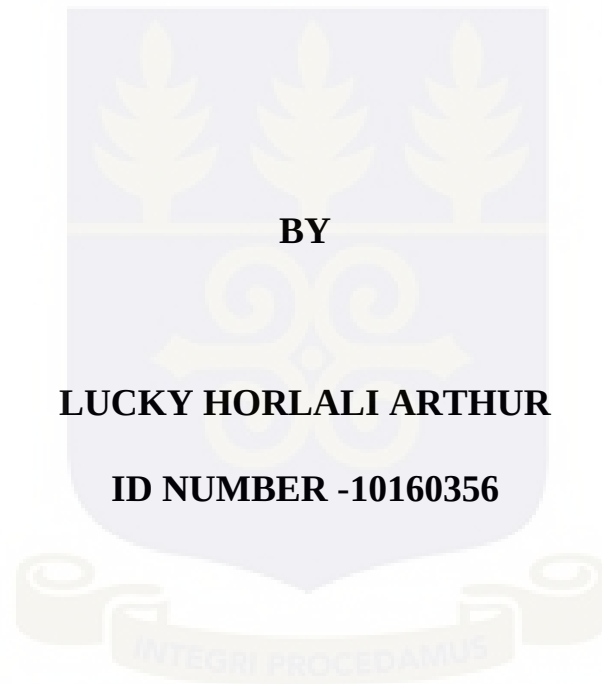


UNIVERSITY OF GHANA
SCHOOL OF COMMUNICATION STUDIES

**COMMUNICATION STRATEGY ON SICKLE CELL ANAEMIA IN
GHANA**



**A PROJECT WORK SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A
MASTER OF ARTS DEGREE IN COMMUNICATION STUDIES**

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DECLARATION

This project was carried out at the School of Communication Studies under the supervision of Dr. (Mrs.) Margaret Ivy Amoakohene. It is the result of my own research and references made have been acknowledged under bibliography.

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DEDICATION

This study is dedicated to my parents, Mr. and Mrs. Bakah.



ABSTRACT

The rationale for this project is to design a public health communication strategy for campaign on sickle cell anemia in Ghana. This project has been necessitated by the alarming rate at which the condition is occurring. It is generally estimated that 2% of children born in Ghana each year have a form of the sickle cell disease. This proportion is more than that of HIV/AIDS in the country (Ohene-Frimpong, 2011).

In recent times, due to technological advancement, it is possible to determine the sickle cell status of infants whilst still at a foetal stage, for parents to decide on what to do before the child is born. Despite this, Kootey-Ahulu (2011), a renowned physician consultant has stated that the best way of getting a generation free of the disease is to avoid intermarriage between two people with the disease or a trait of it.

The purpose of this study is to have an in-depth knowledge of public health campaign methods for awareness creation through a literature review. The information gathered would then be used as a guide to design a communication strategy to create awareness among Ghanaians who are between 25-40 years on sickle cell anemia. Some of the areas that would be looked into include the following: how to plan and execute effective health communication strategy, knowledge on sickle cell anemia disease, what has been done to educate and create awareness on it as well as its successes or otherwise. Ultimately, this study would result in a project that would device mediums appropriate for use in educating and creating awareness on sickle cell anemia disease in Ghana. It is expected that when implemented, the impact would result in a raise from 21% to 65% in the knowledge level among the target audience, within a year.

a. Study Goals

Three specific goals would be emphasized in this study:

- i) To gain an in-depth understanding of the use of public health campaign for awareness creation and education in general through interviews with experts.
- ii) To gain insight on the knowledge level among Ghanaians between the ages of 25-40 on the sickle cell disease by conducting a baseline survey.

Data gathered from the interviews and baseline surveys would then be used as a guide to assist in the design of an effective communication strategy. The information elicited would help in clearly defining who the target audience should be and what appropriate mediums and messages to use in order to raise the awareness level from 21% to about 65% within a year.

b. Assignments to Be Undertaken

- i) A detailed literature review on:
 - (a) Public health communication campaign methods
 - (b) Public health communication campaign on sickle cell anemia.
- ii) Conduct in-depth interviews with a communication expert, sickle cell condition advocate and a medical specialist in sickle cell disease.
- iii) Conduct a survey of unmarried people within the ages of 25 to 40 years.
- iv) Annotate at least 10 articles with bibliographic citations.

Information gathered from these three assignments would be used in the formative research to aid in drawing up an effective communication strategy. The knowledge gained would help outline work that has already been done in the area to be studied and its successes or otherwise in order to make an informed decision on an appropriate strategy to adopt.



CHAPTER ONE

INTRODUCTION

This chapter covers the definition of a communication strategy, background of the sickle cell disease and the Ghanaian situation. Current and past approaches used in communicating the disease were also discussed. The chapter ended with the purpose and the need for the strategy.

1.0 Definition of Communication Strategy

In *Communication Strategy* (2006), Communication Strategy is defined as a ‘Plan detailing how information and issues are presented in order that people will understand and respond to them’. Communication does not just happen. Effective communication requires an effective strategy, i.e. a coherent plan of action. To be effective, a communication strategy must take three factors into account, simultaneously:

- Goals and objectives;
- Operational constraints and imperatives i.e. things to do and things that cannot be done;
- Pertinent conditions in the environment.

According to Potter (1997), a Communication Plan is a ‘Written statement of what communication actions one will engage in to support specific organizational goals, the time frame for carrying out the plan, the budget and how to evaluate it’. Gregory (1996) indicated that a communication plan is also known as a ‘Public Relations Plan’. Fleet (2008) has also explained that a Communication Plan is sometimes called a communication strategy.

Hovland (2005) has acknowledged that drawing up a communication strategy is an art, not a science and there are lots of different ways of approaching the task. He stated that whether a communication strategy is designed for a specific project or for the same period as an organizational strategy, it should establish the following:

- Objectives
- Audiences
- Messages
- Tools and activities
- Resources
- Timescales
- Evaluation and amendment

The United States Centres for Disease Control and Prevention, CDC (2001), has defined health communication as the study and use of communication strategies to inform and influence individual and community decisions that enhance health. According to Arkin (2009), understanding what health communication can and cannot do is critical to communicating successfully. He said health communication is one tool for promoting or improving health. Changes in health care services, technology, regulations, and policy are often also necessary to completely address a health problem. He identified below what health communication can and cannot do.

Communication alone can:

Increase the intended audience's knowledge and awareness of a health issue, problem, or solution

- Influence perceptions, beliefs, and attitudes that may change social norms
- Prompt action
- Demonstrate or illustrate healthy skills
- Reinforce knowledge, attitudes, or behaviour
- Show the benefit of behaviour change
- Advocate a position on a health issue or policy
- Increase demand or support for health services
- Refute myths and misconceptions
- Strengthen organizational relationships

Communication combined with other strategies can:

- Cause sustained change in which an individual adopts and maintains a new health behaviour or an organization adopts and maintains a new policy direction
- Overcome barriers/systemic problems, such as insufficient access to healthcare.

Communication alone cannot:

- Compensate for inadequate health care or access to health care services.

- Produce sustained change in complex health behaviours without the support of a larger programme for change, such as components addressing health care services, technology, and changes in regulations and policy.
- Be equally effective in addressing all issues or relaying all messages since the topic or suggested behaviour change may be complex, the intended audience may have preconceptions about the topic or message sender, or the topic may be controversial.

The knowledge of what communication can and cannot do could serve as a useful tool in designing an effective communication strategy for sickle cell disease in Ghana. This is because it would offer opportunity for one to investigate and know the background of the situation being studied, what methods have been used, as well as their successes and failures. This would provide information on what is available and provide what is not available in order to adopt a holistic approach in developing the communication strategy.

Knowing what communication can do, will ensure that all ingredients needed to develop an effective communication strategy would be explored. These would include developing messages that would influence action, refute myths and misconceptions, reinforce the benefit of behaviour change and increase awareness and knowledge level among others about sickle cell disease. Knowing what communication cannot do would ensure that structures such as adequate healthcare facilities are provided so as to augment the communication strategy.

1.1 Background of the Sickle Cell Disease

For the purpose of this project, people living with sickle cell disease or the trait would be called sickle cell persons and SCD would be used to refer to the sickle cell disease or sickle cell anaemia.

According to Pub Med Health (2012), SCD is a disease passed down through families in which red blood cells form an abnormal sickle or crescent shape. Red blood cells carry oxygen to the body and are normally shaped like a disc. Sickle cell anaemia is caused by an abnormal type of haemoglobin called haemoglobin S. Haemoglobin is a protein inside red blood cells that carry oxygen. Haemoglobin S changes the shape of red blood cells. The red blood cells become shaped like crescents or sickles. The fragile, sickle-shaped cells result in less oxygen delivery to the body's tissues causing anaemia.

Konotey-Ahulu (1973) has also defined the SCD as the possession of two abnormal genes related to haemoglobin synthesis of which at least one is the sickle cell gene. It is inherited from both mother and father. The genotypes that constitute the sickle cell disease are SS, SC, SD, SE, S-Thal to mention but a few. The difficulty of the blood flow causes less oxygen to reach parts of the body, causing shortage of blood, severe pain and serious infection among others.

According to him, the sickle cell trait is used to describe a person who has inherited one normal haemoglobin gene (A) from one parent and one abnormal gene (S) from the other parent.

The genotypes that constitute the Sickle Cell trait are AS, AC, A-Thal, AD, AE, AF-higene among others.

The SCD is particularly common among people of African and Mediterranean descent. It is also found among people from South and Central America, the Caribbean, and the Middle East. Pumed Health (2012). The disease was first documented in Western medicine in 1910 by Dr James Bryan Herrick who diagnosed Dr. Walter Clement Noel, a native of Grenada. Noel was a dental student studying in the United States.

Nwoloko (1960) indicated that the disease was first documented in Africa in Sudan in 1926 by Archibald. According to Rhoads (1982), centuries before the physician Dr Herrick first met the rheumatic, anaemic and jaundiced black student in Chicago and diagnosed the disease for the first time, i.e. 1910, the people of West Africa knew the disease symptoms and gave it specific tribal names.

Konotey-Ahulu (1973) further added that 20% of the perfectly healthy populations of West African going about their daily business and actively involved in athletics and other farming activities are sticklers, i.e. (AS). This means that, they have traits of the SCD, but are not aware because they are usually fit and healthy.

1.2 Sickle Cell Disease in Ghana

Ghana, being part of the sub-Saharan zone in Africa has an alarming rate of the SCD incidence. According to Russell & Taylor (1934), the first official documentation of the disease in Ghana was in 1932. Konotey-Ahulu (1968) however maintained that Ghanaians are familiar with the SCD symptoms, and various ethnic groups have different names for the disease. Below are the various tribes and their respective names for the SCD.

Tribe	Name
Ga	Chwechweechwe
Ewe	Nuidudu
Twi	Ahontutuo
Krobo	Hemkom
Fante	Nwiiwii

Konotey-Ahulu (1991) pointed out that the situation is very startling and it is estimated that 2% of children born in Ghana each year have a form of the disease. The situation is worsened by the fact that it has no cure and people who are affected usually have a short lifespan. The recurrent pain caused by the disease could interfere with many aspects of the patients' lives including education, employment, and psychosocial development to mention but a few.

He noted that in 1963, only one case was documented at the haemoglobinopathy clinic in Accra. However by 1970, there were 1,697 cases recorded at the Korle Bu teaching hospital alone. According to Konotey-Ahulu & Rangeland (1969), Ghana, at the time, had the highest incidence of the haemoglobin C trait in the world. Most of such cases are concentrated in the northern region of the country. In an interview with Dr Ogyaadu, at the Sickle Cell Clinic at the Korle Bu

Teaching Hospital on the 20/01/2013, she confirmed that there is still a high percentage of the haemoglobin C trait in the northern region of Ghana to date.

Konotey-Ahulu (1992) has stated that despite the high incidence of the disease, not much is known among the Ghanaian populace about the SCD. He further explained that because the only way to get the disease is by genetic inheritance, the only way to curb its occurrences is to avoid giving birth to such children as much as possible.

The first step towards achieving this objective is to discourage intermarriage among people with the disease or traits of it. This could be done by creating awareness of the SCD and increasing the knowledge level among people yet to marry. Recent figures available at the Institute of Clinical Genetics, Korle-Bu revealed that between January to October, 2012, there were 9,750 visits to the clinic alone for medical services. Out of this number, 238 were new cases of SCD.

1.3 Current and Past Approaches to Communication of the Disease.

In order to understand the methods used both in the past and at present, the activities of the major players engaged in awareness creation as well as the fight against SCD in Ghana would be discussed.

Ghana Institute of Clinical Genetics

The Institute of Clinical Genetics was established in Korle Bu in 1974 under the supervision of Dr F.I.D Konotey-Ahulu. According to Dr. Selase Ogyaadu, a medical doctor at the Institute of Clinical Genetics, the main aim of the clinic was to provide medical services for people living with the disease, educate them on the complications of the disease and offer counselling services

to enable them live healthy normal lives. The institute also has the mandate to create awareness of the SCD by educating the Ghanaian populace on the disease.

Dr. Ivy Sey, a medical expert at the clinic, indicated that even though the clinic has plans to reach out to the general public, not much has been done in that aspect due to financial challenges. According to her, the knowledge level among the Ghanaian populace is quite low. She also stated that SCD persons who have high awareness level about the disease and financially sound to assist do not want to be associated with the disease due to stigmatization. On daily basis, a nurse is assigned to visit patients in their homes. These are patients who live within Korle Bu and its environs. The visit is done to follow up on patients to monitor their health, offer advice and administer medication, where necessary.

She also mentioned that the institute has a program called “Need to Know”. It is an educational program based on the basic information about the SCD. Occasionally, invitations are received from media houses to give talks on the disease. The program has however not been very effective due to inadequate funding.

It was not until last year, 2012 that Vodafone sponsored a week long program on talks on the sickle cell disease in selected media houses presented in the various Ghanaian dialects on major television stations, radio stations and the print media. Some of the television stations included TV 3, Ghana Television, e-TV and Metro TV. The radio stations were Joy FM, radio GAR among others.

In 2011, an outreach program was rolled out by the institute in partnership with the Sickle Cell Association of Ghana and the Ministry of Health. Their main targets were the first cycle institutions. The institute believed that it is important to ‘catch these children young’ before they grew into adulthood in order that they could make informed decisions.

During the 2011 World Sickle Cell Day, which is on the 19 of June every year, the occasion was used to reach out to three first cycle schools. The pupils were educated on the basics of SCD, counselled and freely screened for the sickle cell disease and traits. The schools were within the Korle Gornor vicinity. People who tested positive were referred to the clinic for further attention.

During the presentation, posters, placards, flyers among others were used to help the pupils remember the information. Currently, the Centre’s focus is on the first cycle institutions though preparations are underway to involve the second cycle institutions as well.

Sickle Cell Association of Ghana

The Association was formed with the assistance of the Ghana Institute of Clinical Genetics. It is an independent not for profit community based organization run by members of the community for the benefit of members of the sickle cell community. It is an association of sickle cell persons dedicated to improving the quality of life of persons with the sickle cell disease. Established in May, 2004, it serves as a mouthpiece for sickle cell disease persons. They work in collaboration with the sickle cell clinic and other stakeholders to raise funds to assist in the creation of awareness of the SCD.

Members normally meet on the last Thursday of every month. This has been replicated in the other hospitals. During these meetings which often do not involve medical practitioners, members meet to share their concerns as well as seek clarifications from the medical team to enhance their lives. The services of clinical psychologists are available to counsel members on how to live their lives to the fullest.

Sickle Cell Condition Advocates

An organization that has augmented the efforts of the sickle cell clinic is the Sickle Cell Condition Advocates (SICCA). Established in Ghana in 2007 by Ms Charlotte Owusu, the Sickle Cell Condition Advocates (SICCA) is a non-governmental organization which has been very instrumental in awareness creation about the sickle cell disease as well as advocating for people living with the condition.

In collaboration with the Ministry of Health, SICCA has established three (3) sickle cell clinics and counselling units in the three Northern regional capitals and hopes to do same in all the other regions without the clinics. It is the first time a government has taken steps to take up a sickle cell disease advocacy project to develop and manage treatment, educate, counsel and advocate for people to do a pre-conception screening.

SICCA has rolled out plans to create awareness in schools and colleges as well as offer social services among others. The organization has already visited some selected second cycle and tertiary institutions where education on SCD has been given.

The Sickle Cell Foundation of Ghana

The pilot project for the Sickle Cell Foundation of Ghana was started in 1993, but was registered as an NGO in April, 2004. It was initiated by Professor Kwaku Ohene-Frempong, Director of the Comprehensive Sickle Cell Centre of The Children's Hospital in Philadelphia. It is the first of its kind in Africa and is mainly engaged in screening of new born babies for the SCD. Some of the services they engage in include testing for the SCD, counselling, clinical services, psychosocial, and research programs in sickle cell disease and other related conditions throughout Ghana.

The organization's method of disseminating information includes seminars, workshops, and awareness programs to help bring the facts, against the myths of sickle cell disease to all families in Ghana and Africa at large. The foundation believes that quality information and resources are vital for the survival of many babies and children of parents who are keen to do all they can to see their children grow into independent adults.

1.4 Why the Need for Communication Strategy for Sickle Cell Disease in Ghana

First of all, the need for this communication strategy is necessitated by the alarming rate at which the disease is occurring i.e. annually 2% of babies born in Ghana have the sickle cell disease. This is equivalent to fifteen thousand children according to Ms Charlotte Owusu, founder of the Sickle Cell Condition Advocates.

The situation is worsened by the fact that 1 in 3 of Ghanaians has either a sickle cell trait or haemoglobin C trait, i.e. they are carriers and unaware of their SC status because they are healthy and do not have the disease.

This has very serious implications in that, when two carriers (SCT trait) marry and decide to have children, for every pregnancy, there is a 25% probability that the offspring will inherit an abnormal gene from both parents, causing the disease. The probability of having a child with the disease increases to 50% when someone with the SCD gets married to one with a SC trait. This genetic probability is demonstrated by Professor Kootey-Ahulu through the KANAD dice. This genetic dice could be found at the last page of this project work.

Secondly, unlike decades ago, most of the children born with the disease are now surviving due to technological advancement. These surviving children remain vulnerable to exacerbations of the disease and its associated complications mentioned earlier. As a result, SCD has assumed a major medical problem. The implication is that, these surviving patients would spend most of their productive lives in hospitals and clinics, not forgetting the prayer camps, shrines and other health facilities. As indicated by Dr. Selase Ogyaadu of the Korle Bu sickle cell clinic, the disease is not fully covered by the National Health Insurance Scheme. This is because the frequent visits to the hospitals, characteristic of SC persons is presumed to be a drain on the scheme's resources.

The last but not least is the fact that, despite the efforts made by the major players and organizations in the fight against SCD, most of their approaches are patient centric rather than general awareness creation. As a result, the information on the SCD as a whole is not adequate to raise the needed knowledge level among the Ghanaian populace to drastically curb the high incidence of the SCD.

1.5 Target Audience

In order to reduce the incidence of SCD in Ghana, there is the need to focus on a target audience who could help achieve this goal. The target audiences were categorized into primary, secondary and tertiary targets. However, only the primary target audience would be discussed under this subheading.

First of all, people yet to be married are an important factor to consider because they are most likely to give birth. This is because according to Penn & Corbis (1998) marriage is nearly universal in Ghana, and couples are expected to have children. This is because the family is the basis of social organization, the main source of security in old age and the primary caretaker of the young.

The age for the above category of people, who are the main target was set between 25-40 years. This is because despite the fact that legally, the age of marriage in Ghana is 18 years, the median age at first marriage for women aged 25-49 has been on the increase since 2003 according to the 2004 National Population Council of Ghana's report i.e. NPC (2004). This delay in marriage has been attributed to education which comes with modernization.

1.6 The Purpose of the Strategy

Based on the baseline survey which indicated a low knowledge level among the populace resulting in the high incidence of the disease, it is imperative that a nationwide awareness creation campaign is undertaken.

The purpose of this strategy was to create awareness about SCD and increase the knowledge level from 21% to about 65% among the target audience through the design of an effective communication strategy. This is because the baseline studies undertaken by the researcher indicated that the knowledge level among this target group was quite low, though most of them have heard about the SCD and have some knowledge about it. The focus of the strategy was to increase awareness and knowledge level from 21% to about 65% among persons who are within marriageable age in Ghana as a step towards reducing the high incidence of the sickle cell disease in the country.



CHAPTER TWO

INTRODUCTION

In order to design an effective national communication strategy for SCD, there is the need to form an empirical basis upon which to device the right message for the target audience. This chapter covered the methodology used for the strategy, why it was used and the results analysed. The analyses formed the basis for the communication strategy. The primary target group for which the communication strategy was aimed at consists of people between the ages of 25 to 40 years who are not married.

2.0 Methodology

It is the process used to collect information and data for the purpose of making business decisions. The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information. (businessdictionary.com)

Data Collection is an important aspect of any type of research study. Inaccurate data collection can impact the results of a study and ultimately lead to invalid results. Mainly we have two types of data collection methods which are Quantitative methods and Qualitative methods.

Qualitative data collection methods play an important role in impact evaluation by providing information useful to understand the processes behind observed results and assess changes in people's perceptions of their well-being. Could be used to improve the quality of survey-based

quantitative evaluations by helping generate evaluation hypothesis; strengthening the design of survey questionnaires and expanding or clarifying quantitative evaluation findings. These methods are characterized by the following attributes:

- they tend to be open-ended and have less structured protocols (i.e., researchers may change the data collection strategy by adding, refining, or dropping techniques or informants)
- they rely more heavily on interactive interviews; respondents may be interviewed several times to follow up on a particular issue, clarify concepts or check the reliability of data
- they use triangulation to increase the credibility of their findings (i.e., researchers rely on multiple data collection methods to check the authenticity of their results)
- generally their findings are not generalizable to any specific population, rather each case study produces a single piece of evidence that can be used to seek general patterns among different studies of the same issue.

Qualitative data collection methods vary using unstructured or semi-structured techniques. Some common methods include focus group discussions, individual interviews, and participation/observations. The sample size is typically small, and respondents are selected purposively.

Quantitative data collection methods rely on random sampling and structured data collection instruments that fit diverse experiences into predetermined response categories. They produce results that are easy to summarize, compare, and generalize. They may include the following:

- Experiments/clinical trials.
- Observing and recording well-defined events (e.g., counting the number of patients waiting in emergency at specified times of the day).
- Obtaining relevant data from management information systems.
- Administering surveys with closed-ended questions (e.g., face-to face and telephone interviews, questionnaires etc). (http://www.achrn.org/quantitative_methods.htm)
- Self-completion questionnaires. A series of questions that the respondent answers on their own. Self-completion questionnaires are good for collecting data on relatively simple topics, and for gaining a general overview of an issue. Questionnaires need to have clear questions, an easy to follow design, and not be too long
- Structured interviews much similar to a self-completion questionnaire, except that the questions are asked by an interviewer to the interviewee. The same questions are read out in the same way to all respondents.

Telephone interviews are less time consuming and less expensive and the researcher has ready access to anyone on the planet who has a telephone. Disadvantages are that the response rate is not as high as the face-to- face interview but considerably higher than the mailed questionnaire. The sample may be biased to the extent that people without phones are part of the population about whom the researcher wants to draw inferences. Quantitative data collection methods are much more structured than qualitative data collection methods.

(<http://people.uwec.edu/piercech/researchmethods/data%20collection%20methods/data%20collection%20methods.htm>)

In designing the communication strategy for sickle cell anaemia for this project, the researcher made use of the triangulation methodology. Triangulation is broadly defined by Denzin (1978:

291) as ‘The combination of methodologies in the study of the same phenomenon’. Thus, both quantitative and qualitative methods were employed in gathering data for this project.

2a. The survey

First and foremost, the quantitative method adopted was the survey and the instrument used was the questionnaire. This method was used to know the knowledge and awareness level of the target audience on sickle cell anaemia in order to design a strategy to suit its information needs. It is anticipated that this would eventually lead to a raise from 21% to 65% on its knowledge level within one year, if properly done.

The main target audiences for this project were categorized into three groups based on their socio-economic and educational levels. The first and second groups which comprised the educated and semi-literates were served with self-completion questionnaires. For the third group (illiterates) however, data was elicited through structured face -to -face interviews, using the same questionnaires. This was because they were illiterates who could neither read nor write. This enabled the researcher to establish rapport with potential participants and therefore gain their cooperation. These interviews yielded the highest response rates in the survey research because it enabled the researcher to collect the data immediately instead of leaving it for a later date.

Stratified sampling was used to select the primary target audience. In order to address the issue of awareness creation about sickle cell disease, the researcher identified and selected 45 people from the same age group with varied educational and socioeconomic backgrounds. There were

26 females and 19 males. Respondents were selected from two different settings i.e. Makola Central market in Accra and the University of Ghana, Legon.

The target group consisted of people between the ages of 25 to 40 years who are not married. This age was selected because most Ghanaians on the average marry within this age bracket according to the report of the National Population Council, i.e. NPC (2004), despite the legal age of 18 years. Another important factor was the fact that most people who marry in Ghana are expected to give birth as indicated by Penn& Corbis (1998).

Another factor that was considered in selecting the target group was educational background. Ghana currently has a population of about 24,658,823 according to the Ghana Statistical Service (2010). Out of this number, 12,633,978 are females and 12,024,845 males.

Another report on the population data analysis by the Ghana Statistical Service (2005) indicated that the illiteracy rate in Ghana is 42.6 percent, whilst 16.4 per cent are literate in English only, 2.5 percent are literate in a local language only and 38.1 per cent are literate in both English and a Ghanaian language.

The institute for statistics of the United Nations Educational, Scientific, and Cultural Organization, UNESCO (2010) defined adult literacy rate as the percentage of people aged 15years and above who can, with understanding read and write a short, simple statement on their everyday life.

For the purpose of this strategy, the educational backgrounds of the respondents were categorized into the literate, semi-literate and illiterates forming the first, second and third groups. These three groups with varied educational backgrounds were selected because it was representative of the Ghanaian population. In order to give equal opportunity to each target group, 15 respondents were selected from each group. The sample size of 45 was selected because of the cost involved in administering the questionnaire.

The first group which comprised the highly educated were selected from the University of Ghana campus. To ensure that respondents were students at the University of Ghana, Legon, questionnaires were administered to students at the Faculty of Law, Social Sciences at the Jones Quartey lecture halls and at the Biochemistry department, just after students had closed from lectures. The questionnaires were collected the next day during the first lecture for the day through their class representatives.

The second and third comprising the semi-literates and the illiterates were selected from the central market at Makola in Accra. This is because Makola, a commercial centre in Accra has a cross-section of people with a wide range of educational backgrounds. People from these varied background represented a cross section of Ghanaians.

A survey questionnaire was used as the primary data collection instrument for the study. For the purpose of easy analysis, closed ended questions were used. Questionnaires for the first group (educated) were self-administered, whilst the ones for the second group (semi-literate and the third group, (illiterates) were done through face to face interview. This was because some of the respondents were unable to read and write and had to be guided using Ghanaian local dialects.

The researcher engaged the services of an assistant, Ruby Owusu, a professional teacher who could speak three of the main local languages in Ghana, mainly Dagbani, Nzema and Krobo to help with interviewing the respondents who might not understand Ewe, Ga and Akan. In order not to change the meaning of the questions, the researcher had to revise with the assistant two days before the day of interview at the Makola Central market in Accra.

2b. In-depth interview

Qualitative method was also used in the gathering of data. The instrument used was an interview guide used to conduct in-depth interview with selected people. This method was used in order to gain an in-depth knowledge on the various method used in designing a communication strategy, why they are used and its successes and failures. It was also used to gain information on what efforts have been made by the health specialist, advocates and the various associations among others, to create awareness and increase knowledge level among the Ghanaian populace. This is equally important information needed so as to build on what is already done, to save time and cost.

Ruth Marfo, a communication expert at Vodafone was interviewed. The purpose was to seek a practical perspective on the ingredients necessary for developing effective communication strategy. Two medical experts in the field of sickle cell disease at the Institute of Clinical Genetics, Korle-Bu, Dr Ivy Sey and Dr Selase Ogyaadu were also interviewed. This was to have firsthand information of the situation on the SCD and their input in creating awareness on the disease. Charlotte Owusu, a sickle cell advocate was also interviewed as well.

Aside the primary data, secondary resources in the form of articles and published literature were also used.

2.1 Baseline Survey, Goals and Situational Analysis

2.1. a. Baseline Survey

A baseline study is a descriptive cross-sectional survey that mostly provides quantitative information on the current status of a particular situation - on whatever study topic - in a given population. It aims at quantifying the distribution of certain variables in a study population at one point in time. It involves the systematic collection and presentation of data to give a clear picture of a particular situation as it relates to the following: What? Who? Where? When? Why? How? A baseline normally covers only a sample of the population. (FAO,2013).

‘What’ would look at what information the project would want to elicit from the target audience. In this particular case, it is to know the target audience’s level of awareness, knowledge, opinions and attitudes to the sickle cell disease.

‘Who’ refers to who the primary target and secondary audiences for this survey is/are? It also addresses who carries out the survey. For this survey the target audiences are people between the ages of 25-40 who are unmarried. The baseline survey would be carried out by the researcher herself.

‘Why’ answers the reason for the baseline survey. This particular project would be undertaken by the researcher to understand why there is prevalence of sickle cell disease in Ghana and the knowledge level of the target audience.

‘When’ would address when the survey should be distributed. In this project the survey would be distributed at the initial stage to ensure that the right foundation is set. It would identify major issues and provide insights into what needs to be included in the communication strategy for the Sickle Cell Disease.

‘How’ refers to the form the survey would take. The study for this project would be presented in a paper questionnaire form to save time and money.

2.1. b. Goals of the Baseline Survey

Results from this baseline study would serve as a means of verifying the appraisal results in a statistical manner. Such a result is more convincing and could provide justification to policy makers for the necessity of mounting a communication program for a specific problem or project.

Findings from the survey could act as a catalyst for the target audience on the most appropriate action to take for the success of the project. It could be used to shape the communication strategy by assisting to further segment the priority interaction groups, sharpening communication objectives, and focusing content of media materials.

Additionally, the result could reflect the spread and use of various media among the study population and their trusted and preferred media source. This would serve as a guide in selecting the appropriate media to be used in the designing the communication strategy. Again, the result could be generalized and used for communities with similar characteristics. The baseline survey

would assist in establishing which aspect of the project needs more focus than others. For instance in designing a communication strategy for Sickle Cell anaemia in Ghana, the study would show the knowledge level of the target population and indicate where there is an information gap to be filled which are either non-existent or inaccessible. In this case, project output would focus more on what is lacking.

Since it is only appropriate to compare ‘apples with apples’ and not ‘apples with oranges’, the study would form the basis for evaluation at the end of the project. Thus it’s the same tool that would be used before, during and after the project. This would reduce time and cost during evaluation.

The baseline study would be helpful in assessing the impact of the project on the target audience. For instance the knowledge level of the target audience elicited during the baseline survey and after could inform the researcher on the extent of impact of the project. It would serve as a benchmark for all future activities, where researchers could refer for the purposes of making decisions on other projects.

Ultimately, the survey could be useful in the hunt for donor / partnership because most often, it is one of their requirements since it’s an integral part of monitoring and evaluation.

2.1. c. Situational Analysis

‘If you don't know where you're going, any path will get you there’. Lewis Carroll. (n.d.).

BrainyQuote.com. Retrieved May 15, 2015, from BrainyQuote.com Web site:

<http://www.brainyquote.com/quotes/quotes/l/lewiscarro165865.html>

The point is to know better than before, which path you are taking and why. This statement explains the essence of the situational analysis.

Situational Analysis is an assessment of the current health situation as compared to the needs of the country and is fundamental to designing and updating national policies, strategies and plans. (WHO, 2015)

It gives a picture of where one stands now including one's communication goals, knowledge on target audience, and its strengths/resources as well as its challenges. It answers questions on what can be done about the situation that can help create a communications plan to address it and look at behaviours that needs to be influenced.

In designing this communication strategy, the researcher examined the current situation of SCD prevalence in Ghana, thus approximately fifteen thousand babies are born annually with The disease. Additionally, 1 in 3 of Ghanaians has a trait of the disease and unaware of it. Past and current approaches to communicating of the disease to create awareness among Ghanaians were also considered.

The information derived from the above helped to identify who the primary and secondary target audiences should be, why and how to make appropriate messages accessible to them. It also defined what convinces the target audience to influence their decision. A thorough situational analysis would help avoid repeating what has already been done wrongly, and clearly define where the project is heading. This ultimately leads to efficiency and minimizes cost whilst exceeding

expectation of a project.

During the survey conducted by the researcher on the 20th of March, 2012, at the Makola Central market in Accra, and on the 25th of March 2012, on the University of Ghana, Legon campus, almost all respondents interviewed had heard about Sickle Cell Disease. Among the first group of educated people, almost 98% of them knew about its transmission routes, symptoms, management and average lifespan of sickle cell persons. Within the semi literates, though most of them, 79% knew about the transmission routes, about 80% neither knew about the other aspects such as its symptoms nor management. Among the third illiterate group however, only 47% knew about the transmission routes of the disease whilst 20% said that it was spiritual and the rest had no idea.

As to whether sickle cell persons have significant health problems, all the respondents 100% in the first (Educated) group said yes, whilst among the second (semi-literate) group, 89% said yes and among the last (illiterate) group, 79% responded positively. Within the first group, (educated) 83.3% believed that carriers could pass on their gene to their children, whilst 16.7% said otherwise. Respondents in the second group (semi-literates) 51.2% of them believed that carriers could pass on their gene to their children whilst 48.8% said it cannot be transferred.

On the question of whether SCD is curable, 56% of the second group said it was curable whilst 44% said it was not curable. However the third group had 72% who said it was curable whilst 24% said it was not curable. However the rest of the 4% were not certain on any. Among the first group however, all respondents, i.e. 100% said there was no cure for the disease.

Respondents were asked of their sickle cell status. In the first group of (educated) only 24.7 % respondents knew their sickle cell status whilst 75.3% did not know theirs, though 97% agreed that it's important for one to know his/her SC status before marriage. The rest did not want to know their SCD status since this might break their heart in a relationship. They would rather go ahead and marry rather than checking to know their SC status. In other words, they would rather follow their heart.

Among the second group (semi-literate) however, the respondents who knew of their sickle cell status were 15% though 65% agreed that it was important for one to know his/her status before marriage.

In the last group (illiterate), 95% admitted they did not know their sickle cell status whilst the rest said they knew their status. However, 70% agreed on the importance of knowing one's status before marriage. The rest agreed that once a person is in love, nothing should stop them from getting married. Secondly, once a person is in good health, it was not possible to have the disease.

Asked how sickle cell persons should be treated, in the first group (educated) 33% believed that sickle cell persons should be treated with love and care whilst, 40% said they should be treated as sick people whilst 27% said they should be treated as normal beings. Among the second group (semi-literate) 45% believed SC persons should be treated a sick people whilst those who said they should be treated with love were 15%. The rest said they should be avoided since one could be infected with the disease. In the last group (illiterates), people who believed SCD persons

should be treated as delicate and sick people were 68%, whilst those who believed they must be treated as normal were 30%. The rest said they should be treated with love and care.

From the analysis above, it is quite evident that there is an urgent need for awareness creation among the target audience with special focus on understanding the disease and the various aspects of it. The need for one to know his/her sickle cell status is imperative since people with the SC trait may have no significant sickness but could pass on the disease to their children if the right knowledge is not given.

2.2 Challenges

Some of the respondents at the Makola market where majority of the respondents were interviewed saw the researcher as a government agent who was monitoring those evading taxes. As a result, some of them avoided being interviewed.

Respondents selling wares on the street at Makola saw the exercise as a government project and were rather raising their concerns for government's assistance. Even though the researcher explained to the respondents what the exercise was about, some were still uncertain and so were not ready to cooperate with the exercise.

CHAPTER THREE

COMMUNICATION STRATEGY

This chapter dealt with the strategy itself. The need for the communication strategy was necessitated by the fact that there was inadequate information on the SCD despite the high incidence of the disease. The chapter identified the goals and objectives of the strategy, the target audience, message and the media strategy. It also discussed the project time line and the financial frame work for the communication strategy.

3.1 Goals

The overall goal of the strategy is to develop a national health awareness and education campaign strategy to raise awareness on sickle cell anaemia among people between the ages of 25 to 45 years from three socio-economic backgrounds. The campaign would focus on raising knowledge about what SCD is, its transmission routes, sickle cell traits, the importance of testing to know one's sickle cell status before marriage, its diagnosis, implications as well as its prevention.

Donovan (1995) examined the 'Centre for Disease Control and Prevention's Framework for Health Communication and concluded that the target population must first be defined before drawing out communication objectives in planning and developing health communication campaigns. This communication strategy however adopted the CDC's framework for health communication by first drawing the objectives before defining the target population.

3.2 Objectives of the Strategy

- i, The objective of the communication strategy is to raise the awareness level on sickle cell disease in Ghana among the primary target audience from 21% to 65% within one year. The target population are unmarried persons of sound mind who are between the ages of 25 and 40 years.
- ii, Discourage marriage between persons affected by SCD or have traits of it .

Provision of appropriate information for the target audience is one of the priority tasks of this communication campaign. The strategy would involve engaging the services of health professionals, teachers, government officials, parents among others to achieve its objectives.

3.3 Identification of Target Audience

As a way of designing the communication strategy, the first step after stating the goals and objectives of the strategy was to identify the target audience. Identifying the target audience was to determine the appropriate messages as well as the channels to use to reach them. The primary target population which the strategy focused on was unmarried persons between the ages of 25 to 40 years. There were secondary and tertiary targets as well.

The identification of the target audience is an important aspect in the design of a communication strategy. This is because according to Cartor et al (1979) in a research on “The Study of Media Effectiveness for Sickle Cell Disease Education in a Rural Community’, it came up that populations differ in character and therefore there is the need to be treated differently. Identifying the target audience and grouping them into subpopulations defined by demography,

geography, socio-economy among others would enhance the strategy, by developing what would meet their distinct needs.

Another study by Kincaid et al (1996) who researched on ‘The Impact of The Mass Media on Vasectomy Promotion Campaign in Brazil’ found out that one’s level of education of the target population plays a role in the increased awareness on the information on vasectomy.

In this communication strategy, the target audiences, selected according to their educational background, were the educated, semi educated and illiterates forming the first, second and third groups respectively. For the purpose of this strategy, the educated group would refer to people who have at least junior secondary education. They include people, who have gained admission to junior secondary, senior secondary, vocational, technical, training colleges, polytechnics and universities among others. They are people who can read and write in the English language. For the purpose of convenience, students on the University of Ghana, Legon campus would be used for the baseline study.

The second group which is the semi-literates are persons who have had at least up to primary six education and the illiterates are people who do not have any form of formal education. Their background difference somehow had an effect on the way they perceived sickle cell disease and persons living with the disease.

English would be used as a medium of communicating with the first group who are the educated respondents. The illiterates, the last group would however have Ghanaian local languages as the medium of communication. Four selected commonly spoken Ghanaian dialects would be used.

These languages would include Akan, Ewe, Ga and Dagbani. Semi-literates, the second group would partially benefit from both the English language for the first group as well as the four local dialects used for the illiterate group.

Secondary and tertiary target audience, are persons whose support would be needed in influencing the primary target group. These audiences include the Ghana Midwives Association of Ghana, Ghana Medical Association of Ghana, Ghana Pharmaceutical Association, The Ministry of Health, Ghana Health Services, and Parliamentarians, Nursing training institutions among others. It is important to meet and discuss the objectives of the campaign in order to win their support.

Engagement with policy makers such as parliamentarians would be to lobby and mount pressure on government to initiate a national premarital SCD screening policy or bill to be passed into law in the long term. The purpose of these meetings is to make these stakeholders understand how much their support is needed as policy makers to achieve a Sickle Cell Free Ghana, in the long run. This is confirmed by a research on 'Public Awareness of Sickle Cell disease in Bahrain' by Arrayed et al (2010). He recognized among other things that legislation support is very vital in a move towards increasing awareness of sickle cell disease in the country of study, ie Bahrain.

The media would be engaged to gain attention to the concerns in the strategy through to the campaign stage. The high incidence of SCD would be the focus of the discussion and the need to discourage marriage between people with the disease or traits of it. Sound bites which are very brief and quotable statements, visual images, and social math, which would explain statistical data on the SCD in Ghana and the need to curb its occurrences would be made use of.

Advocacy according to Labonte (1994) is the act of “taking a position on an issue, and initiating actions in a deliberate attempt to influence private and public policy choices”. In order to maintain and pursue the goals of the strategy even after the one year communication campaign, it is important to engage in advocacy in various forms.

One month before the commencement of the actual campaign, there would be regular and continuous engagement with major stakeholders such as the media, Ghana Midwives Association of Ghana, Ghana Medical Association of Ghana, Ghana Pharmaceutical Association, The Ministry of Health, Ghana Health Services, Parliamentarians, Nursing training institutions among others, to discuss the objectives of the campaign in order to win their support as partners.

These engagements would be done individually with the respective stakeholders and would be for various reasons such as getting them to buy into the overall goal of the strategy and solicit their support for the successful implementation of the campaign.

First of all, during the meeting, the campaign implementer would seek to explain to these people the importance and urgency of the campaign taking into consideration the low knowledge level among the Ghanaian populace despite the alarming incidence of the disease. It would let them know what to expect during the launch and the expected outcome at the end of the campaign.

The development of a coalition would be critical to the success of the advocacy effort. This would involve teaming up with other groups with shared goal and objectives to make their voices heard. These would include health professionals, Non-profit organizations on SCD, Association of Sickle Cell persons, Ghana Sickle Cell Foundation, Sickle Cell Advocates among others.

3.4 Message

During the baseline research conducted by the researcher on the 20th of March, 2012, at the Makola market in central Accra and 25th March, 2012 at the University of Ghana, Legon campus, it came up that even though every respondent seemed to have heard about the disease, their knowledge on its transmission, relating to sickle cell persons and other vital information were lacking. This information informed my choice of message for each target group, based on their unique needs. These messages would be different because of the varied needs of the target audience. Most importantly, the message must be relevant to all target audiences, trustworthy and devoid of exaggeration. The insights from the annotated articles would be adopted where necessary.

In the study by Haywood et al (2008) on the Association of Provider Communication with trust among adults with SCD, it became clear that adults were more convinced of information that is trustworthy and devoid of exaggerations. This information is very relevant to this strategy because the target audience is made up of adults between the ages of 25 to 40 years.

In the study by Roger et al (1998), on 1% or Less: A Community-Based Nutrition Campaign”, the researchers found that the success of the campaign was due to the use of a single message of change. That is, they highlighted on the change from consumption of high fat to low fat milk and focused on the health benefits of low fat milk. They attributed the failure of the previous campaigns to the use of multiple aspects of the message to deliver to the same target audience. They were of the view that a single message of change is more effective in bringing about a change in behaviour.

In designing the message for the target audience, only one aspect of would be focused on for each target population, since there are three distinct populations within the target audience. Only one message would be designed for each group among the target audience. Ohuma et al (2009) in the 'Evaluation of Measles Vaccine Campaign by Oral-fluid Survey in a Rural Community' also attributed the success of the campaign to the use of effective messages.

For the educated, messages would include emphasis on knowing their sickle cell status. This is because only 24.7% of those interviewed knew their SC status, though more than 95% agreed that knowing one's SC status is important. Their level of education would also allow them to read and know more about the disease if information is made readily available.

Another research by Kincaid et al (1996) on the impact of Media Effectiveness on vasectomy promotion campaign in Brazil revealed that the use of one single message resulted in the success of the campaign. They were of the view that the use of one message ensured consistency and reinforced the message. It also standardized the information given to its target audience. This would be effectively used as a guide for the central messages for the various groups, though there would be a variance on emphasis specific to each group need.

Their research result would be adopted in this strategy to ensure its effectiveness. During the launch of the campaign, a central theme **“KNOWYOUR SICKLE CELL STATUS NOW!!”** would serve as a constant reminder to all the target audience. This would equally be useful for the second group who can speak and read some amount of English. The same theme would be translated into the four commonest Ghanaian languages i.e. Akan, Ewe, Dagbani and Ga for the second and third groups.

For the second and third groups, the message would focus more on the transmission routes, importance of checking for one's status, relating with sickle cell persons, as well as demystify the misconception that the disease is transmitted through spiritual means, physical contact and particular foods. This is because the research revealed that some believe SCD has a root cause in spirituality.

The study on the second group showed that sickle cell could be gotten through physical contacts and that there is no need to check for their status, when one is very healthy. Most of them also (75%) said that SCD persons must be avoided. The key message for this group is that, the only route for SCD transmission is hereditary and no other means and that, persons with the sickle cell disease should be treated with care and love.

The third group is made up of illiterates. During the research, it was found out that about 20% of respondents said SCD could be transmitted through spiritual means. About 50% also did not see the need for checking one's Sickle cell status. The key message for this group would be that sickle cell disease has only one route of transmission which is hereditary and could be prevented

TABLE 1

MESSAGE GROUP	APPROPRIATE MESSAGES	KEY	SUB MESSAGES
EDUCATED	BE WISE,GET TESTED		STOP SCD GET TESTED NOW
SEMI LITERATE	BE WISE,GET TESTED		LOVE YOUR LIFE, LOVE YOUR FUTURE.
ILLITERATE	BE WISE, GET TESTED		1.SCD IS HEREDITARY 2. KNOW YOUR STATUS FOR FREE

3.5 Media Strategy

Arrayed et al (2010) conducted a research on ‘Public Awareness of sickle cell disease in Bahrain’ and found out that the media played a crucial role in creating awareness of the SCD in Bahrain.

In another research by Li et al (2009) on ‘Mass Media ad HIV/AIDS’, it was discovered that exposure to mass media sources of HIV/STD information was significantly related to HIV

knowledge and less stigmatizing attitudes towards PLHIVA”. They also established positive correlation between exposures to mass media related to HIV/AIDS and attitudinal and behavioural changes. This confirms the crucial role of mass media education in influencing knowledge attitude and behaviour.

The study also acknowledged that the level of trust in the information sources played a significant role in the success of the campaign. This means that subpopulations must be reached by their trusted sources of information on health.

It is quite apparent that exposure to media over the years has proven to influence behavioural changes. What is important however is to know which type to use for a particular audience.

A study by Cartor et al (1979) to determine the ‘Effectiveness of Mass Media In a Rural Community’ revealed that populations varied in the extent to which they were reached by the message through a peculiar medium. The study also ensured that the medium of communication was within the reach of the target audience before adopting it for each subpopulation.

Kincaid et al (1996) researched on the ‘Impact of the Mass media on Vasectomy Promotion Campaign in Brazil’ and showed an increase in knowledge and awareness of vasectomy in the country of Brazil.

The media strategy would address the three groups making up the total target population. Ghana Television (GTV) and Unique FM would be used as the major medium for reaching out to the target audience. This is because they have the widest reach among the target audience and almost all of the target audiences interviewed during the baseline study, have access to radio and /or TV.

Unique FM has affiliate stations in all the regions and would be very useful in reaching the target audience.

Another study by McDivitt et al (1993) on 'The Impact of the Healthcom Mass Media Campaign of Timely Initiation of Breastfeeding in Jordan' revealed that mass media played an important role in knowledge level and behaviour change. The findings suggest that the mass media intervention had impact on the timely initiation of breastfeeding. The fact that some particular groups of people were not reached is an indication that, the media source must be available to all subpopulations to achieve the maximum benefit.

Results from the baseline study indicated that, people in the first group of educated people had their most reliable source of information on health from health personnel, but the most consumed form of medium was the internet. On radio, Joy Fm was selected as the most listened to.

For this group, a special website would be designed where information on SCD could be easily accessed with a forum which seeks to answer all questions posed by visitors to the site.

Health talks on SCD on TV 3 reinforced by adverts and TV and radio documentaries on SCD would also be run on Joy FM, TV 3 and Ghana Television for this target group.

Once in a month, health talks would be organized on the various training tertiary institutions including training colleges, bible schools, polytechnics and university campuses where health specialists would educate students on the SCD. Leaflets with basic information on SCD would be freely distributed to students after each talk show.

The same open forums would be organized for people in the minor and major market centre at least once in a month for the second group. Health professionals who are fluent in the four commonest Ghanaian languages would be engaged. These languages would include Akan, Ewe, Ga and Dagbani. Here, public address systems would be used for this purpose alongside spinners to attract the attention of the target audience. These activities would be augmented with television adverts and documentaries that would run on Net2TV and Ghana Television. The reason for this arrangement is that, majority of the people in the second group indicated that Net 2's Health talk show by Oheneba Gyase was their favourite program on television. Oman FM was seen to be the most listened to for this group from the baseline study conducted so adverts would equally be run on this station. Ghana television ranked second in the most viewed television after Net 2 TV.

The research conducted revealed that most of the people in the third group, made up of illiterates, chose Peace FM as their most preferred source of information on general issues including health i.e. (92%). Net2 TV was the most preferred medium on health issues on TV, i.e. (89%). Television, radio adverts and documentary would be effective for the third group, using the four selected Ghanaian languages. Health discussion with health specialist in SCD, once a week on NET 2 TV by Oheneba Gyase would be helpful since almost 80% of the people mentioned him as a reliable authority on health.

3.6 Other Strategies

a. Billboards

The campaign would make use of billboards because of its ability to give high exposure. Studies by Duntul et al (1993) as well as by Papas et al (2004) revealed that bill boards are cost effective,

due to their high exposure, frequency and ability to target specific ethnic groups. Another study by Shooler (2003) on the geographic placement of bill boards revealed that bill boards targeted in neighbourhoods, depicting models of the same race/ethnicity as the target audience and symbolizing social and other rewards are seen as desirable to the target group. Well-designed billboards with the inscription, '**KNOW YOUR SCD STATUS NOW**' would be displayed at vantage positions on the various training and tertiary campuses.

The effects of billboards are such that many people read them many times daily and over a long period. They would be use for all the target groups because apart from the ability to read the necessary informational, it also comes with attractive visuals which are very appealing and could communicate some form of information for those in the second and third group who are unable to read.

b. Group Presentation

Small group presentations in training colleges and religious gatherings by health professionals would be organized. Health professionals who share the same faith would be used for the various religious groups. During the presentations, especially in the religious groups, leaders would be encouraged to include SCD test as a prerequisite for marriage counselling, leading to marriage.

c. Free Screening

Free screening would be organized at all presentation sites such as tertiary institutions, market squares, religious grouping to mention but a few. Advanced forms of testing devices would be used to facilitate same day results after blood samples have been taken.

d. Health Fairs

Here exhibition on SCD materials in forms of documentary, magazines, leaflets among others would be displayed. This would be organized during national events such as the annual International Trade Fair from the 27th of February to 06th of March, 2014. Medical specialists would be available for free counselling and to answer questions from people who visit the designated stands.

e. Music and Arts events

Organize a fundraising during a musical and art event to help set up special labs where free testing for SCD could be carried out.

f. Road show

A road show would be organized, a week after the official launch, using national service personnel from the various Medical Schools and Nursing Training Colleges in the country. During the road show, handbills on the basics of SCD would be distributed freely to the general public.

g. Organized Walk

Organized walk to focus on SCD awareness creation, would be undertaken on the 11 of June, 2014. This would be planned to coincide with the World Sickle Cell Day. The focus would be on the consequences of intermarriage between people with SCD or the trait. In collaboration with the Ministry of Health and the Sickle Cell Foundation of Ghana, a theme for the annual celebration would be coined. It would be '**Love yourself, save your future**'.

h. Popular Personality

The researcher would select two nationally recognized personalities as ambassadors for SCD. They would be engaged in delivering campaign messages during programs like Old School Reunions and other social events. The emphasis would be on knowing ones SC status before starting a relationship.

i. Dramas

In a study by McDivitt et al (1993) on ‘The Impact of the Healthcom Mass Media Campaign of Timely Initiation of Breastfeeding in Jordan’, dramas were seen to be very useful in influencing behavioural change among used the target audience, who were mainly women. These other non-traditional methods were use because not all the information on the SCD could be communicated through the TV, radio and the print adverts.

j. Workshops

Organize workshops for stakeholders such as health works, the media and professionals among others where issues on SCD would be discussed and suggestions elicited from members.

k. Sponsorship and Brand Association Activities

Solicit for sponsorship from Vodafone Ghana to organize joint programs on SCD awareness creation. A football gala would be organized between healthcare professionals and members of the SCD advocacy groups.

I. Press Release

Press releases would be circulated to all media contacts. It would consist of no more than one page and would include the name and contact information of the media contact person on a particular issue of the strategy. Other strategies that can be used to engage the media include letters to the editors of newspapers and journals, interviews with reporters, the staging of media events and public service announcements.

3.7 Project Time Line

The project would have a time line of one year. One month would be for preparations, nine months for the campaign and two months for evaluation. Preparations would commence from August 2013, whilst the campaign would be from September 2013 to May 2014 and the evaluation will start from June 2014 and end in July 2014.

There shall be an official launch of the campaign on the 1st of September 2013 at the National Theatre. Campaign adverts would start running on the various media houses a day after the launch. The preparatory stage will include:

- Outsourcing the development of adverts for radio, television and the print media to Ogilvy Ghana limited and following up to ensure it is ready within six weeks.
- Outsourcing of documentary development to NAFTI and following up to ensure it is ready within six weeks.
- Providing information to the public concerning the upcoming campaign

- Writing and distribution of letters to speakers at the launch and professionals for forums
- Writing of letters to the various media houses and following up on them to confirm their coverage for the various programs in connection with the campaign. It would also ensure that time slots for the various health programs are confirmed and amounts involved are paid for.
- Writing letters to the Medical and Nursing training schools and follow up to confirm their participation in the communication campaign.
- Correspondence through e-mails and telephone calls to contact and follow up on companies assigned for the various collaterals and other engagements. These materials would be developed for distribution during the campaign.
- Various strategies would be used to prepare for contact with the media including the development of a Fact Sheet, that briefly conveys the message to be made; a Source List, or roster of health professionals and other popular figures who are available to speak competently on SCD; Talking Points, which is a listing of the main messages to be conveyed; a Question and Answer Sheet, which addresses in question and answer format the most commonly raised issues associated with the matter to be discussed; and a Press List, comprising all media outlets in a specific geographical area.

3.8 Financial Framework

Below are the rates of media usage (all in Ghana Cedi) during a nine month period nationwide campaign. A 10% amount was added on to the production costs to cater for inflationary rate during the implementation period.

TABLE 2
PRODUCTION BUDGET

Item	Company	Amount (GHC)	+10%(GHC)
Production of 1 minute TV advert		13,860(5)	76,230.00
In five languages i.e. English, Akan, Ewe, Ga and Dagbani	Ogilvy Ghana Limited	69,300.00	
Production of radio advert In five languages i.e. English, Akan, Ewe, Ga and Dagbani		5,940(5) 29,700	32,670
Production of print advert (3 copies)		2,970	3,267
Production of 15 min. Documentary In five languages i.e. English, Akan, Ewe, Ga and Dagbani	NAFTI	29,700 (5) 148,500	163,350
Printing of souvenirs (10,000 pieces each of pens, key holders and leaflets)	Appointed Time Printing	30,000	33,000

Total	280,470	308,517

TABLE 3
MEDIA AIRTIME – RADIO

Media House	Joy Fm	Unique FM	Peace FM	Total for all three Media Houses/month
Activity	60 seconds advert	60 seconds advert	60 seconds advert	
Unit Price (GHC)	311	275	350	
No. of Times/day (GHC)	6	6	6	
No. Times/week (GHC)	5	5	5	
Total/day (GHC)	1,866	1,650	2,100	
Total/week (GHC)	9,330	8,250	10,500	
Total/months (GHC)	37,320	33,000	42,000	112,320
Total for 8 months (GHC)				898,560

TABLE 4
MEDIA AIRTIME – TELEVISION

Media House	Activity	Unit Price (GH¢)	No. of Times/day	No. of times/week	Total/week (GH¢)
GTV	60 seconds advert	565	3	4	6,780
TV 3	60 seconds advert	675	2	4	5,400
NET 2	60 seconds advert	465	3	4	5,580
CRYSTAL	60 seconds advert	390	2	4	3,120
Total /week					20,880
Total/month					83,520
Total for 8 months					668,160

TABLE 5
PRINT – NEWS PAPERS

Paper	Activity	Unit Price (GH¢)	No. of Times/week	Amount/week (GH¢)	Amount/month
Daily Graphic	Full Page Coloured	2,970.22	3	8,910.66	35,642.64
The Mirror	Full Page Coloured	3,580.00	4	14,320.00	57,280
Daily Guide	Full Page Coloured	2,000.00	2	4,000.00	16,000
Total				27,230.66	108,922.64
Total for 8 months					871,381.12

TABLE 6
DOCUMENTARY

Media House	Period	No. of Times/month	Unit Price (GH¢)	Amount/ 8 months (GH¢)
GTV	10 minutes	2	5,650	90,400
T V 3	10 minutes	2	10,260	164,160
Net 2 TV	10 minutes	2	28,560	136,960
JOY FM10 minutes	10 minutes	2	6,898	110,368
Total for 8 months				501,888

Grand Total for Media = GH¢ 3,248,506.12

TABLE 7
OFFICIAL LAUNCH

Item	Cost Involved (GH¢)
Venue	3,000
Venue Decoration	2,500
Banners – 20 for Universities and Polytechnics	6,000
Refreshments	12,000
Total	23,500

TABLE 8
ROAD SHOW

Item	Cost Involved (GHC)
Hiring of Trucks and Fuel	3,500
Refreshment	4,000
Brass Band	3,000
Total	10,500

OTHER COSTS

Cost of Setting up website GHC 3,000.00

Internet Subscription for 12 Months GHC 65 X 12 = GHC 780

Phone Top up Cards GHC 1000.00

Allowances for health professionals (Tertiary institutions) GHC 1000 x 100= GHC 100,000

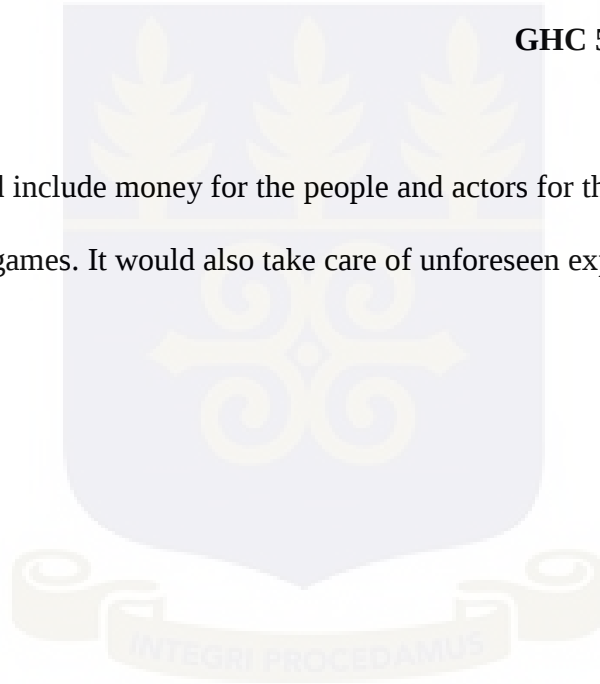
Allowances for health professionals (TV, radio) GHC 500 x 100= GHC5,000.00

Allowances for volunteers for road shows GHC 12,000.00

Allowances for health professionals (engaged for religious and other social groups)	GH¢ 200 x 100 =2,000.00
Transportation allowances for professionals	GH¢ 15,000.00
Equipment for SCD screen (\$30,000.00)	GH¢ 90,000.00
Accessories for screening (syringes, cotton balls, mentholated spirit, test tubes etc	GH¢5,000.00
Synovate to access the effectiveness of the campaign	GH¢ 10,000.00
Video and photography (for exhibition, library adverts, reports)	GH¢ 25, 000.00
Decoration for all venues for the campaign (Danny's Deco)	GH¢ 50,000.00
Equipments and PA systems for all programs	GH¢ 12,000.00
Transportation allowances for the journalists invited for all programs (media coverage)	GH¢ 15,000.00
Refreshment for all programs	GH¢15,000.00
Production of magazines and leaflets for distribution (5,000)	GH¢ 25,000.00

Studio rentals, production of CD	GHC 20,000.00
Allowance for implementation officer and 3 assistants (Transportation, accommodation, feeding and others)	GHC 150,000.00
Miscellaneous	GHC 20,000.00
GRAND TOTAL	GHC 575,780.00

The miscellaneous would include money for the people and actors for the drama, refreshment for football players and fun games. It would also take care of unforeseen expenses.



CHAPTER FOUR

4.0 MONITORING AND EVALUATION OF THE STRATEGY

This chapter focused on the mechanisms used to monitor and assess the effectiveness of the communication strategy. It assessed the success or otherwise of the campaign against the objectives of the strategy within the nine months of aggressive campaign.

Monitoring and evaluation of the campaign took two months.

4.1 Monitoring

The scope of monitoring the campaign would be done by the following:

- a) Random monitoring by the campaign implementing officer and team to listen in to spots on the various media houses.
- b) The services of Synovate, a research company would be engaged to professionally monitor the adverts sent to the various media houses and check if they have featured or aired the various adverts and documentaries as agreed between the campaign implementer and the media company. This monitoring exercise would be done every two months during the campaign to ensure everything is done as planned and is having the needed effect. The exercise would also help readjust the strategy as and when necessary to enable it achieve its ultimate goal of raising the awareness level among its target audience from 23% to 65% to have a close proximity to a SC free generation.

c) Monitor the number of visits to the various hospitals and clinics monthly during and after the campaign period.

d) Check the number and content of questions asked during phones-in programs, the quantity of issued and distributed copies of publications and promotional materials, public presentations among others.

e) Regular checks with the religious bodies and other social organizations to monitor how the campaign has influenced their decisions on premarital screening.

4.2 Evaluation

Evaluation included an assessment of the achievement or otherwise of the communication strategy's objectives along the following lines.

a) Administer the same questionnaires used for the baseline survey, to the same target audience/group. Their response to these same questions would determine whether their awareness level and knowledge level has increased to about 65% or otherwise by the communication campaign. Additionally, questions on exposure to media and campaign messages, with details on events that occurred during the campaign would be included.

b) Check the awareness level among the primary target audience, during and after the campaign. These are people between the ages of 25-40 years who are not married. The assessment would be done by dedicating the last month of the campaign to phone-in programs and question time. After a presentation, half an hour would be dedicated to questioning on the basics of the SCD to

assess the knowledge level of the target audience. These would be done for all programs including presentations on the various schools and campuses, markets, social gatherings, talk shows, religious gatherings and other avenues used during the campaign. Questions from the target group would be indicative of the effect of the strategy. It would determine their awareness level.

c) The question that would be used to measure the knowledge level about the SCD would be coded on whether or not it is important to know one's SC status before marriage.

d) Transmission routes would be coded as having a correct or incorrect knowledge about the SCD, by answering to multiple questions on the possible ways of getting the disease.

e) Another way to verify the knowledge level among the target group would be one by examining their level of media exposure and campaign message. This would be done by confirming how many have listened in or watched the adverts and or documentaries on SCD during the campaign. Two or more times within a week would mean high exposure to media message and one or one within a week would mean less exposure to media and campaign message.

f) Ask questions on a popular personality (ambassador) for SCD and the message given by him/her in relation to the SCD. Getting this question right would mean one's level of exposure to the message on the SCD.

g) Questions would be asked on description of a image associated with the SCD advert o radio/TV /documentary.

h) Questions on messages they remember about SCD and the jingle that follows or precedes an advert/documentary.

i) Check the average monthly visits to the various clinics and hospitals for SC tests six months preceding the campaign, during and up to six months after the campaign. This exercise would be done to check if the number has increased during and after the campaign. This would show the increment of the knowledge level among the target audience from 21% to 65% or more as specified in the project's objective or otherwise. A sustained or increment in the number of tests up to six months after the campaign would point up whether the campaign had a temporary effect on its target audience or not.

People who come in for the test would be asked of their source of information that motivated them to take the test. This would help determine whether the campaign had influence on their decision or not.

Evaluation would be done at the end of the communication campaign, to serve as an important tool for a follow up campaign and future communication strategies.

CHAPTER FIVE

CONCLUSION

This chapter shaped the concluding part of the communication strategy on SCD. This communication strategy was divided into five chapters, each preceded by an introduction. The strategy was designed taking into consideration the overall goal of ensuring a sickle cell free Ghana by raising the awareness of the disease among the target audience from 21% to about 65%.

The first covered different definitions of SCD, the history as well as the various methods used to create awareness about the disease. The major players in awareness creation of the disease and the purpose of the strategy were also discussed.

In order to effectively address the varied communication needs of the critical group, there was the need to undertake a baseline study. The second chapter addressed the methodology used in the baseline study, the goal of the baseline study, situation analysis of the results and the challenges encountered.

The third part of the strategy dealt with the strategy itself. It involved indicating the goals and objectives of the strategy, identifying the target audience, the message and media to be used for each. Other activities included group discussions, free screening, health fairs, music and art events, organized walks and the use of bill boards among others. The timeline for the strategy was also discussed. This was a one year nationwide campaign commencing in August,

2013 through to July, 2014. The financial framework which covered the budget for the entire strategy was also included.

The focus of the strategy was on awareness creation on SCD to increase the knowledge level among the target audience. To ensure that the communication strategy works, it came with comprehensive communication campaign activities.

Chapter four incorporated how the campaign would be evaluated and monitored to measure the effectiveness or otherwise of the campaign. This would be done against the objective of the campaign to raise awareness level among the target audience from the current 21% to about 65%. This is because the baseline survey conducted revealed that there is a level of awareness but it was quite low.

This chapter formed the concluding part of the strategy and outlined the step by step approach to ensure that every ingredient necessary for effective strategy is inculcated into it. It is important to note that there is only one transmission route for the disease and that is through hereditary. This means that the only way to prevent such occurrence is to discourage intermarriage between people with the disease or traits of it. The only way to ensure this is to know one's SC status before marriage in order to make informed decisions.

It is hoped that if strictly implemented, this communication strategy would help achieve its main objective of raising the awareness level of the SCD among its target audience from 21% to 65%.

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APPENDIX 1

ANNOTATED ARTICLES

**INDEPENDENT STUDY ON PUBLIC HEALTH COMMUNICATION CAMPAIGN ON
SICKLE CELL ANEMIA IN GHANA**

6.0 Study of Media Effectiveness for Sickle Cell Anaemia Education in a Rural Community

Citation

Cartor, A. B., Cliton, M.M., Larisey, L., & Murphy, E. (1979), '*Study of Media Effectiveness for Sickle Cell Anaemia Education in a Rural Community*'. Journal of the National Medical Association, Volume 71, No (11), Pages1055-1057

Brief Summary

In this article, the authors attributed the increase in sickle cell anaemia cases to lack of awareness and interest in it compared to other diseases which have had greater public interest. They made reference to a study by Lane and Scott (1969) which revealed that the knowledge level among adults was about 31% in a sample of about 1457. Only 17% of parents with sickle cell children had heard of the disease and none knew it's hereditary, a situation resulting in psychological harm and job lost. Only a small number knew that it's predominant among blacks.

According to the authors, in order to determine the relative effectiveness of the various mass media (television, radio, newspaper) in delivering an educational message about sickle cell anaemia, a study was conducted in Orangeburg County, South Carolina .The focus was on different subpopulations. It came out that subpopulations varied in the extent to which they were reached by the message through a particular medium.

The sample size was made up of 81% females and 19% males. They were 62% whites and 38% blacks. 40% of the sample was under 45 years and 60% were over 45 years. Questionnaires for the educational programme first established the respondent's opportunity to receive the message on sickle cell anaemia through the particular medium before administering it appropriately.

The authors made use of Public service announcement in all media and ensured that placement and timing of the messages on sickle cell anaemia in each media were adequate enough to enable its effective consumption by the audience.

They pointed out that in a predominantly rural community, the newspaper medium is most effective when a message is aimed at the entire population in an effort to increase public understanding and job related problems connected with the sickle cell anaemia trait. They also found out that radio is most effective if message is aimed at the black community to promote a screening program and Television is most likely to be effective in reaching city dwellers than those living in the rural areas.

It is important however to note that the fact that newspapers were effective in reaching the rural folk in the study might not apply to the Ghanaian situation since most of its rural folk might neither be able to read nor afford to purchase the newspaper.

Relevance to Study

First of all, Sickle Cell Disease is particularly common among those whose ancestors come from sub-Saharan Africa, Saudi Arabia, India, and Mediterranean countries such as Turkey, Greece

and Italy. (Pub Med, 2012). With this information in hand, Ghana is no exception. The situation is worsened by the fact that nearly 40% of its population is illiterate. There is therefore an urgent need to increase the knowledge level among its citizens on the disease.

The study is also insightful in showing the need to know what medium to use to reach the various subpopulations defined by demography, geography, socio-economic among others, so the general populace could be reached. This means that in planning media usage in a campaign for sickle cell anaemia education, one must take into account the different characteristics of the subpopulation at which the message is targeted.

It means that no single medium can be very effective for educating people on the disease in Ghana. It's imperative to do a baseline study to know the appropriate medium to use for each subpopulation.

The fact that whites were more than the blacks in the sample goes to emphasize the fact that there is the need to educate not only the vulnerable, but also the strong in the society. This is to ensure public acceptance of the victims, to avoid being discriminated against.

Critique

The fact that 60% of the target audiences were above 45 years of age is an indication that the study might be missing its focus on curbing the high incidence of the sickle cell disease. This might not be appropriate for my project because people who fall within this age range are mostly people who are married and already have children. This means that an appropriate channel should be adopted to target those below 45 years.

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6.1. Mass Media and HIV/AIDS in China

Li, L., Wu, Z., Lin, C., Guan, J. M.D., Rotheram-Borus, M.J. & Lu, Y. (2009 July-

August). *Mass Media and HIV/AIDS in China*. National Institute of Health. Volume 14, No 5, 424–438.

Brief Summary

In this article, the authors stated that mass communication has progressed from creating awareness, transmission routes and methods of prevention, behavioural change, through treatment to care and support. Moreover, Research has shown a positive correlation between exposure to mass media related to HIV/AIDS and attitudinal and behavioural changes.

Based on the above knowledge, the authors in this article sought to identify the sources of HIV information for the Chinese population, what information source they trust most, examine their association with HIV transmission knowledge and stigmatizing attitude towards people living with HIV/AIDS (PLWHA).

A sample size of 3,716 mainly market workers in Fuzhou city, China formed the target audience. Data was collected between 2005 and 2007 in a face to face survey. Multiple regression models were used to describe correlations among respondents' HIV/STD information sources and the other variables.

The study revealed that mass media sources such as TV programs, newspapers and magazines were identified as the channels for HIV information than interpersonal sources, such as friends and service providers. The study further found out that the crucial role of mass media in China in disseminating HIV related knowledge is due to the limited access through interpersonal channels as a result of long-standing social taboos. Bu & Liu (2004).

The study also found a correlation between exposure to multiple sources of HIV information, where at least one source is mass media and HIV knowledge with less stigmatizing attitude towards PLWHA. It came up that 36% of the participants demonstrated their trust in HIV/STD information from service providers, though 21% actually received information from them.

The discrepancies between trusted and actual reporting of information source could be due to the limited utilization of health care services in health information diffusion. Zhao et al (2008).

The authors also found out that exposure to mass media sources of HIV/STD information was significantly related to HIV knowledge and less stigmatizing attitude towards PLHIVA, confirming the crucial role of mass media education in influencing HIV knowledge and attitudes, especially in the Chinese setting where HIV knowledge is low and social stigma is a big problem.

Another finding worth noting was the low knowledge level among the participants on HIV transmission. Only 37% of the study participants knew about the actual transmission routes. Approximately one third of the participants thought that HIV could be transmitted by mosquito bites. This finding is consistent with the still widely held misconceptions in Chinese society about how HIV is transmitted. This situation may be attributed to the focus of the Chinese media on overly general HIV-related issues, neglecting the importance of HIV transmission knowledge and perceptions of stigma. Previous studies by Meundi et al (2008) showed that having HIV transmission knowledge is associated with less stigmatizing attitude towards PLWHA. This means that the Chinese media and health educators have to revise the content and quality of HIV communication, to include details of HIV transmission. When this is done,

it would go a long way to help erase misconceptions of transmission via casual contact and thus help reduce stigma.

Relevance To The Study

First of all, the study, though on HIV/AIDs has relevance to my project, in that they are both public health issues on the health information front. HIV/AIDS like sickle cell anaemia is on the increase despite efforts to curb its occurrence.

The use of mass media for education campaign on health issues need not be over emphasized. However the fact that the authors found TV as the most effective medium for education campaign might not be same for sickle cell anaemia in Ghana. The study's emphasis on mass media selection would help in media planning for my project work. The fact that there is increase in the HIV/AIDS pandemic despite the massive use of the media is an indication that, there is the need to conduct a baseline study to know what media would be appropriate for a particular target before embarking on a campaign. It would help in selecting the right message content for the public on issues such as transmission routs and demystify the misconceptions about sickle cell anaemia.

The study would also inform my studies on maximizing the use of service providers who are professionals instead of using secondary sources in educating the Ghanaian populace. The acknowledgment of people's trust in service providers in HIV/AIDS campaigns in this study would offer me the opportunity to merge interpersonal sources with mass media by, for example, involving service providers in television campaigns to increase the level of

trustworthiness of the Sickle cell anaemia information and education. I believe that when well combined exposure to both mass media and service provider messages is likely to yield the best results.

It would also be important to evaluate the process and outcomes of the media campaigns and understand the way the audiences make use of the campaigns they are exposed to.

Critique

The authors could also not determine whether and how mass media exposure could lead to more interpersonal communication about HIV/STD in China. Data for the study was collected from only one geographic location in China, and with only market vendors at Fuzhou so it can neither generalize its findings to the whole of China, different population nor other geographic areas. Finally, the study relied entirely on self-report data, for which issues of recall bias can always be raised, which could affect the accuracy of the result.

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6.2 Effectiveness of a Community-Based Oral Cancer Awareness Campaign: Cancer Causes & Control

Citation

Papas, R.K., Logan, H., Tomar. & Scott, L. (Mar, 2004) '*Effectiveness of a Community-Based Oral Cancer Awareness Campaign*': *Cancer Causes & Control*, Springer, Volume 5, No. 2, pages.121-131. Stable URL: <http://www.jstor.org/stable/3554067>. Accessed: 12/10/2011 10:57

Brief Summary

Despite the high incidence of oral cancer reported in America each year, with five to ten survival rates of between 56-41%, the disease is understudied. In this study, the researchers studied the effectiveness of a Community-Based Oral Cancer Awareness Campaign and the purpose was to provide a first systematic evaluation in the United States of a community-based oral cancer awareness campaign in changing public knowledge, attitudes and behaviour related to oral cancer.

The awareness campaign was organized by the American Dental Association in an effort to reverse the situation. They adopted outdoor campaign since studies by Donthu et al (1993) has revealed that billboards could be cost-effective due to its high exposure frequency and ability to target specific ethnic groups . Its success is based on the fact that the campaigns are designed to appeal to specific behaviours, characteristics, norms, beliefs and customs of the targeted segment. The authors referred to the study by Schooler and Altman (2001) in dealing with the geographic placement of billboards. The study revealed that billboards targeted in neighbourhoods, depicting model of the same race/ethnicity as the target audience, and symbolizing social achievement or other rewards are seen as desirable to the target group, such as companionship, romance and sociability. These strategies are based on Bandura's social cognitive theory, which suggests that individuals can learn behaviours in which the rewards are

modelled or only illustrated.

A baseline data was collected in Miami-Dade prior to the campaign. Billboards were developed and tested in focus groups with consumers and dentists. The messages on the billboards were same, but used two designs. One with the full face of the model and the other with a close up shot of the model's tongue.

A six-month outdoor advertising campaign, such as billboards, bus boards, taxi tops was launched in November 2001-March, 2002 to encourage oral screening. Respondents were people at least 18 years who could speak English or Spanish.

They used a non-equivalent control group design and random-digit-dialling methods to examine billboard effectiveness and pre- and post-billboard impact between intervention and control counties in adult probability samples in Florida, USA. The results revealed that the Florida billboard campaign had limited success in increasing public awareness.

The researchers assigned the limited success of the campaign to lack of a theoretical underpinning. They stated that “The absence of a theoretical model has been associated with reduced campaign effectiveness because it does not utilize mechanisms or mediating variables associated with community behaviour change such as community readiness, attitudes, knowledge or skills”. Another factor was the apparent neglect of the campaign to target high-risk groups.

Relevance to study

Its relevance is based on the fact that both my project and the current study are health related and a desire to curb its occurrences for a significant relieve of its society.

Secondly, the failure of bill boards to achieve maximum impact would inform my project in not over relying so much on its usage. It's a good guide on media planning for sickle cell anaemia in Ghana, though a baseline data must be collected to ensure its usefulness or otherwise.

The knowledge on theoretical models, targeting high-risk groups and the broader community and providing culturally relevant messages would inform my decision on media planning and message content selection to achieve an effective communication strategy for sickle cell anaemia in Ghana.

Critique

The absence of significant differences between counties on the proportion of individuals who reported having seen the campaign or on any other item measuring billboard awareness or impact is an indication that Florida billboard campaign had limited success in increasing public awareness. Future cancer awareness campaigns should incorporate theoretical models, target high-risk groups and the broader community and provide culturally relevant messages as part of a multi-media campaign.

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2. Schooler, C., Basil, M.D and Altman, D.G.(1991). *Alcohol and Cigarettes Advertising On Bill Boards*. Health Education Research, 6, 487-490.



6.3 The Impact of the Healthcom Mass Media Campaign On Timely Initiation of Breastfeeding in Jordan

Citation

McDivitt, J. A., Zimicki, S., Hornik, R., & Abulaban, A. (Sept-Oct, 1993) *The Impact of the Healthcom Mass Media Campaign on Timely Initiation of Breastfeeding in Jordan*. Population Council. Vol. 24, No. 5 (Sep. - Oct., 1993), Pages 295-309.

Source: Studies in Family Planning,

Stable URL: <http://www.jstor.org/stable/2939223>.

Accessed: 10/10/2012 22:10

Summary

The article was on the impact of a mass media breastfeeding campaign on mothers in Jordan. In this study, the researchers examined the impact of a research-based intervention that primarily used the broadcast media to promote changes in breastfeeding behaviour in Jordan. It also examined specifically the role of mass communication in increasing timely initiation of breastfeeding within the context of other activities occurring during and after the child's birth.

The focus was on increasing initiation of breastfeeding within six hours of a baby's birth and de- lay supplementation until it was four months old, two practices that were expected to have a substantial impact on children's health and on breastfeeding duration and birth intervals.

Two major communication activities were developed and implemented: a two-day seminar on lactation management for health professionals and two intensive television and radio campaigns addressing women and their families which highlighted the importance of timely initiation and exclusive breast- feeding. Recommendations were made for legislation to support breast-feeding; educational programs for schoolchildren, women, and health-care providers; and changes in hospital policies and practices.

During the two mass media campaigns, the government radio and television stations broadcasted three and two spots daily from seven and nine spots developed. The messages consisted of dramas, testimonials, and advice from a fictitious female doctor, Dr. Huda, to encourage mothers to start breastfeeding soon after the child's birth. The most frequent message in the initiation spots for all medium was "initiate breastfeeding within the first hours after birth."

It also detailed the benefits of timely initiation for the mother and the baby. Messages stressed that breast milk is all that a child needs for his or her first four months of life and offered advice on managing common breastfeeding problems such as insufficient milk and breast pain. The link between breastfeeding and birth spacing was not mentioned specifically in the messages broadcast during the period

Two surveys were carried out, one in August and September 1988 before the seminar and media campaign and in July and August 1990 after. Mothers of children aged two years and younger were interviewed in Arabic by trained female interviewers using a questionnaire that covered knowledge, attitudes, and practices related to breastfeeding and child spacing; sources used by women to obtain information on child care; media use; and demographic characteristics. In all, 930 interviews were carried out in the baseline survey and 966 in the follow-up.

It was found out that knowledge level on breastfeeding initiation increased substantially. Knowledge that a mother should initiate breastfeeding within six hours of her baby's birth increased from 51 percent to 75 percent.

After the campaign, knowledge levels were high, and campaign exposure was very high. These findings suggested that the intervention had had an impact on timely initiation of breastfeeding.

Relevance to Study

The use of mass media has the power to change behaviour and is influential in spearheading campaigns to achieve success if properly selected. This could inform my decision on media selection in planning my strategy for sickle cell anaemia in Ghana.

The use of message platform such as dramas, testimonials, and advice from a female doctor could inform my project strategies when baseline data collected, proves its possible usage.

The consistency of the message is very important in message selection because it helps in reinforcing the authenticity of the message content. The use of training seminars with health staff could inform my project on who to include in the communication strategy to achieve maximum result.

The use of message platforms such as dramas, testimonials, and advice from professionals are mediums that I could use in selecting my communication tools. The insight gained from the failure of the campaign on women who delivered at private hospitals would help me in media planning select different channels for the subpopulations in the target.

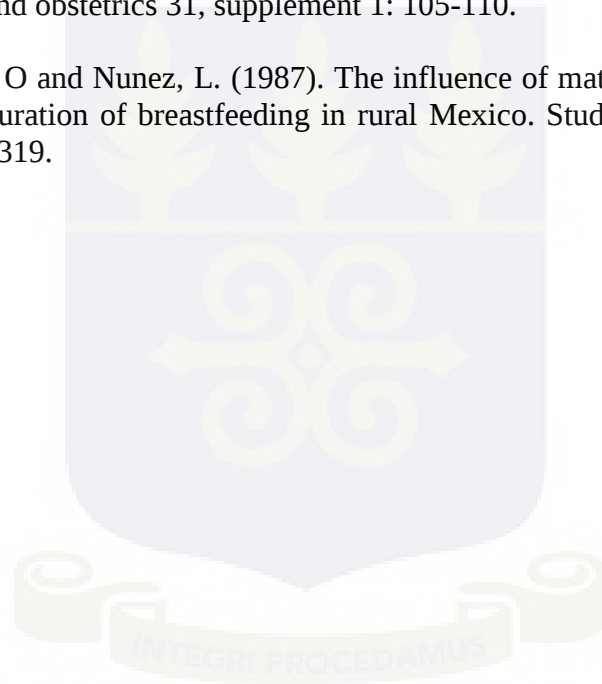
Critique

The failure of the campaign to influence change among women who delivered at private hospitals despite the high exposure and increase in knowledge level is an indication that the

campaign did not take the subgroups within the target into consideration. The use of a fictitious doctor instead of a real human being could be misleading and might not look real to the target audience.

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3. Potter, J. E., Mojarro, O and Nunez, L. (1987). The influence of maternal health care on the prevalence and duration of breastfeeding in rural Mexico. Studies in Family Planning. 18, 6: Pages 309-319.



6.4 1% or Less: A Community-Based Nutrition Campaign

Citation

Reger, B., Wootan, M. G., Booth-Butterfield, S., & Smith, H. (1998). *1% or Less: A Community-Based Nutrition Campaign*. Public Health Reports, 113(5), 410-419.

Brief Summary

The article was about a community nutrition program and its effectiveness in terms of adoption of the change that was demanded. The nutrition education programs generally focus on more than a single aspect to be delivered to the target population but this article states that only a single message of changing only one nutritional habit can be more effective in bringing change. For this reason Reger, et al, have highlighted on the consumption of high-fat milk by children and adults.

Coronary atherosclerosis has been regarded as a disease that starts to develop in children with high blood cholesterol level. The researchers are of the view that if the consumption of the high-fat milk is changed to low-fat milk in children, then the prevalence of heart disease could be reduced in adults. To achieve this purpose, nutrition awareness campaign was launched and targeted certain regions of demographic characteristics. Most of the education programs were not given significance and hence favourable results are not deduced from them.

The cities of Clarksburg, Bridgeport, and West Virginia were selected for the pilot study as the combined population was less, heart disease death rates are high and the advertisement can be highly cost effective in them. Sponsors for carrying out the research were also available in these cities.

The intervention strategies involved were focused on paid advertisements, public relation activities, taste tests, supermarket programs, school-based educational programs and other community based programs. All these interventions provoked the community to switch their consumption of high-fat to low-fat milk by spreading awareness of the benefits of low-fat milk. Almost 76% of the milk is sold at supermarkets therefore; these were the centre of attention to the researchers. Statistical analysis was used to evaluate the change in dietary behaviour.

Two major determinants were supermarket milk sales and telephone surveys after the completion of campaign. The results state that 94% of the participants liked the taste of low-fat milk and supermarket sales increased to 35% after six months of campaign. 13% respondents did not consume milk at all and telephone survey was completed from 69% of the consumers. Overall these results indicate that 38.2% of the respondents at the beginning of the campaign who reported the consumption of high-fat milk switched to low-fat after the campaign. This shows that the campaign gained benefits in terms of intervention. Like all other researches, this research is also not without limitations.

Relevance to Study

The respective article is related to the topic which is “Public Health Communication Strategy on Sickle Cell Anaemia” in that it is showing the effective patterns of spreading awareness. The article is primarily stressing on the need that only one strategy or behaviour change must be delivered to the audience at one time. In this way more adoption is assured as public finds it easy to change one aspect at a time. An effective communication strategy needs to be developed for creating awareness among people about management of sickle cell anaemia. If the Sickle Cell

Anaemia Strategy is developed, it should also be focused on delivering a particular aspect of dominant significance.

In the light of the above discussion, it is clear that communicating on public level is a complex phenomenon that needs appropriate strategies for it to be effective. In order to achieve better communication program, a complete analysis of the community and target population must be carried out which will enhance the outcome of the communication. Just as the nutrition campaigns in the article were focused on single aspect similarly, information about sickle cell anaemia should also be targeting to change one aspect at a time. This is how strategies become effective.

Critique

The research cannot be generalised because its focus was on only one demographic characteristic of the target population and not the habits of milk consumption in general.

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6.5 Steps in Planning and Developing Health Communication Campaigns: A Comment on

CDC's Framework for Health Communication

Citation

Donovan, R. J. (1995). *Steps in planning and developing health communication campaigns: A comment on CDC's framework for health communication*. Public Health Reports, 110(2), 215-217.

Summary:

According to the author, effective health communication programs are the target of almost every centre to change the behaviour of the target population. Health programs are formulated using various strategies and interventions that are different for different populations. Centres for Disease Control and Prevention (CDC) have introduced a 10-step framework to initiate change in behaviour through effective communication. The significant steps of the framework comprised of development, pre-testing, refinement, delivery, and evaluation of health messages. The formulated model is similar to other models presented by commercial advertising campaigns and health education programs. The major difference between these models and CDC's framework is that all other models consider defining the target population first and then draw out the communication objectives while CDC's framework first develop communication objectives and then select a target population. The steps 2 and 3 are reversible and the target population and the strategies to change behaviour can be altered likewise.

The respective article argues that these steps should be changed and communication objectives should be set afterwards because of three main reasons: proper strategies must be developed for behaviour change so that communication strategies are formulated accordingly, attitudes, beliefs and behaviour of the target population must be considered before setting communication

objectives, and channels to reach target population must be consistent with communication objectives. These three reasons are justified by the researchers in the article.

Behaviour change objectives lead to the development of more focused form of communication objectives. The goals of any program are achieved by formulating effective objectives that are in turn outlined by the use of knowledge of the target population. The questions regarding the target population must be known to form objectives. Therefore, the information and the selection of the target population should be prior to the formation of communication objectives. For instance, an anti-smoking program is launched by the formation of effective communication only when certain level of information regarding the smokers is known. Similarly, communication objectives are focused to change the behaviour, attitudes, and beliefs of the target population. Behavioural intentions are communicated but not the changes which still require some of the information of the audience.

The channels that are selected to communicate with the target population must be known prior to set objectives. But the CDC framework does not state this and this is again an illogical approach. Health program frameworks are focused to change behaviour and there are many steps where decisions are made simultaneously and recursively. Along with communication objectives, proper visual imagery is also needed for programs to be effective which is achieved using TV and brochures. Radio can also be used as a source to effective communication.

Relevance to study

Centres for Disease Control and Prevention (CDC) have formulated a framework for carrying out a program of delivering health messages. This framework was developed in order to bring maximum awareness among public. This basic plan comprised of 10-steps that can be utilized by any kind of health issue. This article is relevant to the topic as it helps in developing effective communication strategy for sickle cell anaemia. The article indicates that first the target population must be defined and then the communication objectives for sickle cell anaemia should be developed. In this way the program will be according to the needs of the population and would not fail.

From the above, one could say that sickle cell anaemia needs effective strategies to be communicated to the public. For this reason, the framework used should be such as to increase positive outcomes. The 10-steps framework presented by CDC holds certain loopholes that can affect the effectiveness in a negative way. Therefore, the major emphasis should be on the need to define the target population of sickle cell anaemia and then develop strategies for communicating the message.

Critique

In this article, the author sought to comment on the flaws in the CDC's framework for health communication. I personally believe that developing communication objectives before selecting the target population might not be out of place. This is because CDC has been engaged in change in health behaviour for some time now and has chalked successes in the area of change. What it means is that, we cannot stick to what the general perception is on health communication and try other methods such as the one by CDC.

Defining the objectives before selecting the target population only means that the problem has already been identified and identifying who needs what information in the population selection would not affect it in anyway.



6.6 Public Awareness of Sickle Cell Disease in Bahrain

Citation

Arrayed, S.A & Hajeri, A.A. (2010) Public Awareness of Sickle Cell Disease in Bahrain (4), Volume 30. Pages 284-288.

Summary

In this article, the researchers sought to measure public awareness in Bahrain of SCD, after a long period of educational campaigns. The study was conducted within a period of three months, thus from December, 2006 to February, 2007.

A total of 2000 persons, made up of 1106 females and 894 males selected from the general public formed the sample who participated in the study. A questionnaire both multiple and open ended was administered face to face.

The research revealed that about 93% had heard of SCD and 89% knew that it can be diagnosed by a blood test, but 51% did not know the prevalence of SCD in Bahrain. 84% recognized it as a hereditary disorder and 72% said that it can skip generations. There is a good level of knowledge about SCD among the public, though some of the respondents were confused about the difference between the carrier state of a disease and the disease itself.

While 34.5% of the respondents were in the age group of 10-19 years, only 0.8% were older than the age of 30 years. Of the respondents 23% were professionals, 406 (20.5%) were students and 618 (31.3%) were unemployed. There were 48.8% school students, 45.5% university graduates, and 4.6% postgraduates, while 1.1% respondents were illiterate. 53% were singles and 47% married.

More than 67% of the people were aware of the commonest symptom of SCD such as severe pain whilst 42% agreed that it can cause life-threatening infections, 25% that it can cause kidney failure, and 20% that it can lead to stroke, an indication of a high level of awareness among the public. About 80% agreed that SCD can have a negative impact on a child's school performance, which reflects a good appreciation of the severity of the condition. Almost 67% said certain types of food can trigger an attack which was wrong.

Females gave significantly more correct answers than males possibly due to health education during antenatal care and the fact that they take care of the family's health and tend to be more interested in learning about genetic blood diseases.

The respondents' level of education had an impact on the level of awareness and married people were better informed than single people because of the premarital testing and counselling about the disease. The study showed that television rather than seminars and information pamphlets should be made use of. They recognized premarital check-ups, health education, and legislation as important for increasing awareness of the disease.

Relevance to Study

The article's relevance to my project is in the fact that it's about sickle cell anaemia and its prevalence rate of 2% is similar to Ghana's. The need to clarify the difference between the carrier state and the affected state of is important. The positive effect of screening as a method of increasing awareness of SCD could be explored in designing a communication campaign for

awareness creation in Ghana. The higher level of knowledge among women means that educational campaigns should be targeted more towards men.

The use of mass media was inevitable. Though television was seen as the most effective method of education, this could be different in Ghana. A baseline would be conducted to determine the most effective medium of education on health. The inclusion of common blood diseases, particularly SCD, in school curriculums, could be adopted in Ghana to increase awareness of SCD. The use of none conventional media such as antenatal care and marriage counselling could inform my communication strategy.

Critique

The fact that only 1.1% of the target audience population were illiterates shows that, the report might not reflect the true picture of the existing situation. Both literates and illiterates should have been given equal proportion in percentage. According to the authors, their level of education influenced the way they perceived the SCD.

Reference

1. Arrayed, A .S. (2005) Campaign to control genetic blood diseases in Bahrain. Community Genet (8) Pages 52-55.

6.7 Impact of a Mass Media Vasectomy Promotion Campaign in Brazil

Citation

Kincaid, D. L., Merritt, A.P, Nickerson, L., Buffington, S.D., Marcos, P. P., Castro. P & Martin de Castro (1996). *Impact of a Mass Media Vasectomy Promotion Campaign in Brazil: International Family Planning Perspectives*, Vol. 22, No. 4, pages 169-175.

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Stable URL: <http://www.jstor.org/stable/2950815>.

Accessed: 12/10/2011 10:15

Brief Summary

The article under consideration was an evaluation of the impact of the mass media on a vasectomy campaign carried out in three of the five largest cities in Brazil. The cities were Sao Paulo, Salvador and Fortaleza.

Vasectomy has been available throughout much of the world for decades and it has become a major family planning method in some countries. By 1991, vasectomy had been chosen by approximately 41.5 million couples worldwide. About three-fourths of vasectomy users are concentrated in China and India, where government programmes have long supported the method.

In 1989, PRO-PATER collaborated with the Johns Hopkins University Population Communication Services project, to undertake the project funded by the USAID.

The main aim was to standardize the information provided to potential vasectomy clients, eliminate some of the public's misconceptions about how the operation is performed, its effect on sexual functioning and long-term health effects.

The specific communication objectives were to increase knowledge and awareness of vasectomy and to increase the number of vasectomies obtained by lower-middle-class men aged between 25 and 49. The campaign consisted of four distinct phases: Pre campaign public relations activities, television spots broadcast in May and June of 1989, Re- broadcast in September of 1989; and a follow-up mini campaign was conducted early in 1990. The slogan "Vasectomy is an act of love" was the main theme for the campaign.

The pre- campaign public relations efforts exposed editors and reporters to the campaign, so the spot itself generated cost-free publicity in the form of news coverage. The campaign methods included prime-time television and radio spots, the distribution of flyers, an electronic billboard and public relations activities.

The six months campaign resulted in massive increases in vasectomies performed at the clinics in all three cities, 108% in Fortaleza, 59% in Salvador and 82% in Sao Paulo. Data on clinic referral sources indicate that television replaced personal sources in motivating men to make telephone enquiries and visit the clinics.

The number of vasectomies peaked during the month immediately after the campaign, when 689 vasectomies were performed, compared with an average of 310 operations during the period

before the campaign. However, the monthly average after the campaign was 401 vasectomies. Six months after the campaign saw a drastic reduction in the number of vasectomies recorded.

Relevance to study

Though not on SCD, it's also a campaign to increase awareness of a health related issue. The need to combine various communication strategies to be able to achieve the desired objective is an indication that no one form of media can address and have positive influence on creating awareness. What is important is to know the subgroups within a population to know what media to use for which group.

The reduction in the number of vasectomies six months after the campaign is an indication of the need for some kind of ongoing promotion to maintain a given level of clinic. The suggestion by the authors that an annual "Vasectomy Week" promotion be inaugurated followed by a weekend of inexpensive, prime-time promotional spots every three months is very insightful and could help in advocating for a 'Sickle Cell Anaemia Week or Day for creating awareness of SCD.

The use of the slogan "Vasectomy is an act of love" as the main theme for the campaign, in the entire medium used to ensure consistency and reinforce the message would inform me in designing an effective strategy to increase awareness among the target audience, by using a single theme throughout the strategy.

Critique

The age of the target group starting from 25-40 years may not be helpful. This is because most people at this age might just be about getting married or yet to marry. I believe the age should have started from 30 years rather than 25-40 years.



6.8 Evaluation of a measles vaccine campaign by oral-fluid surveys in a rural Kenyan district: Interpretation of antibody prevalence data using mixture models.

Citation

Ohuma, E. O., Okiro, E. A., Bett, A., Abwao, J., Were, S., Samuel, D., Vyse, A., & Gay, N., Brown, D.W., & Nokes, D.J (2009). Evaluation of a measles vaccine campaign by oral-fluid surveys in a rural Kenyan district: interpretation of antibody prevalence data using mixture models. *Epidemiology & Infection*, 137, 227-233.

Brief Summary

Programs and their effectiveness can be assessed for evaluating the objectives achieved through the program. This can be achieved through various procedures and techniques. The respective article is about the evaluation of effectiveness of measles vaccine in children. Oral-fluid antibody examination is regarded as an alternative to blood examination and this study also uses oral-fluid antibody analysis as it is best suitable for conducting the evaluation of immunization campaigns. Mixture modelling process has been used for the analysis of data.

The data used was originally an unpublished data of a national measles vaccination campaign for children aged 9 months to 14 years. Oral-fluid antibody technique was previously applied successfully to rubella. The study took place in Kilifi District, coastal Kenya where 72% coverage of measles vaccine is reported. The time period for vaccine campaign was 17-23 June, 2002. Government health facilities and private clinics were incorporated in vaccine campaign and Local Ministry of Health in Kenya also cooperated in the study. The sampling design was adjusted to estimate the representatives from rural and town areas at two distinct points: pre-campaign levels of measles antibody and almost one month post campaign levels. Laboratory methods were also a significant part of the assessment and oral fluid samples were collected

using Oracol device and the collected samples were processed and screened for measles-specific antibody using the Micro immunemeasles IgG EIA. The collected data was analysed for seropositive and seronegative measles-specific antibody using mixture modelling technique.

The results were evaluated after the analysis of the data and density computation of the measles-specific antibody. Results indicate that almost 85% of the population received vaccination. In total, 86% females and 83% males were vaccinated. Age distribution of vaccine indicates that from 0-4, 5-9, and 10-14 years of children 76%, 93%, and 85% received vaccine. The effectiveness of the vaccine was estimated typically in rural setting. The study clearly indicates the impact of the vaccine on the population's measles immunity which was a major consequence of the campaign. Random sampling technique was used for pre-campaign sample selection and post campaign after one month used the same data. The effectiveness of the present study concludes that supplementary immunization activities must be undertaken, as suggested by World Health Organization, to enhance the health status.

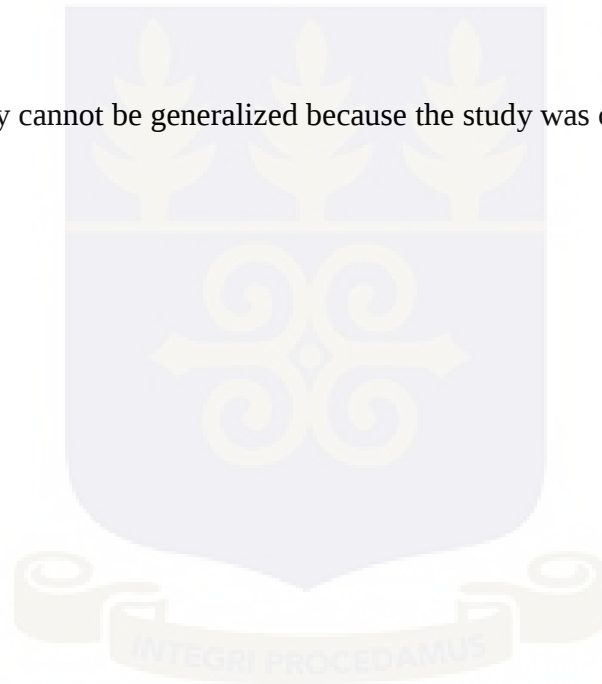
Relevance to Study

The respective article is emphasizing the fact that a health communication program can be effective if it uses accurate techniques necessary for it. This can be seen through the use of oral-fluid surveys for the determination of the effectiveness of measles vaccine. Similarly, the message on sickle cell disease must first be pretested for its effectiveness, before designing the message for the communication campaign. In this way better results can be obtained when practical implications are made. The article is related in the sense of delivery of effective messages and treatments for the public.

The success of any health message or treatment available to the public is first subjected to pilot study for its effectiveness. This can assure the positive practical implication of the strategy. The analysis of the above article shows that the measles vaccine can be successful if introduced. Similar tests and studies can be conducted for sickle cell anaemia for better results in particular and improving the health of the public in general. Scientific experiments demand special focus for them to be available to testing in public. The communication strategy for sickle cell anaemia can be effective if the right message is made available to the public by such small studies.

Critique

The result from this study cannot be generalized because the study was carried out within a small rural community.



6.9 The Association of Provider Communication with Trust among Adults with Sickle Cell Disease'

Citation

Haywood et al

Haywood, C.,Lanzkron, S.,Ratanawongsa, N., Bediako, S.M., Lakshmi, L.,NeilR.PowelandBeach, M.C.(date). *The Association of Provider Communication with Trust among Adults with Sickle Cell Disease*. Journal of General Internal Medicine, Volume 25, Pages 543-548, Society of General Internal Medicine

Summary

Sickle cell disease, a genetic condition affects over 100,000 persons in the U.S, mostly African - Americans. Patients experience significant morbidity throughout life, as well as early mortality. During crises, they experience severe pain often resulting in hospitalization on internal medicine services, and treatment with opioids.

Adult sickle cell persons often report of poor interpersonal health care experiences, such as poor communication with providers, mistrust from clinicians, stigmatization, lack of control, and neglect whilst on admission. The effect of these experiences on patients' trust is however unknown. Trust in the medical profession may be particularly important for patients with sickle cell disease, who have been shown to underutilize recommended medical therapies.

In this article, the authors sought to determine the association between patient ratings of the previous quality of provider communication and current trust in the medical profession among adults with sickle cell disease and to test the hypothesis that lower trust would be

associated with poorer patient ratings of the quality of their previous communication from providers.

The researchers used cross-sectional survey design to study 95 adults (age 18+) with sickle cell disease receiving care at an urban academic medical centre from September 2006 to June 2007. They were from the adult sickle cell and haematology outpatient clinics, the emergency department (ED), the inpatient units, or within 5 days after discharge from the hospital. Each respondent went through a 15-minute interview by a trained study team member and received \$10 on completion. Health status information was retrieved from the patient's medical record.

In this study, trust is the optimistic acceptance of a vulnerable situation in which one party believes that its interests will be cared for by another party. Respondents expressed their level of agreement with the following statements:

- 1) Sometimes doctors care more about what is convenient for them than about their patient's medical needs (reverse coded)
- 2) Doctors are extremely thorough and careful
- 3) You completely trust doctors' decisions about which treatments are best
- 4) A doctor would never mislead you about anything
- 5) All in all you trust doctors completely

The result was, better ratings of previous provider communication were significantly associated with higher levels of trust toward the medical profession. A 10% increase in provider communication rating was associated with a 3.76% increase in trust scores ($p < 0.001$, 95% CI [1.76%, 5.76%]), adjusting for patient-level demographic, clinical, and attitudinal characteristics. The conclusion is that poorer patient ratings of provider communication are associated with lower trust toward the medical profession among adults with sickle cell disease.

It was also found that sickle cell patient's dispositional optimism, which appraises the extent to which individuals have positive expectations for the future, was independently related to trust. Interventions aimed at improving the interpersonal skills of medical professionals who interact with sickle cell disease patients may be an important avenue towards improving clinical and patient perspective outcomes of care for all persons with the disease.

Relevance to study

First of all, the article is on sickle cell anaemia persons and the fact that it was carried out among persons with who are mostly affected by it. It is also on interpersonal communication which is a vital method of communicating with sickle cell persons based on trust. I would be guided on the principle of trust. Thus I would also emphasize the need to ensure information sources for the strategy must be trust worthy and exaggeration must be avoided.

The study shows that in planning communication on sickle cell anaemia, there is need to include the importance of communicating with trust among care givers, as well. This is because patient's perception of the quality of their provider's communication strongly determines the trust that patients have in the former and their readiness to seek care. Care givers need to be sensitized on

this. Though it's not on the main strategy for the core target in this strategy, it would help in designing strategy for care givers in future study.

Critique

A sample taken from a single medical centre cannot be generalized to the whole sickle cell population and has to be done with caution.

Patients who actively seek care from a medical centre may have higher levels of trust than patients who prefer to manage their conditions at home or in other settings. It could be that the level of severity of sickness of patients in the study may be higher than those patients who do not, or infrequently, seek care. The authenticity of the study could be determined if it is replicated in other settings where SCD patients receive treatment.

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7.0 ANNOTATION OF EXPERT INTERVIEW WITH MADAM RUTH MARFO, A COMMUNICATION EXPERT AT VODAFONE GHANA LIMITED, AIRPORT CITY, ACCRA

BACKGROUND

Mrs. Ruth Marfo is a communication expert at Vodafone Ghana, in Accra. She has been with the corporate communications department of the company over a decade. Her department has been involved in quite a number of communication campaigns over the years.

The interview was on the subject of designing a communication strategy. During this short but impressive interview, Madam Marfo shared her personal experience on the subject. She works with Vodafone, an international telecommunication company in Ghana. She answered questions bordering on factors to consider when designing a communication strategy of any kind.

Discussion

She indicated that designing a communication strategy irrespective of its purpose, is to first of all identify the problem. She pointed out that her company does design its own communication strategy.

Madam Marfo was of the view that a communication strategy must first start with the definition of the objective, after the problem has been identified. According to her, defining the objective is the most important factor that shapes the communication strategy irrespective of the purpose. The objective would determine the target audience to be reached in order to achieve its purpose. Ruth stated that a sound communication strategy starts with identification of a problem and once

that is done, the objective it seeks to achieve serves as a driving force for the strategy. This view is supported by that of the CDC's framework for designing health communication in the article by Donovan, R. J.,(1995) pages 215-217. The article was 'Steps in planning and developing health communication campaign': a comment on CDC's Framework for communication. In the article, the CDC, thus Centres for Disease Control and Prevention, introduced a 10 – step framework to initiate change in behaviour through effective communication.

The major difference between other models and CDC's framework is that, the objective must first be designed before the target audience. Donovan however argued that the target population should first be defined before the objective. Ruth was of the view that the objective should come before target audience after identifying the problem just as the CDC has proposed in the 10- step framework. Her reasons are that, the target audience should be identified after the objective is declared.

On the question on what factors informs one's decision about the target audience, in designing a communication strategy, she was quick to point out that it's important to know what the strategy is about. For instance if the strategy is on general health, it means the campaign must target everyone since we are all affected by it. She stated that the strategy must be clear on what it seeks to achieve.

Secondly, the objective must be clearly defined. This would answer questions such as 'why' the campaign is being carried out and 'who' to speak to in order to achieve this objective. She cited for instance that if Vodafone wants to be a loved brand, their health education program must target the general public in order to have the desired effect. Likewise, when one seeks to create a

change among a specific target audience, then he would determine who to reach as target audience.

On the question of what consideration to make for sub-groupings such as primary and secondary targets, she mentioned that basically, once the objective is properly defined, the primary audience would be those involved directly with and for whom the campaign is being designed and run.

Madam Ruth said that in the case of designing a communication strategy for SCD, the target population could include those who are yet to marry, depending on the objective of the strategy. In this case, those who would watch and /or listen to the campaign, through the selected channels become the secondary target. She stated that communication strategy maximises shared information and minimises misinterpretation.

On the question of what factors to consider in selecting the communication channels for a communication strategy, she revealed that it is essential to know the reach of the specific channels, thus, how easily the target audience can access information being sent out.

The next question was on what to consider in selection a media as a major and which to select as a minor one. She was of the view that it is important to know the coverage of the media house. This she explained to mean how widespread they are nationwide and how it reached the target audience. Secondly, one needs to look at the budget available. The third point to consider is the program schedule being offered, since this could determine showing times.

On the issue of what informed one's selection of message content, for the strategy, she indicated that that it is determined by the objective of the campaign. For instance if the objective of the campaign is to educate the public on health issues as in the case of Vodafone and Health Matters, the message would place emphasis on what the objective seeks to achieve at the end of the day.

Ruth pointed out that challenges that could confront strategy designers are enormous. She said they include identifying what are important and relevant concerns to be addressed and financial constraints among others.

Asked what possible costs centres one must consider when drawing a budget for a public health campaign strategy, she enumerated some vital points to consider, though not in any order of importance. They included media, venue hire, souvenirs for the audience, stationery, catering, logistics, paid adverts to mention but a few.

The final question was on what informs one's decision on setting a timeline for a communication strategy. To this, she stated that the overall corporate strategy and accompanying roadmap determines when various campaigns are carried out and within what period. She said without a timeline, there would be no commitment to work towards a particular date.

She mentioned that whether a communications strategy is primarily to make people aware of a problem, inform, encouraged to take an action or involve them in solving a problem, it is very important to clearly define what the objectives is before moving on to other factors.

On what informed her decision on the selection of the target audience for a communication strategy, she said the first factor to consider when deciding on the target audience is to clearly define what the strategy is seeking to achieve at the end of the campaign and who needs influence to take action.



**7.1 ANNOTATION OF EXPERT INTERVIEW WITH MADAM CHARLOTTE OWUSU
EXECUTIVE DIRECTOR OF SICKLE CELL CONDITION ADVOCATES
(SICCA) SAKUMORNOR ESTATE JUNCTION, ACCRA.**

Background

The interview was on the subject of what advocacy has done in the area of awareness creation for sickle cell anaemia. Madam Charlotte Owusu shared her practical experience on the organisation's activities. SICCA is one of the most vibrant organizations actively involved in awareness creation on SCD in Ghana. She gave an insight into the creation of SICCA and activities they had engaged in as well as the challenges involved.

Discussion

Madam gave the genesis of SICCA and how it has fared over the years. She is a professional Art Educationist who graduated from the university of Cape Coast in 1986. Since her completion, she has been engaged in advocacy programs on awareness creation activities to date.

She gave the genesis of how SICCA was born. According to her, it all began when she got married in the early 1998s. Unknown to her, she and her husband both had the sickle cell trait, ie they were sickle cell carriers. Four months after delivery, their first child Eno, kept falling sick.

The frequency of her sickness was so unbearable that, a medical doctor advised her to test the daughter for SCD. According to her, it was her first time of hearing about the SCD. The lab report confirmed the child's sickle cell disease status. That was when she started reading around the SCD. Information was however not readily available to her.

Unfortunately for her, she became pregnant just around the same time with her second child who later was also confirmed to be SCD person, after a few months. These experiences coupled with the challenges of caring for SCD children motivated her to actively engage in advocating for awareness creation on SCD as well as SCD persons.

After a few visits to the Korle Bu teaching hospital with her children, she found out that most of the parents were equally unaware of the sickle cell disease, its transmission routes, symptoms and management among others. This realisation shocked her to the core and wondered why there was so much silence on such a serious health quandary which could have been prevented with education.

She started encouraging parents who brought their children to the hospital. This situation motivated her to spearhead the formation of the Sickle Cell Patients and Parents Association, the first of its kind in the country. She strongly believes that the high incidence of the SCD in Ghana is due to the lack of awareness and interest in the disease, compared to other disease like HIV/AIDS and malaria. According to her, if SCD had been hyped like the other diseases, to increase awareness of the disease, the situation would have been much better considering the number of new born babies affected by the disease annually. According to Madam Charlotte, hearing about the disease for the first time, after her first child was diagnosed, is an indication of the low level of knowledge among the Ghanaian populace.

Her conviction is deep-rooted in a study by Carter et al (1979) on “The study of mass media effectiveness for SC anaemia education in a rural community”. In this study, the researchers stated that one of the startling facts about the SCD is the lack of awareness and interest in it.

They compared the SCD to other disease such as leukaemia and cystic fibrosis which had greater public interest. These are disease with a ratio of 1 in 3000 live births as against SCD with a ratio of 1 in 500 live births. She was of the view that if SCD was receiving the needed attention, the situation would not have been as bad as it is today.

She compared the number of radio and TV adverts, documentaries, seminars among others organised for other diseases and express grief that nothing is heard about SCD in spite of the increasing number of children born with the disease each year.

Madam Owusu gave an account of how she spearheaded the formation of the Sickle Cell Patients and Parents Association of Ghana in Tema in the early 1980s. Later, other branches were formed in Kumasi and Koforidua. The various branches of these associations later metamorphosed into the Sickle Cell Association of Ghana, in September, 2002, with the support of the Ghana Institute of Clinical Genetics.

She was also a founding member of the Sickle Cell Foundation of Ghana with Professor Ohene Frimpong and Dr Twumese in April, 2004, in Kumasi. Three years later, she registered her own organisation officially, the Sickle Cell Condition Advocate (SICCA) in September, 2007.

On the method used in awareness creation, she was of the view that, in the midst of inadequate finances, SICCA has done a lot to help raise funds to support the promotion of SCD. As a sickle cell advocate, she has also been very supportive in assisting other players in the fight against the disease. One of such organisations is the XZY Sickle Cell Foundation by Zynab Ayesha Passah on the 23rd of December, 2010. She believes that creating awareness of the disease among the

Ghanaian populace is a task that cannot be achieved by a single person but by the collective effort of individuals and organizations with the support of the government.

Since 2009, she has been engaged in organising workshops for medical doctors to create awareness on the seriousness of the disease and how to manage persons living with it. Occasionally, seminars are organised for other health professionals such as nurses, laboratory technicians, orderlies, medical health assistants among others to increase awareness on SCD.

SICCA has also been involved in establishing Sickle Cell Clinics in various private clinics and hospitals across the nation, some of which are Caiquo Hospital in Tema and the two Northern and Upper regional hospitals.

Since March 2010 to date, SICCA has partnered with the Legon Lion's Club of Ghana, to embark on an annual educational campaign on the SCD among pupils in first cycle institutions. The organization has also been very actively involved in advocacy work in churches and other community groups. SICCA has partnered with Higher Education Fair since its inception, in 2000 to promote SCD among first and second pupils and students. The Fair is organised annually in all the ten regions across the nation. During the Fair, the organization takes the opportunity to educate students on the SCD. SICCA has represented Ghana in many international conferences and presented information on the Ghana situation.

The world celebrates the 'International Sickle Cell Day' on the 19th of June every year. SICCA since its formation dedicates one week prior to the date, to hype on the SCD. This it does through talk shows on TV, radio and the print media using health professionals.

The organisation has been contributing its quota to academia by making information readily available to tertiary students to assist with their thesis/dissertations/project works when it has to do with any aspect of the SCD. Additionally, they have been at the forefront of advocating for preconception screening, counselling and caring for persons living with the disease. Workshops are also organised for health professional, parents of SC persons and care givers.

Madam Charlotte pointed out that most people are still not clear on the difference between the sickle cell trait and the disease, and there is still a misconception that the disease has a root cause in spirituality. According to her, the state of affairs forms the core areas that her organisation focuses on during their workshops for community leaders. She was optimistic that when all the organisations engaged in SCD awareness creation come together under one umbrella, a lot could be done to enhance the awareness level among the Ghanaian populace.

She also remarked that though so much effort is being made, the impact on awareness creation would have been greater if aggressive mass media had been utilized to urgent these efforts. She explained that most of the activities of the players had evolved around workshops, seminars and talk shows among others. The use of the media had been relatively minimal except during the annual World Sickle Cell Day, a situation she attributed to inadequate financial resources. This constraint aligns with the views of researchers Arrayed et al (2010) on their study of 'Public Awareness of Sickle Cell Disease in Bahrain'. The researchers mentioned among other things that rather than relying solely on community seminars and information pamphlets, maximum use must be made of mass media especially television which has the potential to be the most effective media to educate the public about the SCD.

Madam Charlotte Owusu is a passionate advocate for SCD and I personally believe that when given a little push in terms of finance and other logistics, SICCA can go a very long way in helping curb the high incidence of the disease.

References

1. Cartor et al (1979). The study of mass media effectiveness for sickle cell anaemia education in a rural community. Journal of the national Medical Association, Volume 71, No (11), 1055-1057.
2. Arrayed et al (2010) 'Public Awareness of Sickle Cell Disease in Bahrain'. Annals of Saudi Medicine, Volume 30, pages 284-288.



7.2 ANNOTATION OF EXPERT INTERVIEW WITH DR IVY SEY, DEPUTY DIRECTOR AT THE INSTITUTE OF CLINICAL GENETICS IN KORLE- BU

Background

The interview was on the subject of awareness of creation on sickle cell disease in Ghana, by her organization, both in the past, at present and the way forward. She enumerated the activities of the Institute since its inception to date. She also shared her personal views on the current situation in the country.

Discussion

Dr. Ivy Sey expressed her keen interest in seeing the clinic achieve its ultimate aim of curbing the high incidence of SCD to the barest minimum. Established in 1974, the institute has not gone through much change but has been very instrumental in the formation of the Sickle Cell Association of Ghana. She explained that the clinic's objectives were to provide medical services to people suffering from SCD in the country. It is the first of its kind in the country and has spearheaded many programs.

The institute runs its own clinic for people living with SCD. People are referred from other hospitals and clinics all over the country, once they are diagnosed with the disease. She also mentioned that the institute has a mandate to create awareness of the disease among the Ghanaian populace so that they can make informed decisions when it comes to marriage and having children.

Though the institute's primary objective is to take care of people suffering from the disease, counsel and visit for medications, it also has the mandate to create awareness on the disease among the Ghanaian populace. She however acknowledged that until recently, their method of awareness has been patient centred. Occasionally, their staffs are invited by organizations and individuals to give talks on the disease. Not much has been done in this regard.

In recent times however, the institute has been very active. In collaborations with the Sickle Cell Association of Ghana, they organize programs on awareness of the disease. To this end the institute organizes seminars, workshops and other programs among others to increase the knowledge level among Ghanaians.

Recently, the institute has shifted its focus to the first cycle institutions as a new bold step towards awareness creation among young ones. They have rolled out a program known as "Need to Know". They believe that is important to catch these children young at this tender age before they grow older and get into relationships. Their aim is to prepare them adequately with the needed information in order to make informed decisions late in life.

She hinted that plans were underway to roll in second cycle and tertiary institutions into the program. She affirmed the low knowledge level among the Ghanaian population about the disease despite the high incidence rate of the SCD and believes that with time, the situation would change. This she said might take time but gradually, the desired goal would be achieved. She attributed the low knowledge level of the disease to the lack of awareness and interest about the disease as compared to other diseases. This authenticates the research by Cartor et al (1973). The researchers attributed the high increase of the SCD in the community to the lack of

awareness and interest on the disease. This was compared with diseases like fibrosis and acute leukaemia that had gained more attention and interest, though their prevalence is nothing compared to that of the SCD.

She mentioned that one major challenge has to do with inadequate finance to implement the awareness creation programs. She also indicated that though there are prominent people suffering the disease, they do not want to identify themselves with the disease because they have financial means to support themselves. She attributed this to the stigmatization associated with people living with the disease.

She indicated that companies such as Vodafone have taken the initiative to support the initiative in conjunction with the Sickle Cell Association of Ghana, and was optimistic that with time other organizations would join in the crusade against this menace and create the needed awareness on the disease. She hinted that currently, the disease is not part of the ailments covered by the National Health Insurance and as a result, most patients who are unable to afford the tests and medications needed might get worse and lose their lives as a result.

On the challenge facing the institute, Dr. Ivy Sey mentioned finance as a major one. She also indicated that misconception about the disease and the transmission routes is one area that needs to be tackled. She also believes in the fact that equipping Ghanaians with the right information would go a long way to curb the high incidence of the disease. The institute has been working hard to secure funds for this purpose.

Reference

Cartol et al (1979). *The Study of Mass Media Effectiveness for Sickle Cell Anaemia Education in Rural Community*. Journal of the National Medical Association, Volume 71, No.(11), pages 1055-1057.



8.0 INTERVIEW GUIDE FOR A COMMUNICATION EXPERT

1. When you have to develop a campaign strategy for health education, what factors inform your decisions about the target audience?
2. Any considerations for sub groupings, i.e. primary audience and secondary audience? What informed your decision on who your primary and secondary target audiences should be?
3. What did you consider in selecting a communication channel for a communication strategy?
4. What were the factors you took into consideration in deciding what media to select as a major and which to be your supporting ones?
5. How did you decide on a preferred media and which are the available ones in the strategy design?
6. What informed your selection of message content for the strategy?
7. What are some of the challenges one can encounter in developing strategy for health education?
8. What are the possible costs centres to consider when budgeting for a public education campaign on health?
9. What informed your decision on setting a timeline for a communication strategy?

8.1 TRANSCRIPTION OF AN INTERVIEW WITH A COMMUNICATION EXPERT

As part of my project on designing a communication strategy on sickle cell anaemia, I had an interview with Mrs. Ruth Marfo, a communication expert from Vodafone. The interview took place at the Vodafone Headquarters, Airport City on the 2nd of April, 2012, at 10:45 am.

Lucky: Madam, I'm Lucky, an MA candidate from the school of communication studies. As part of requirements for the award of an MA in communication studies, I am designing a communication strategy for sickle cell anaemia in Ghana.

Ruth: Right.

Lucky: Well, as a communication expert, I believe you might have been involved in designing communication strategies for various purposes.

Ruth: Yeah, quite a number of them.

Lucky: I am here today to draw from your experience on what goes into designing an effective communication strategy.

Ruth: You are welcome, Lucky.

Lucky: Thank you. So madam, when you have to develop a campaign strategy for health education, what factors inform your decisions about the target audience?

Ruth: Well, first of all, it's important to know what the campaign is about. For instance, if it's on general health, it means the campaign must target everyone, since everyone is

affected by health concerns in one way or the other. What it means is that, it must be clear what the campaign is about.

Secondly, one must consider the objective of the strategy .The objectives of the campaign such as ‘why is the campaign being carried out and who to speak to in order to achieve the objectives must also be clear. Let’s say, for instance if Vodafone wants to be a loved brand, our health education programmers would target the general public, you know, for everyone.

Lucky: So in this case, any considerations for sub groupings, i.e. primary audience and secondary audience? What informed your decision on who your primary and secondary target audiences should be?

Ruth: Basically, once the objective is clearly defined, the primary audience will be those involved directly with and for whom the campaign is being run.

Lucky: well then, in my case where I’m designing strategy for people yet to marry, who would be my primary target?

Ruth: in your case, the people between the age group of 22 to 42 could form your primary audience and the secondary audience would be the public or those watching or listening to the education campaign programme via media or any other channel.

Lucky: That brings me to my next question, what did you consider in selecting a communication channel for a communication strategy?

Ruth: EMM...what is essential is to know the reach of these channels...by that I mean.....how easily the target audience can access information being sent out. Alright?

Lucky: What were the factors you took into consideration in deciding what media to select as a major and which to be your supporting ones?

Ruth: Well, let me see emmm, One, The coverage of the media house...how widespread they are nationwide. Secondly, you look at your budget available and thirdly, the program schedule you are offered could also determine showing times

Lucky: How did you decide on a preferred media and which are the available ones in the strategy design?

Ruth: if I understood your question well, the previous answer could be applicable to it. Orr?

Lucky: What informed your selection of message content for the strategy?

Ruth: Our objective for the campaign i.e. educating the public on health issues. Message should emphasis the main objective.

Lucky: What are some of the challenges one could encounter in developing strategy for health education?

Ruth: Normally, it depends on what is/are the most important/relevant health concern(s) at stake, financial constraints among others.

Lucky: What are the possible cost centres to consider when budgeting for a public education campaign on health?

Ruth: Essentially, could include media, venue hire, souvenirs for the audience, stationery (programmes, brochures etc.) catering (where required) logistics (PA system, plasma screens, projectors etc.)

Lucky: What informed your decision on setting a timeline for a communication strategy?

Ruth: The overall corporate strategy and accompanying roadmap determines when various campaigns are carried out and within what period. Without a timeline there'll be no commitment to work towards a particular date.

Lucky: Thank you very much Madam Ruth, this interview has been very insightful.

Ruth: You are always welcome Lucky. Enjoy your day.

8.2 HEALTH COMMUNICATION STRATEGY SURVEY QUESTIONNAIRE FOR THE TARGET AUDIENCE

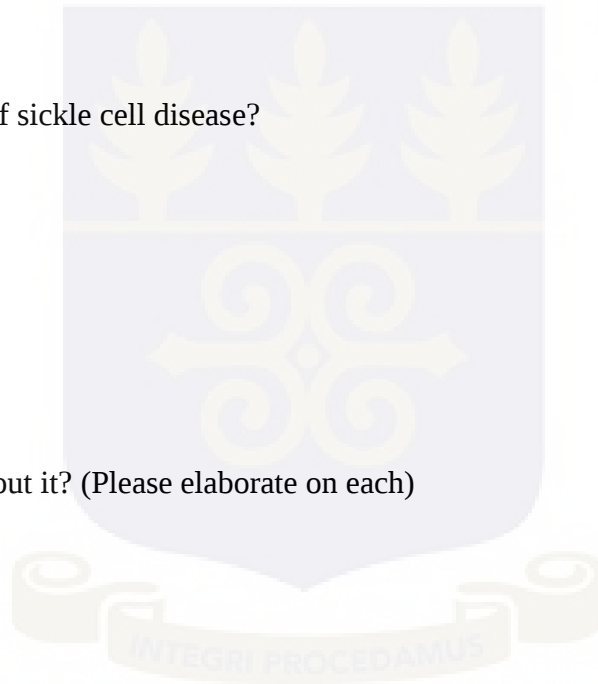
I am lucky Arthur, an MA candidate at the University of Ghana. As part of my preparation towards my project work, I am conducting a baseline research, the result of which would be used to inform the project. You have been selected because you fall within the group targeted for a communication campaign on Sickle cell anaemia. Please be assured that this exercise is purely for academic purposes and whatever information you give would be kept confidential

1. Have you ever heard of sickle cell disease?

- a. Yes
- b. No

2. What do you know about it? (Please elaborate on each)

- a. Causes
- b. Symptoms
- c. Management
- d. Life span
- e. All



3. If you answered yes to Q1, what do you know are the causes of sickle cell disease?

- a. Blood
- b. Particular Food
- c. Physical contact
- d. Hereditary
- e. Other (Please specify)

4. Do people with sickle cell carrier have significant health problems?

- a. Yes
- b. No

5. Is sickle cell anaemia contagious?

- a. Yes
- b. No

6. Can sickle carriers pass the gene on to their children?

- a. Yes
- b. No



7. Is there a cure for sickle cell disease?

a. Yes

b. No

8. How should sickle cell persons be related to?

a) Be treated with special care and love

b) Be treated as normal

c) Be treated as Sick people

d) Be avoided

e) Others (specify)

Choose One As It Applies To You

9. Everyone should check to know their sickle cell status before marriage

a. Strongly agree

b. Agree

c. Strongly disagree

d. Disagree

e. Other (specify):

10. Do you know your SC status?

Yes

No

11. If no, would you check it before marriage or before deciding to get pregnant?

Yes

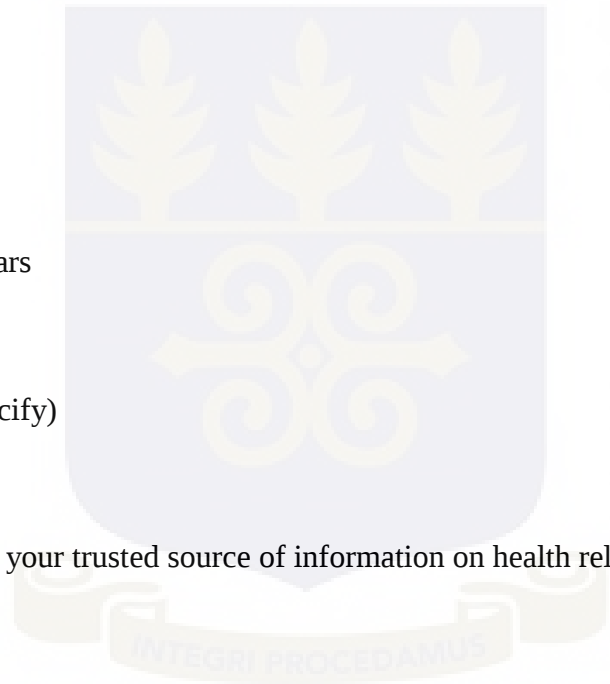
No

12. Which of these sources do you rely on most for health information (choose only one, the most important to you)

- a) Family and Friends
- b) Church
- c) Radio
- d) Television
- e) Newspapers
- f) Community durbars
- g) Internet
- h) Other (please specify)

13. Which of these is/are your trusted source of information on health related issues?

- a. Radio.
- b. Television
- c. Community durbars
- d. Family and friends
- Health professionals
- e .Internet
- f. Others (please specify)



14. Which of the following media do you consume often (at least three times a week?)

- a. Print
- b. Television
- c. Community durbars
- d. Internet
- e. Radio
- f. Others (please specify)

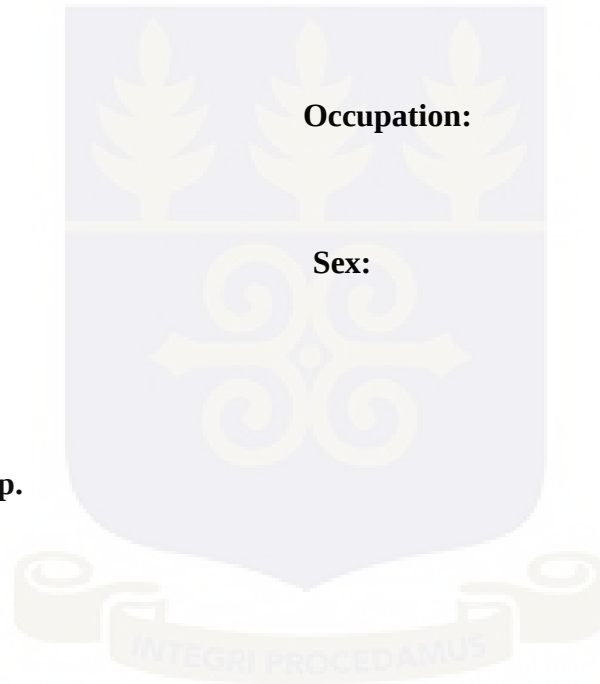
Age:

Occupation:

Religious Background:

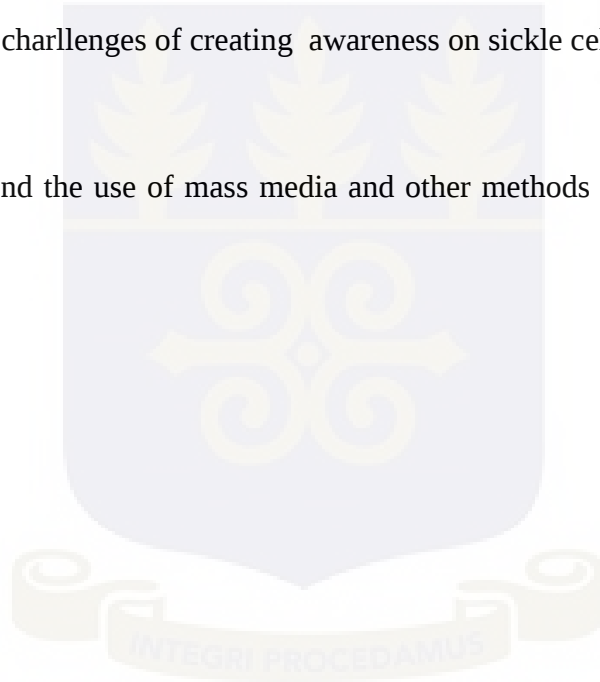
Sex:

Thank you for your help.



8.3 INTERVIEW GUIDE FOR A SICKLE CELL ADVOCATE/EXPERT ON SICKLE CELL DISEASE

- 1) What is the objective of your organisation?
- 2) What are the past and current methods your organisation has used to creat awreness about the sickle cell disaes?
- 3) What are some of the charllenges of creating awareness on sickle cell disease in Ghana ?.
- 4) Would you recommend the use of mass media and other methods in awareness creation on the



INHERITANCE (1)**One or both parents normal AA**

A normal haemoglobin genotype inherits genes for normal HbA from both parents and is depicted as AA



The sickle cell trait inherits one normal HbA gene and one abnormal HbS gene and is depicted as AS



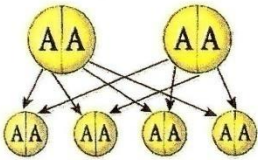
The harmless HbC trait inherits one normal HbA gene and one abnormal HbC gene and is depicted as AC



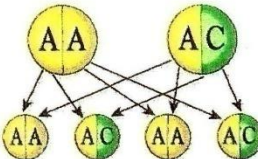
The beta thalassaemia trait (β^{th}) inherits one normal HbA gene and one abnormal β^{th} gene and is depicted as A β^{th}



If both parents are AA, they can have only AA children.



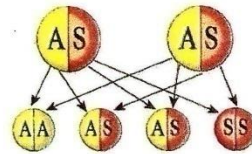
If one parent is AA and one AC, at each pregnancy there is a 1-in-2 chance that the child will be AA or AC.



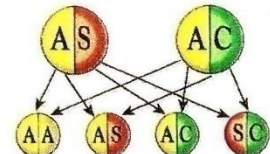
In most populations of African origin in the Caribbean, AS occurs in 10%, AC in 3.5%, and beta thalassaemia trait (β^{th}) in 1.5% (1.0% β^{th} and 0.5% β^{th}).

INHERITANCE (2)**Both parents have abnormal genes**

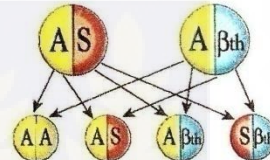
If both parents are AS, at each pregnancy there is a 1-in-2 chance that the child will be AS and a 1-in-4 chance AA or SS.



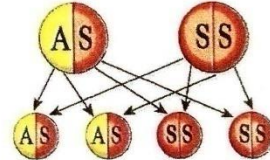
If one parent is AS and one AC, at each pregnancy there is a 1-in-4 chance that the child will be AA, AS, AC or SC.



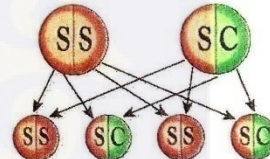
If one parent is AS and one A β^{th} , at each pregnancy there is a 1-in-4 chance that the child will be AA, AS, A β^{th} or S β^{th} .



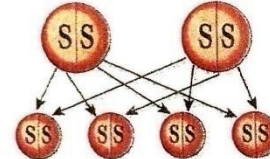
If one parent is AS and one SS, at each pregnancy there is a 1-in-2 chance that the child will be AS, SS.



If one parent is SS and one SC, at each pregnancy there is a 1-in-2 chance that the child will be SS or SC.



If both parents are SS, all children must be SS.

**Conclusions:**

- If one parent is normal, they cannot have a child with sickle cell disease.
- A child with sickle cell disease has to inherit abnormal genes from both parents.
- If both parents have sickle cell disease, all children must have sickle cell disease.

The KANAD which is an acronym for Konotey Ahulu Norm Ache Dice was designed by Professor Konotey-Ahulu and the concept is to determine the probable child one may have, depending on which type of dice is tossed. Each die is six sided. It is made up of three pairs of dice.

Pair one is: Ache Ache

Pair two is: Norm Norm

Pair three is: Ache and Norm

The 'Norm' stands for normal red blood cell and the "Ache" for the sickle cell blood cell. The KANAD is one of the simplest methods used in determining the probable SC status of a child yet to be born.

