by collecting researches from the scientific databases. Researches from the reliable organizations were used on the theoretical part. Mainly quite newish researches were included in the literature review, which eased the transmission of the results to a present day. Researches, which implied to students' theses, were rejected, because master or lower level researches should not be used (Kankkunen & Vehviläinen- Julkunen 2009).

The evaluation of the reliability and quality of the selected researches was mainly based on the researcher's understanding, knowledge and experience about what is good and scientific research. However, reliability and quality can be receded, because only one person evaluated the used data and methods. Moreover, any standardized measures of reliability or quality of the literature were not used. (Kankkunen & Vehviläinen- Julkunen 2009; Polit & Beck 2014.)

Collection of the data needs to describe so that the reader gets a view about the search (Kangasniemi et al. 2013; Kankkunen & Vehviläinen- Julkunen 2009). In this literature review collection and selection of the data has been described with the table and figure to help understanding of selection process. Reliability has been improved by accepting only researches with full text and which have been done scientifically according to research reports. Moreover, bibliographical information has been adequate in each research. The limitation of this literature review might be that the word combination which had used

for the search excluded relevant researches of behavior change. It might have happened also that the search limitation has excluded relevant researches.

Most of the researches were not able to evaluate if the change in behavior happened due their program activities or if other factors behind the program affected behavior, hence behavior change, if it happened, was cumulative and due to various factors. Most of the researches concerned with behavior change linked to HIV- and malaria prevention and therefore factors which affect behavior change, but linked to other health matters might be different. Moreover, researches accepted to this literature review came from many developing countries in Africa with various social systems, also target population presented many different ethnic groups and hence factors linked to behavior change can present only those who were involved in the researches. However, results can be generalized outside of the target population if the background factors are similar in comparison with the target populations.

Reliability of the literature review might be affected also due linguistic diversity, meaning that some unknown phrases and words, which were not found in dictionaries, might not have been understood as required by the researcher. Reliability of the literature review might be affected by the chosen researches, meaning that some relevant researches with additional information have not been found.

Ethics of the research has followed throughout this research. According to Kankkunen & Vehviläinen-Julkunen (2009) each research need to be useful. Even though there are many researches about behavior change and this literature review will not give any new information about it, it will collect the findings from the previous researches and give wider understanding of behavior change. Therefore, this literature review is entitled and information given by this literature review can be utilized in practice. Moreover, researcher's understanding about honesty, truthfulness, fairness and transparency has guided each stages of the literature as required according to research ethics (Siu & Comerasamy 2013). Literature review was done using the appropriate marking of reference sources. Moreover, researches which have been accepted for this literature review have been done, according to research reports, with permission from the persons involved. (Finnish Advisory Board on Research Integrity 2014; Siu & Comerasamy 2013.)

6.3 Conclusion

According to this descriptive literature review, behavior change in community is influenced by many several factors. The same factor can correlate both positively and negatively to behavior change depending of the culture and environment. Various mass media channels can be used to achieve behavior change. The following conclusions were made:

1. Similar socio-cultural background among community members, the self-identification of the need and health problem as well as support from the community leaders, peers, parents and campaign designers improve community's commitment. Therefore, behavior change programs and campaigns with community participation often predict better success for the campaign.

2. Cultural factors including beliefs, traditions and myths as well as social pressure influence individual's behavior. Environment's influence can go beyond the individual's own interest and knowledge, and due to that, an individual might behave against personal intention. Therefore, the campaigns and programs of behavior change should interact on several levels.

3. Education level as well as economy influenced behavior change so that better education correlated positively with behavior change. Even though knowledge and awareness of subjects improved due to education, still myths and false beliefs influenced to behavior.

Due to poor education and poverty, people made short-term decisions without thinking about long-term consequences. Immediate advantage of behavior was seen more important than exposure to the risks.

4. Various channels of the mass media can be used for behavior change campaigns. Mass media alone can be used, but culturally appropriate message combined with community activities is more effective.

6.4 Suggestions for future research

Based to the results of this literature review, suggestions for future research are as follows:

1. More information about interventions influencing behavior change in community is needed. This means that programs and campaigns as well as used interventions need to be evaluated using evaluation criteria.
2. Research is needed to gain information how new technology can be utilized in behavior change campaigns.
3. Even though it might be challenging, research is needed about theories of behavior change in community and how the theory can be included in behavior change campaigns and which interventions are suitable for use with the theory.

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APPENDIX 1: FINAL SEARCH FROM THE DATABASES

Database	Search term	Limitation	Result	Selected
Academic Search Premier	change in behavior AND community AND communication	2006–2015, Africa, South-Africa excluded.	368	20
Academic Search Premier	behavior change communication AND campaign	2006–2015 Africa, South-Africa excluded.	221	5
Academic Search Premier	behavior change AND communication AND developing country	2006–2015 Africa, South-Africa excluded.	247	3
Academic Search Premier	sport AND behavior change AND developing country	2009–2015 Africa, South-Africa excluded	15	1
PubMed	behavior change communication AND/OR campaign	5 years	62	0
ProQuest	behavior change communication community campaign	2009–2015, Africa, South-Africa excluded	284	2
Manual search from databases, (Elsevier, Sage, CINAHL; Academic Search Premier, and Google	search by the title of research	-	-	8

APPENDIX 2: RESEARCHES INCLUDED IN THE REVIEW

Researcher(s), name of the research, country	Purpose of the research	Data / Sample	Method	Main results
Alba, Sandra; Dillip, Angel; Hetzel, Manuel W.; Mayumana, Iddy; Mshana, Christopher; Makemba, Ahmed; Alexander, Mathew; Obrist, Brigit; Schulze, Alexander; Kessy, Flora; Mshinda, Hassan & Lengeler, Christian 2010. Improvements in access to malaria treatment in Tanzania following community, retail sector and health facility interventions -- a user perspective. <i>Malaria Journal</i> 9, 163–178. Tanzania.	To evaluate changes in understanding and treatment seeking for malaria and assess how changes could be attributed to the interventions focusing in availability, accessibility and affordability.	Rural villages in Tanzania, 2005 adults and children who recently had fever episode. 2004 n=154, 2006 n=153, 2008 n=127.	Interview.	Awareness and treatment-seeking of malaria was high even on the baseline study. Better understanding causes of malaria increased during the study period, older people attendance to health clinic for first treatment increased.
Asp, Gustav; Petterson, Odberg; Sandberg, Jacob; Kakakyenga, Jerome & Agardh, Anette 2014. Associations between mass media exposure and birth preparedness among women in southwest Uganda: a community-based survey. <i>Global Health Action</i> 7, 1 –9. Uganda.	To explore the association between exposure of mass media and birth preparedness.	1 199 women from 120 villages in southwest Uganda.	Interview.	Exposure to radio or TV did not associate with birth preparedness. Newspaper readers and birth preparedness had significant relationship

<p>Atkinson, Jo-An; Vallely, Andrew; Fitzgerald, Lisa; Whittaker, Maxine & Tanner, Marcel 2011. The architecture and effect of participation: a systematic review of community participation for communicable disease control and elimination. Implications for malaria elimination. <i>Malaria Journal</i> 10 (1), 225–257. Australia.</p>	<p>To presents the findings of participation for communicable disease control and elimination and provide guidance for the current malaria elimination campaign.</p>	<p>60 papers/articles between 1950–2010.</p>	<p>Systematic literature review.</p>	<p>Studies showed significant reduction in disease incidence or prevalence using various forms of community participation. Local volunteers provided with adequate training. Supervision and resources are important elements of the success of the intervention.</p>
<p>Babalola, Stella; Brasington, Angela; Agbasimalo, Ada; Helland, Anna; Nwanguma, Edith & Onah; Nkechi 2006. Impact of a communication programme on female genital cutting in eastern Nigeria. <i>Tropical Medicine and International Health</i> 11, 1594–1603. Nigeria.</p>	<p>Describe a female genital cutting elimination communication programme and assesses its impact in changing knowledge, attitudes and behavioral intentions.</p>	<p>Households in two states in Nigeria. Baseline survey 426 men, 531 women and follow-up survey 386 men and 585 women aged 18–59.</p>	<p>Baseline and follow-up survey.</p>	<p>The multimedia communication programme has been effective. Attitude towards female circumcision has changed and intention not to perform female circumcision has increased.</p>
<p>Biddlecom, Ann; Awusabo-Asare, Kofi & Bankole, Akinrinola 2009. Role of Parents in Adolescent Sexual Activity And Contraceptive Use in Four African Countries. <i>International Perspectives On Sexual And Reproductive Health</i> 35 (2), 72–81. Ghana.</p>	<p>To examine the strategies how parents most effectively improves the sexual and reproductive health of their children according to three dimension: material support, communication and monitoring.</p>	<p>Adolescents, aged 15–19 in four African country (Burkina Faso, Ghana, Malawi, Uganda). Burkina Faso n= 5955, Ghana n=4430, Malawi n= 4031, Uganda n= 5112.</p>	<p>Interview.</p>	<p>Adolescents who's parents monitored their night time movement, free time and knew their children's friends were more likely to reduce sexual activity. Sex related discussion including use of contraceptives was rare between parents and children.</p>

Bowen, Hannah 2012. Impact of a mass media campaign on bed net use in Cameroon. <i>Malaria Journal</i> 12 (1), 1–18. Cameroon.	To evaluate the impact of a national mass media campaign on bed net use.	Randomly selected people from urban and rural areas, n=2 176.	Interview.	Number of the children and adults sleeping under a bed net increased after the campaign. Mass media has important role on behaviour change communications.
Briscoe, Ciara & Aboud, Frances 2012. Behavior change communication targeting four health behaviors in in developing countries: a review of change techniques. <i>Social Science & Medicine</i> 75, 612–621. Canada.	To review programs and interventions implemented to change health behaviors related to child health in developing countries.	24 studies of behavior change in the developing countries.	Literature review.	Techniques were organized to six categories: information, performance, problem solving, social support, materials and media. The best practice programs used 3–4 techniques from different categories.
Cawley, Caoimhe; Wringe, Alison; Slaymaker, Emma; Todd, Jim; Michael, Denna; Kumugola, Yusufu; Urassa, Mark & Zaba, Basia 2014. The impact of voluntary counselling and testing services on sexual behaviour change and HIV incidence: observations from a cohort study in rural Tanzania. <i>BMC Infectious Diseases</i> 14 (1), 1–26. Tanzania.	To assess the impact of voluntary counselling and testing for HIV and changes in reported sexual behavior.	Mwanza region, years 2003-2004, 2006-2007, 2010. Total 8 961 participant, aged 15 or older.	Questionnaire.	Voluntary counselling and testing for HIV did not increased the use of condoms among HIV negative people although message about safe behavior was delivered during the counselling. Those who were tested twice were more likely to increase the number of sexual partners.
Dahab, Maysoon; Spiegel, Paul Njogu, Patterson & Schilperoord, Marian 2013. Changes in HIV-related behaviours, knowledge and testing among refugees and surrounding national populations: A multicountry study. <i>AIDS Care</i> . 25 (8), 998 – 1009. Switzerland.	To explore HIV related behavior among refugees and surrounding community residents.	Refugees at the camps and residents at the surrounding communities in Kenya, Tanzania and Uganda. Aged 15–59. Total N= 11 582 including base line and follow-ups.	Interview.	The prevalence of multiple partnership and casual sex were not higher among refugees compared the resident living in the surrounding communities. Risky sexual behavior decreased from the baseline to follow-up. Testing and condom use increased. There is no evidence which interventions have contributed the positive change.

<p>Delva, Wim; Michielsen, Kristien; Meulders, Bert; Groeninck, Sandy; Wasonga, Edwin; Ajwang, Pauline; Temmerman, Marleen & Vanreusel, Bart 2010. HIV prevention through sport: the case of the Mathare Youth Sport Association in Kenya. <i>AIDS Care</i> 22 (8), 1012–1020. Kenya.</p>	<p>To assess sexual behavior and determinants among sport club members and control group.</p>	<p>Youth living in the slum in Mathare Valley in Kenya. Members of sport club, aged 12–24, n=474. Nonmembers of sport club, aged 12–24, n=418.</p>	<p>Questionnaire.</p>	<p>Members of the sport club were likely to use condom, however level of the condom use was low in the both groups.</p>
<p>Denison, Julie; McCauley, Ann; Dunnett-Dagg, Wendy; Lungu, Nalakwanji & Sweat, Michael 2009. Hiv Testing Among Adolescents In Ndola, Zambia: How Individual, Relational, And Environmental Factors Relate To Demand. <i>AIDS Education & Prevention</i> 21 (4), 314–324. Zambia.</p>	<p>To examine how individual, relational and environmental factors relate HIV voluntary testing and counselling among adolescents.</p>	<p>Adolescents in Ndola, Zambia, aged 16–19, n=439.</p>	<p>Interview.</p>	<p>Awareness of HIV transmission and prevention was high among adolescents. Discussing with parents, relatives or friends increased the odd of intention to be tested for HIV. Intention to be tested was low among respondents, because most of them did not see any reason to be tested within next year.</p>
<p>Garley, Ashley; Ivanovich, Elisabeth; Eckert, Erin; Negroustoueva, Svetlana & Yazoume Ye 2013. Gender differences in the use of insecticide-treated nets after a universal free distribution campaign in Kano State, Nigeria: post-campaign survey results. <i>Malaria Journal</i> 12 (1), 1–7. Nigeria.</p>	<p>To assess the effects of gender on insecticide-treated net use (ITN).</p>	<p>24 local government areas in Nigeria. Total N=4 602, female N= 2 342, male N= 2 260.</p>	<p>Questionnaire.</p>	<p>Higher percentage of female used ITN compared to males. Young adult male, age 15–25, remained the least likely group to use ITN. Gender neutral messaging is needed for ITN distribution campaigns.</p>

Hardré, Patricia; Garcia, Fe; Apamo, Peter; Mutheu, Lucy & Ndege, Monica 2012. Information, affect and action: motivating reduction of risk behaviors for HIV/AIDS in Kenya and Tanzania. Sex Education 12 (1), 1–24. Kenya.	To describe motivational effects of school and community-based reproductive health education program aimed at risk behavior reduction of HIV/AIDS.	Three districts in both Kenya and Tanzania. Youth n=800-1200/district divided to three age group 10–15, 16–19, 20–24. Parents n= 1139, community leaders n=1394.	Questionnaire.	Motivational factors linked to safe sexual behavior were similar among youths, parents and community leaders. Treatment group and control group differed from each other.
Huber, Alexandra & Mosler; Hans-Joachim 2013. Determining behavioral factors for interventions to increase safe water consumption: a cross-sectional field study in rural Ethiopia. International Journal of Environmental Health Research 23 (2), 96–107. Ethiopia.	To describe an evidence-based community intervention to change health behavior.	Village in Rift Valley region. Every second household in the village, n=211.	Interview.	Perceived distance, knowledge, commitment and taste of the water strongly influenced participants' behavior.
Juma, Milka; Askew, Ian; Alaii, Jane; Bartholomew, Kay & van den Borne, Bart 2014. Cultural practices and sexual risk behaviour among adolescent orphans and non-orphans: a qualitative study on perceptions from a community in western Kenya. BMC Public Health 14 (1), 1–16. Kenya.	To explore community perceptions of cultural beliefs and practices and affects to sexual risk behavior.	Adolescents (N=78, aged 14–17), parents/ guardians (N=68, aged 25≤) belonging to Luo ethnic group. Key informants: community leaders, child welfare workers, health workers, area advisory council representatives (N=13).	Interview.	Cultural practices that predisposed adolescents (orphans and non-orphans) to risky sexual behavior were identified sleeping arrangement, funerals , replacing deceased wife with younger sister, widow inheritance, early marriage, value of the boys compared to girls.
Kajubi, Phoebe; Kanya, Moses; Raymond, Fisher; Chen, Sanny; Rutherford, George; Mandel, Jeffrey & McFarland, Willi 2008. Gay and bisexual men in Kampala, Uganda. AIDS Behaviour 12, 492–504. Uganda.	To describe the demographic characteristics of gay and bisexual men in Kampala and gauge awareness and level of sexual risk behaviour and foster their inclusion in HIV/AIDS prevention program planning.	Gay and bisexual men in Kampala, N= 224, aged over 18.	Structured questionnaire by face-to face interviewer.	The vast majority of gay and bisexual men in Kampala are Ugandan nationals. Perception that gay and bisexual men are at the risk of HIV was low and thus they might not respond to HIV prevention messages.

Keating, Joseph; Meekers, Dominique & Adewuyi, Alfred 2006. Assessing effects of media campaign on HIV/AIDS awareness and prevention in Nigeria: results from the VISION Project. BMC Public Health 6 (123). Nigeria.	To assess the effect of family planning and reproductive program's mass media campaigns on HIV/AIDS awareness and condom use in the target areas.	Households in three states, 5 Local Governements Areas from each state. Total 3 279 respondent, from that 43% was men, 57% women, aged 15–49.	Structured questionnaire. One member from each household interviewed by trained interviewer.	Mass media campaigns reached a large portion of the target population. Exposure to mass media can increase HIV/AIDS awareness and communities' willingness to discuss HIV/AIDS and increase their knowledge about the benefits of use of condoms for reducing HIV/AIDS risk. Different strategies are needed to increase the awareness of HIV/AIDS and condom use among unmarried individuals, female and people in the rural area.
Kim, Sunny; Ali, Disha; Kennedy, Andrew; Tesfaye, Roman; Tadesse, Amare; Abrha, Teweldebrhan; Rawat, Rahul & Menon, Purnima 2015. Assessing implementation fidelity of a communitybased infant and young child feeding intervention in Ethiopia identifies delivery challenges that limit reach to communities: a mixed-method process evaluation study. BMC Public Health 15 (1), 1–14. Ethiopia.	To assess implementation fidelity along delivery process of a community-based infant and young child feeding intervention.	In Ethiopia in two region. Supervisor N=75, health extension workers N=162, community volunteer N=315, mother with children aged 0–23,9 months N=810.	Semi-structured interview, questionnaire.	Training quality increased. Job's tools were used regularly by supervisors and health extension workers but only less than half of the volunteers received them. Message delivery about the program to volunteers was low.
Kirby; Laris & Rolleri 2007. Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. Journal of Adolescent Health 40, 206–217. United States.	To measure the impact of curriculum-based youth's education programs on sexual behavior (sex and HIV) anywhere in the world.	83 studies around the world including developed and developing countries.	Literature review.	Programs were effective across variety of countries, cultures and among youths and did not have negative effects. Programs reduced sexual behavior and increased condom and contraceptive use.

<p>Koenker, Hannah; Kilian, Albert; Hunter, Gabrielle; Acosta, Angela; Scanburra, Leah; Fagbemi, Babfunke; Onyefunafoa, Emmanuel; Fotheringham, Megan & Lynch, Matthew 2015. Impact of behavior change intervention on long-lasting insecticidal net care and repair behavior and net condition in Nasarawa State, Nigeria. <i>Malaria Journal</i> 14 (1), 469–499. Nigeria.</p>	<p>To assess how the durability of a insecticidal net is influenced by net maintenance, care and repair, and whether behavioral change interventions could impact on the average useful life of the net.</p>	<p>2 170 households in one state. Respondent 18 years or older.</p>	<p>Structured questionnaire.</p>	<p>Multiple channels of behavior change communication intervention was associated with improved attitude and with improved net condition. Behavior change intervention might change both attitude and behavior. Messages of net repair and care can easily incorporate into existing malaria platforms.</p>
<p>Leerlooijer, Joanne N.; Bos, Arjan E. R.; Ruiters, Robert A. C.; van Reeuwijk, Miranda A. J.; Rijdsdijk, Liesbeth E.; Nshakira, Nathan & Kok, Gerjo 2013. Qualitative evaluation of the Teenage Mothers Project in Uganda: a community-based empowerment intervention for unmarried teenage mothers. <i>BMC Public Health</i> 13 (1), 1–15. Uganda.</p>	<p>To describe the effects of the project on the social environment and on social and psychological well-being of unmarried teenage mothers in rural communities.</p>	<p>9 former teenage mother, aged 18–32. 14 represented community, parents and volunteers. Total 23 respondents.</p>	<p>Semi-structured interview.</p>	<p>Project contributed positive norms towards teenage mother and their future opportunities such as continued education, improved coping with motherhood and stigma, increased income generation. There was no change in opinion towards teenage pregnancy and early sex among community members.</p>
<p>Maro, Cyprian & Roberts, Glyn 2012. Combating HIV/AIDS in Sub-Saharan Africa: Effect of Introducing a Mastery Motivational Climate in a Community-Based Program. <i>Applied Psychology: an International Review</i> 61(4), 699–722. Tanzania.</p>	<p>To investigate whether mastery motivational strategies have effect on HIV education through sport.</p>	<p>Children and adolescent living in the poorest communities in Dar es Salaam. Peer coaches n=100 (boys n=75, girls n=25) Mean age of peer coaches 16,5 years. Three groups of children: group 1 n=252, group 2 n=228, group 3 n=164. Mean age of participants 13,7 years.</p>	<p>Questionnaire.</p>	<p>Intervention groups (group 1 and 2) received AIDS education. Children belonged to these groups reported greater HIV knowledge and positive attitudes and safe- sex intention compared to group of children (group 3) who did not receive additional education integrated to soccer play.</p>

<p>McClain Burke, Holly & Ambasa-Shisanya Constance 2014. Evaluation of a Communication Campaign To Improve Continuation Among First-Time Injectable Contraceptive Users in Nyando District, Kenya. <i>International Perspectives on Sexual and Reproductive Health</i> 40 (2), 56–67. Kenya.</p>	<p>To study the effect of the communication campaign to increase contraceptive continuation.</p>	<p>Women, aged 18–50 at Nyando and Mumias district. Preintervention total N=867, post intervention total N=1030.</p>	<p>Interview.</p>	<p>Exposure to the radio campaign was relatively high in intervention district. Discontinuation of contraceptive increased, because of received information about side-effects even though the aim the campaign was opposite.</p>
<p>Mtenga, Sally; Exavery, Amon; Kakoko, Deodatus & Geubbels, Eveline 2015. Social cognitive determinants of HIV voluntary counselling and testing uptake among married individuals in Dar es Salaam Tanzania: Theory of Planned Behaviour (TPB). <i>BMC Public Health</i>. 15 (1), 1–8. Tanzania.</p>	<p>To identify the social cognitive factors associated with acceptance of voluntary counselling and testing for HIV (HCT) among married people.</p>	<p>Married individuals living in Kinondoni district, aged 18 ≤. Total N=200, male N=98, female N=102.</p>	<p>Interview.</p>	<p>Nearly half had never used HCT. The strongest predictor to use of HCT was attitude followed by perceived behavior control.</p>
<p>Muchini, Backson; Benedikt, Clemens; Gregson, Simon; Gomo, Exnevia; Mate, Rekopantsewe; Mugurungi, Owen; Magure, Tapuwa; Cambell, Bruce; Dehne, Karl & Halperin, Daniel 2011. Local Perceptions of Forms, Timing and Causes of Behavior Change in Response to the AIDS Epideminc in Zimbabwe. <i>AIDS Behavior</i> 15, 487–498. Zimbabwe.</p>	<p>To summarize data from HIV/AIDS interventions and to assess local perceptions, when and why behavior change occurred and which factors brought change.</p>	<p>Women and men, aged 32–55. Total respondent 200.</p>	<p>Focus group discussion and interview</p>	<p>Economic decline was the reason for women to engage transactional sex, but poverty reduced men’s ability to pay for sex and to have multiple partners. Poverty reduced also consumption of alcohol. Only few respondents were able to link behavior change and behavior change message to each other.</p>

Muli, Irene & Lawoko, Stephen 2014. The relationship between Access to Mass Media and HIV/ AIDS Related Knowledge, Beliefs and Behaviours in Kenya. <i>Psychology</i> 5, 736–743. Kenya.	To describe the association between access to mass media and HIV/ AIDS knowledge, behaviour and beliefs.	Women in Kenya, aged 15–30. Total respondents 3909.	Questionnaire.	Most of the respondents listened to radio every week and generally exposure to mass media increased the knowledge of HIV among listeners. However, knowledge and beliefs of HIV/ AIDS was low among low educated women living in the rural area.
Mushi, Adiel; Schellenberg, Joanna; Mrisho, Mwifadhi; Manzi, Fatuma; Mbuya, Conrad; Mponda, Haji; Mshinda, Hassan; Tanner, Marcel; Alonso, Pedro; Pool, Robert & Schellenberg, David 2008. Development of behaviour change communication strategy for a vaccination-linked malaria control tool in southern Tanzania. <i>Malaria Journal</i> 7, 1–9. Tanzania.	To describe the development of a behaviour change communication strategy to support implementation of intermittent preventive treatment of malaria in infants.	Qualitative data: 52 focus group discussion and 8 interviews in ten villages for community members and health care workers. Quantitative data: health care workers in 136 health facilities in five districts.	Group discussion, in-depth interviews, questionnaire.	Behaviour change communication for health interventions need to be culturally and technically appropriate. Mixed methods approach can facilitate to develop a behaviour change communication strategy.
Mwale, Marisen 2009. Behavioural change vis-à-vis HIV/AIDS knowledge among adolescents. The case of some selected schools in Malawi. <i>South African Journal of Psychology</i> 39 (4), 460–467. Ebscohost. Malawi.	To assess adolescents' personal attitudes and beliefs of HIV/AIDS in proportion to cultural practices of communities.	From three secondary school total sixty student, 30 girls, 30 boys.	Questionnaire.	Retrogressive cultural practices and cultural silence about HIV/AIDS, stoicism towards death and misconstruing HIV/AIDS messages are alternative explanations for adolescents limited behavior change in relation to sexual behavior.

<p>Mwanga, Josphe; Mshana, Gerry; Kaatano, Godfrey & Chagalucha, John 2011. "Half plate of rice to a male casual sexual partner, full plate belongs to the husband": Findings from a qualitative study on sexual behaviour in relation to HIV and AIDS in northern Tanzania. <i>BMC Public Health</i> 11 (1), 957–966. Tanzania.</p>	<p>To investigate perceptions, attitudes and practices of sexually active people and to collect data for appropriate interventions against HIV/AIDS.</p>	<p>Fishing and non-fishing communities in rural Tanzania. Sexually active participants, aged 18–60. Semi structured interviews n= 96, focus group discussion=48.</p>	<p>Interview.</p>	<p>Mobility and migration were mentioned to be associated with the risk of HIV as well as transactional sex. Traditional practices such as death cleansing through unprotected sex as well widow inheritance increased the likelihood of HIV infection. Knowledge of condom was low.</p>
<p>Ntshebe, D; Pitso, JM & Segoby, AK 2006. The use of culturally themed HIV messages and their implications for future behavior change communication campaigns: the case of Botswana. <i>Journal of Social Aspects of HIV/AIDS</i> 3 (2), 466–476. Botswana.</p>	<p>To describe how behaviour change communication messages developed using local cultural contexts affected peoples' response of HIV/AIDS.</p>	<p>27 key informants (community leaders) and community members in 23 groups in nine area. Aged 15-49.</p>	<p>Interview</p>	<p>Cultural contexts in HIV/AIDS campaigns affect to the people response. Campaign was seen potentially effective and innovative socio-culturally-based public health communication system. However some changes were suggested, that the message of the posters were more congruent.</p>
<p>Ochako, Rhoun; Mbondo, Mwende; Aloo, Stephen; Kaimenyi, Susan; Thompson, Rachel Temmerman, Marleen & Kays Megan. Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study. <i>BMC Public Health</i> 2015, 1 – 9. Kenya.</p>	<p>To understand the drivers and to describe barriers to contraceptive uptake among young women.</p>	<p>Women in three different region. N = 34, aged 16 – 24.</p>	<p>Interview.</p>	<p>Knowledge and awareness of contraceptive among young women do not necessarily correlate to use of contraceptive. Influence of social network with their myths and misconceptions goes beyond individual'</p>

<p>Pappas-DeLuca, Katina; Kraft, Joan; Galvotti, Christine; Warner, Lee; Mooki, Maungo; Hastings, Phil; Koppenhaver, Todd; Roels, Thierry & Kilmarx, Peter 2008. Entertainment-education radio serial drama and outcomes related to HIV testing in Botswana. <i>AIDS education and prevention</i> 20 (6), 486–503.. Botswana.</p>	<p>To provide program feedback on audience reach, to evaluate acceptability of the program to the audience and assess preliminary indicators of the effectiveness of the program.</p>	<p>Households in 7 health districts including urban and rural areas. Total 807 respondent, aged 15–49.</p>	<p>Interview.</p>	<p>Increased duration of listening the program was associated with positive outcomes. Positive associations between exposure to the program and outcomes displayed as follows: stigmatizing attitude was lower, intention to have HIV test was stronger and talking to a partner about testing was higher.</p>
<p>Ragnarsson, Anders; Thorson, Anna; Dover, Paul; Carter, Jane; Ilako, Festus, Indalo, Dorcas & Ekström, Anna-Mia 2011. Sexual risk-reduction strategies among HIV-infected men receiving ART in Kibera, Nairobi. <i>AIDS Care</i> 23 (3), 315–321. Kenya.</p>	<p>To explore motivational factors and barriers to sexual behavior change among men receiving treatment against HIV.</p>	<p>Men visiting in AMREF clinic. N=20, aged 29 – 52.</p>	<p>Interview.</p>	<p>Fear of symptoms relapse was the main issue for sexual behavior change. Condom use was difficult if it has to be negotiated with partner. Societal expectations did not support sexual risk reduction strategies.</p>
<p>Richter, Kerry; Phillips, Steven; McInnis, Amy & Rice, Deborah 2012. Effectiveness of multi-country workplace intervention in sub-Saharan Africa. <i>AIDS Care</i> 24(2), 180 –185. United States.</p>	<p>To examine whether a multi-country workplace peer education HIV prevention program is effective in knowledge, attitudes and behavior.</p>	<p>Highly educated and skilled workforce working for the oil company in seven sub-Saharan countries. Baseline N=1289, post-intervention N=993. Male respondent 73%, female 27%.</p>	<p>Standardized questionnaire.</p>	<p>Peer education program had positive results towards attitudes and beliefs about condoms and fewer discriminatory attitudes towards persons living with HIV. General knowledge of HIV improved. Level of risk behavior did not reduce.</p>

<p>Ricotta, Emily; Boulay, Marc; Ainslie, Robert; Babalola, Stella; Fotheringham, Megan; Koenker, Hannah & Lynch, Mathew 2014. The use of mediation analysis to assess the effect of behavior change communication strategy on bed net ideation and household universal coverage in Tanzania. <i>Malaria Journal</i> 14 (1), 332–348. Tanzania.</p>	<p>To evaluate the impact of malaria social behaviour change campaign.</p>	<p>Households in three regions. Total respondent 1 142, men 260, women 882 aged 18–96.</p>	<p>Questionnaire.</p>	<p>There is a link between exposure to behavior change communication messaging and increased ownership of insecticide-treated net. Social behaviour change communication campaigns through community activities and/or media and/or community messaging increased the likelihood of household universal coverage with insecticide-treated nets.</p>
<p>Riehman, Kara; Kakietek, Jakub; Manteuffel, Brigitte; Rodriguez-Garcia, Rosalia, Bonnel, Rene; N’Jie, N’Della; Godoy-Garraza, Lucas; Orago, Alloys; Murithi, Patrick & Fruh, Joseph 2013. Evaluating the effects of community-based organization engagement on HIV and AIDS-related risk behavior in Kenya. <i>AIDS Care</i> 25 (Supplement 1), S67–S77. Kenya.</p>	<p>To describe the impact of community-based organisations (CBO) activity on individual and community level outcomes, including HIV knowledge, awareness and perceptions.</p>	<p>2 715 households in two provinces. Total respondent 4 378. In 8 communities 28 CBOs, 58 key informants.</p>	<p>Questionnaire. Three member from each household interviewed. Semi-structured interviews for CBOs.</p>	<p>High CBO engagement associated communities people’s greater knowledge of HIV transimission and prevention methods, consistent comdom use and greater likelihood to engage in community mobilization activities.</p>
<p>Scandurra, Leah; Acosta, Angela; Koenker, Hannah; Kibuuka, Daniel & Harvey, Steven. 2014. "It is about how the net looks": a qualitative study of perceptions and practices related to mosquito net care and repair in two districts in eastern Uganda. <i>Malaria Journal</i> 13 (1), 628–646. Uganda.</p>	<p>To assess the long-lasting insecticidal mosquito net care and repair after multi-platform behavior change communication campaign .</p>	<p>30 households in 15 districts in Uganda. Male n=10, women with or without any children n=10, women with children under 5 years old n=10. Age of respondents ≥ 18 years.</p>	<p>Interview.</p>	<p>Strong social norms about cleanliness and aesthetics determined maintenance of nets as well as protective factors. However, future behavior change campaigns should emphasize more preventive purposes.</p>

<p>Tenkorang, Eric & Maticka-Tyndale, Eleanor 2014. Individual and community level influences on the timing of sexual debut among youth in Nyanza, Kenya. <i>International Perspectives on Sexual & Reproductive Health</i> 40 (2), 68 – 78. Kenya.</p>	<p>To examine the relationship between individual and community variables and the timing of sexual debut.</p>	<p>8 183 students, aged 11–17, in 160 public school in different community. Female N= 4 037, male N=4 146.</p>	<p>Questionnaire.</p>	<p>Pressure from the different sources encouraged young people to sexual debut. Myths about HIV among youths associated with early sexual experience. AIDS death among community reduced the risk of sexual debut as well as programs at school linked to health.</p>
<p>Wight, Daniel; Plummer, Mary & Ross, David 2012. The need to promote behavior change at the cultural level: one factor explaining the limited impact of The MEMA kwa Vijana adolescent sexual health intervention in rural Tanzania. A process evaluation. <i>BMC Public Health</i> 12 (1), 788 –799. Tanzania.</p>	<p>To explain adolescent sexual health programme (MEMA kwa Vijana) outcomes by reviewing the process evaluation findings.</p>	<p>Nine village in rural Tanzania. 92 participants, 71 interviewed twice. Six group discussion of young villagers. Visits in the clinics. Total number of participant available in the previous study.</p>	<p>Interview, group discussion, simulated patients visit.</p>	<p>Intervention of the program failed because intervention did not operate in regard to culture. Social norms are important as well as beliefs and should be regarded. Preventive interventions of behavior change need to be addressed at multiple level simultaneously.</p>

