EFFECT OF FEAR APPEALS IN HIV/AIDS MESSAGES ON THE INTENTION TO USE CONDOM AMONG COLLEGE STUDENTS IN BUNGOMA COUNTY

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Declaration by Candidate:

This thesis is my original work and has not been presented to any other university/institution.

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Dedication

This work is dedicated to my wife Anne Njeri, son Timiza and daughter Nia.

ABSTRACT

EFFECT OF FEAR APPEALS IN HIV/AIDS MESSAGES ON THE INTENTION TO USE CONDOM AMONG COLLEGE STUDENTS IN BUNGOMA COUNTY

BACKGROUND: HIV is mostly sexually transmitted with this mode accounting for 94 % of the incidence in Kenya. With no cure, the most efficient strategy is prevention mainly encompassing behavior change in our case the intention to use condoms. To enhance behavior change, the message can either focus on hope or fear with different efficacies. The more effective approach among these in sexual behavior change is however not known.

OBJECTIVE: To determine the effectiveness of fear in HIV messages on the intention to use condom among college students in Bungoma County.

METHODS: The study was an experimental design. College students from Kibabii Diploma Teachers College were enrolled into the experiment after meeting inclusion criteria. A sample size of 96 participants were picked using a statistical formula by R-core computer software and randomly divided into four equal groups. Each group was shown a different set of AIDS prevention messages. Threat and coping efficacy in these messages were manipulated in a two (high and low threat message) by two (high and low efficacy message) factorial design.

RESULTS: The median age was 21 with an approximately equal number of males and females. Eighty percent reported having sexual intercourse in the preceding one year period. Before the experiment, the levels of fear and efficacy were similar among all groups. The two groups with high threat level messages had higher fear induction scores than those groups with low threat messages at (44.0, 41.5) and (25.8, 24.8) respectively with a p-value 0.001. The participants in the two high efficacy message groups also recorded significantly higher levels of efficacy scores than those in the low efficacy groups at (61.3, 67.5) and (37, 39.8) respectively p-value 0.001.Intention to use condom was higher in the high efficacy and high threat group than all other 3 groups(32.9 vs 19.5, 22.3, 23.5). The high level efficacy messages were associated with higher scores than low efficacy messages after adjusting for fear induction post treatment.

CONCLUSION: Our study demonstrated that high threat worked better than low threat appeal messages in increasing the intention to use condom for our study population.

RECOMMENDATION: We recommend a study with a longer duration of follow up and more diverse study subjects to assess the conversion of intention to use condom to actual condom use.

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ABBREVIATIONS

EPPM- Extended Parallel Process Model

HIV – Human Immunodeficiency Virus

AIDS- Acquired Immunodeficiency Syndrome

ANC- Antenatal clinic

KDHS –Kenya Demographic Health Survey

NASCOP- National AIDS and STDs Control Council

ARV - Antiretroviral Drug

DEFINITION OF TERMS

Fear Appeals- these are messages in which the advertisers invoke fear by identifying the negative results of not using a product or the negative results of engaging in unsafe behavior (Williams, n.d.) They manipulate fear by projection of disease severity and recipient's vulnerability (Witte, 1998).

Fear-Internal negative emotional reaction comprising psychological and physiological dimensions elicited by a serious and personally relevant threat. It is conceptualized as a negative emotional reaction to a perceived threat (Witte, 1998).

Threat- danger facing people in their environments whether they are aware of it or not. as a message component comprises message features that provide factual or visual information about the severity of the threat and the target population's susceptibility to the threat(Witte, 1998).

Perceived Threat- Cognitions about a danger or harm that exists in an environment. It is composed of two distinct dimensions—perceived susceptibility (likelihood of personally experiencing the threat) and perceived severity (magnitude of harm from the threat). (Witte, 1998)

Perceived Susceptibility-Beliefs about one's risk of experiencing the threat(Witte, 1998).

Perceived severity- Beliefs about the significance or magnitude of the threat. Beliefs concerning the consequences should a specified event occur (Witte, 1998).

Efficacy -Cognitions about effectiveness, feasibility, and ease with which a recommended response impedes or averts a threat. Contains two underlying dimensions: response efficacy and self-efficacy (Witte, 1998).

Self-efficacy -Beliefs about one's ability to perform the recommended response to avert the threat (Witte, 1998).

Response efficacy -Beliefs about the effectiveness of the recommended response in deterring or avoiding the threat (Witte, 1998).

Danger control -A cognitive process eliciting protection motivation that occurs when one believes she or he is able to effectively avert a significant and relevant threat through self-protective changes. When in danger control, people think of strategies to avert a threat (Witte, 1998).

Danger control -responses -Belief, attitude, intention, and behavior changes in accordance with a message's recommendations (Witte, 1998).

Fear control -An emotional process eliciting defensive motivation that occurs when people are faced with a significant and relevant threat but believe themselves to be unable to perform a recommended response and/or they believe the response to be ineffective (Witte, 1998)

Fear control responses- Coping responses that diminish fear such as defensive avoidance, denial, and reactance (including issue and message derogation and perceived manipulative intent) (Witte, 1998).

1.0: INTRODUCTION

1.01 Background

In trying to understand the role of fear in HIV/AIDS prevention, it is important to trace the beginning of the disease and the changing understanding of the disease. Just like past epidemics, 'AIDS first appeared as a sudden, fatal, and a communicable disease' with all hallmarks of an epidemic: "a disease that spreads like wildfire, consumes lives, and then burns out, leaving devastation in its wake". It was associated with men who had sex with other men, and was actually referred to as GRID, gay related immunodeficiency disease and all those who were affected but denied gay links were assumed to be lying(Fee & Krieger, 1993).

Discovery of HIV virus in 1983 lead to characterization of aids as infectious and there was a vague association with body fluids which lead to morbid fear of the infected. In fact, people often refused to share clothes or utensils with the infected people (Fee & Krieger, 1993). The natural course of HIV/AIDS disease was however longer than other epidemic diseases and the understanding of the disease shifted from the epidemic to chronic disease. In wholly accepting the chronic disease model, most stakeholders in HIV/AIDS care forgot the fact that HIV is both infectious and preventable. Fear was used extensively in the earlier prevention messages where the bases of messages was the former understanding of AIDS as an epidemic (Fee & Krieger, 1993).

An alternative emerging paradigm is the recognition of AIDS as "collective chronic infectious disease and persistent pandemic". This takes care of the complexity of the

disease and allows the health workers to include aspects of chronic care and prevention in HIV programs (Fee & Krieger, 1993).

Fear based campaigns were rolled out in various countries, most notable of which were Australia and Uganda and were reported to be effective in reversing the incidence and stabilizing the prevalence(Green, Halperin, Nantulya, & Hogle, 2006).

1.02 Role of fear in HIV prevention

Fear is a negative emotion associated with danger and it incites animals, man included, to defend themselves. Amygdala is the part of brain that modulates fear memories before they are formed. This memory system, called fear conditioning is crucial for the acquisition and expression of fear conditioning, in which a neutral stimulus acquires aversive properties by virtue of being paired with an aversive event (Ledoux, 2003). Fear conditioning thus allows new or learned threats to automatically activate evolutionarily tuned ways of responding to danger.

1.03 HIV transmission.

HIV is mainly sexually transmitted with this mode accounting for approximately 94 % of the incidence in Kenya. Heterosexual sex in steady unions account for 44%, while casual heterosexual sex, female sex workers and their clients and men who have sex with other men account for 20%, 14% and 15 % respectively. Injection drug users and health facility related infections account for 3.8% and 2.5 %(Lawrence Gilmon, Kenya Patrick, Francis Oguya, Cheluget Boaz, 2009)

It is not curable currently and the mainstay of management of the condition is use of antiretroviral therapy (ART) to reduce the viral burden and allow the body’s immune

system to reconstitute. Early initiation of ART is associated with 41% reduction in heterosexual transmission of HIV due to reduced replication and consequently reduction in amount of virus secreted with genital secretions(M. S. Cohen et al., 2011).

1.04 Global burden

Globally, 35 million people in 2013 were estimated to be living with the virus with about 70 percent of the HIV/AIDS disease burden being in the Sub-Sahara Africa. There were 2.1 million estimated infections and 1.5 million estimated deaths in 2013 (UNAIDS, 2013).

1.05HIV Prevalence and incidence in Kenya

Kenya has mainly used Ante Natal Clinic (ANC) sentinel surveillance data for HIV planning in prevention, care, and treatment of the infected (Kenya National Bureau of Statistics; ICF Macro, 2008). Incidence had changed little over the 5 year period between the 2003 and 2008, with all age incidence ranging from 100,500 to 116,349.

Despite a decade of interventions, the AIDS prevalence remains high as shown by the statistics below(National AIDS and STI Control Programme, 2007)(National AIDS and STI Control Programme (NASCOP), 2014)(National AIDS Control Council, 2014)

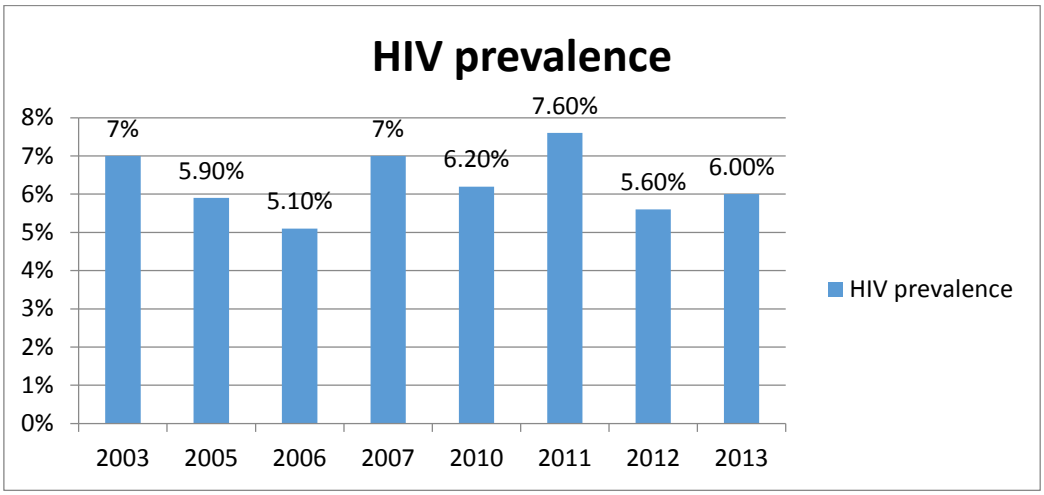

Figure 1. HIV prevalence 2003-2013

1.6 million Kenyans were living with the HIV virus with 1.4million being adults and 191,840 being children. In the same year, there were 88,620 new infections in adults and 12,940 in children 760,000 adults and 141,610 are in need of ART compared to 213,000 and 103,000 respectively in 2005 (National AIDS and STI Control Programme (NASCOP), 2014)

1.06 Sex Debut and Condom use among Kenyan youth

Sex debut is happening early in Kenya youths. In 2012, 11.6 % of girls and 20.2 % boys had sex when aged below15 years, and by 18 years, half of all youths had their debut. The rate of condom use among all youth who had sex was 32.5% (Kenya National Bureau of Statistics; ORC Macro, 2003). In 2008, the rate was 36.4 %, which was a mere 4 percentage points increase in a period of 5 years (Kenya National Bureau of Statistics; ICF Macro, 2008)

Condom use was reported at 33.7% and 64.5% among females and males who had sex debut at below 15 years compared to 66.9% and 57.6% respectively among all females

and males aged 15-24 years, meaning that those who had early sex debut were less likely to use condom (National AIDS and STI Control Programme (NASCOP), 2014)

1.07 Research Problem Statement

Fear is a negative emotion associated with danger and it enables animals, man included, to defend themselves. It is a known protective mechanism where animals run away from danger or confront it and it enhances memories of dangerous things (Ledoux, 2003, 2004). In spite of this knowledge, use on fear in HIV prevention is a risky business where deciding whether to use a fear based campaign is not simply a technical, straightforward, evidence-based determination. "Decisions to use or not use fear are almost always political, balancing issues of effectiveness, uncertainty, stigma, cultural leaning, religion, marginalization, emotional, burdens, justice, community participation, and scientific credibility "(Fairchild, Bayer, & Colgrove, 2015). Most American health professionals who work in HIV/AIDS do not support the use of fear arousal in AIDS preventive education, believing it to be counterproductive while many Africans, whether laypersons, health professionals, or politicians, seem to believe there is a legitimate role for fear arousal in changing sexual behavior (Green & Witte, 2006). The USA government through President's Emergency Plan for AIDS Relief (PEPFAR) advocated for abstinence until marriage and tied most of the funding to the following of the ABC, with many associated programmers ignoring altogether the promotion of condom use in schools(Santelli, Speizer, & Edelstein, 2013).The role of fear in HIV prevention is important yet controversial, and has been so for 30 years (O'Grady, 2006).

Given the millions of people dying each year and the current disease burden, "the topic of whether fear arousal has a legitimate place in HIV prevention demands

reconsideration"(Halperin, de Moya, Pérez-Then, Pappas, & Garcia Calleja, 2009). Reliance on common sense for design of fear appeal message can be misleading because fear can result in two opposite actions. A patient with a certain disease condition, for example, can fail to see a doctor because he is afraid of finding out what disease condition he has or he can see the doctor because he is afraid of the disease he has (Leventhal, 1965).

Our study seeks to find out the value of fear appeals in the HIV messages so as to determine the amount of message manipulation that will give the maximum benefit in terms of behavior change. This will be approximated in the study by the intention to use condoms among the youths in the ages15-24 years.

Our literature searches on this topic did not find much data on this in Sub –Sahara Africa and Kenya

1.08Study Justification

Despite the advances in treatment which mainly retards the progression of HIV disease, prevention remains the most effective weapon against HIV epidemic. Consistent and proper condom use is a documented effective method of HIV prevention. Since HIV/AIDS is mainly sexually transmitted here in Kenya, and the rate of condom use is low, research is needed to find effective ways of encouraging sexually active youth to practice safe sex to prevent HIV/AIDS. Fear as a negative emotion protects animals by preserving dangerous memories, helping them recognize danger. If fear is used properly, it can help in HIV/AIDS prevention campaigns by associating risky behaviour of having unprotected sex with unpleasant effects of the AIDS disease and

its treatment. There are two approaches to HIV/AIDS prevention: factual messages can be manipulated to portray hope (low threat) or fear (high threat). The most effective approach in reducing risky sexual behaviour is not known. This experiment will study which one of the two is the more effective method on changing the intention to use condom among Kenyan youths, a large percentage of whom are not using condoms.

1.09 Research question

What is the effect of fear in HIV messages on the sex behavior as measured by the intention to use condom among college students in Bungoma County?

1.10 Broad Objective

To determine the effects of level of fear in HIV/AIDS messages on the intention to use condom among college students in Bungoma County.

1.11 Specific Objectives

1. To measure the amount of fear evoked by high threat and low threat messages
2. To measure the perceived efficacy of condoms in high efficacy and low efficacy messages.
3. To measure the self-efficacy of condom use among the participants
4. To measure the intention to use condoms among the participants after various scenario messages.
5. Find out the effect of fear and response efficacy on intention to use condom.

2.0 LITERATURE REVIEW

We will look at the existing literature, beginning with the literature available at the global scene. The African and East African literature will be reviewed later.

2.01 Fear Appeal in HIV/AIDS Prevention Globally

Scaring people to motivate them to change their behavior has been practiced for millennia (Popova, 2012). Threatening health messages, in the social and health psychology literature referred to as fear appeals, are widely used in health communication(Ruiter, Kessels, Peters, & Kok, 2014).“Fear appeals are persuasive messages designed to scare people by describing the terrible things that will happen to them if they do not do what the message recommends(Kim Witte, 1991).

A campaign called ‘Grim Reaper’ was used in Australia in 1987 “remains the most remembered piece of AIDS media in Australia”(Slavin, Batrouney, & Murphy, 2007)

Though fear and threat have been used interchangeably to express the same notion, they mean different things and have different outcomes. By definition, fear is an emotion which is accompanied by a high level of arousal elicited by threat that is perceived to be significant and personally relevant while threat is an external stimulus that exists with or without a person’s knowledge (Kim Witte, 1991)

Though use of fear appeals in communication and especially in health communication started much earlier and are as old as mankind. One of the first studies was performed by Janis and Feshbach where they explored the effect of fear on dental hygiene among college students (Janis & Feshbach, 1953). The study used strong, moderate and minimal fear appeals. A control was used as the fourth group. The authors found that

the minimal appeal group had the greatest conformity to the behavior suggested in the experiment in the long term, but noted that strong fear appeal should be accompanied by corresponding level of reassurance by means of a high efficacy solution. This finding for a long time was accepted by health educators in decades, often uncritically as "near holy writ that you should not try to scare people into healthy practices", including HIV/AIDS prevention, smoking prevention and cessation (Hill, Chapman, & Donovan, 1998)

In the studies that followed, evidence continued to accumulate to show that actually strong fear appeals work (Leventhal, 1965). The amount of threat in a message and the efficacy of the suggested coping mechanisms are each necessary but not sufficient conditions for behavior change. The two conditions must be present at the same time for the behavior change to occur(Leventhal, Howard; Daniel, 1980). High fear arousal paired with information on what one stands to lose has also been demonstrated to be more effective than when it is coupled with information on what one stands to gain (Ruiter, Verplanken, Kok, & Werrij, 2003)

Fear appeals have been used more extensively in Africa but less by the American personnel working in the HIV sector. This difference attributed to American post-sexual-revolution values and beliefs lead to rejection of fear arousal strategies. On the other hand, pragmatic realism based on personal experience underlies Africans' acceptance of and use of the same strategies in AIDS prevention campaigns. African views have more empirical support (Green & Witte, 2006; Leventhal, Howard; Daniel, 1980; Ruiter et al., 2014; Smerecnik & Ruiter, 2010; Kim Witte, 1991)

Smerecnik and Ruiter (2010) performed an experimental study to examine the role of fear appeals in promoting condom use. They focused on the role of cognitive beliefs of attitude, subjective norm, and self-efficacy and anticipated regret. Simple effect analyses showed that when threat was high, participants in the high coping condition reported a higher intention than those in the low coping condition (Smerecnik, Ruiter 2010).

Fear based campaigns are more effective in raising awareness and changing attitudes of those already engaging in the desired behavior(Bourne, 2010)

Fear appeals could also have unintended consequences which include avoidance by ignoring the fear arousing message and turning one's attention somewhere else. Denial can lead believing the harmful consequences are unlikely or impossible while counter arguing which involves rejecting the whole notion of risk believing it to be exaggerated by experts might also result. Finally othering which is deflecting the message away from oneself to others groups or individuals might also occur(Bourne, 2010; Janis & Feshbach, 1953; Slavin et al., 2007).

Although adolescents and young adults know about AIDS and its prevention, they often do not protect themselves which may partly be explained by the fact they perceive themselves as invulnerable in despite fear of AIDS (Kim Witte, 1991). Young persons may deny the threat of AIDS because they do not believe they are truly susceptible to the disease. The result is a failure of young persons to protect themselves adequately against HIV/AIDS.

Care should be taken not portray HIV/AIDS as a less serious disease as it was portrayed in the past. Our effort to remove the stigma of having AIDS, could result in creating “a culture of not caring about the disease”. The message should come out clear that there is nothing positive about having HIV and it is not OK to have the HIV disease(Harvey, 2003).

Death and non-death threats both work in fear appeals in young people contrary to the opinion that death threats works well in those aged above 40 years. One type of death threat showing the effect on one’s death on the loved ones was found to be effective across all age segments(Henley & Donovan, 2003). A non-death threat is use of information about the disease effect and undesirable treatment side effects(Slavin et al., 2007)

2.02 Fear Appeals in HIV Prevention in Africa and East Africa

When HIV/AIDS was discovered, the prevention campaigns widely utilized fear arousing messages strategy through images of decay where emaciated bodies were shown and impending doom shown as tombstones and graveyards(Bastien, 2011)

A study in Tanzania found that the youths felt more susceptible if they felt that HIV messages targeted them. The highest response efficacy was achieved when youths were shown images or written messages that contained the ABCs of HIV prevention and instructions on how to use condom. Fear appeals like portraying HIV as the Flood and prevention as the Noah's Ark, a skull with the words “UKIMWI/AIDS”, and paintings that showed discrimination of orphans by relatives were among others used to scare people to protect themselves (Bastien, 2011).

Uganda success in lowering prevalence of HIV is one of the best success stories in the fight against the pandemic(Unaids, 2010). Multiple interventions were employed. These include empowering women, mobilizing PLWAs and involving them in prevention, fighting stigma as well as involving faith-based organizations. They also deliberately used fear, portraying HIV as the 'SLIM' disease and adopting message like 'beware of AIDS: AIDS kills(Green et al., 2006).

2.03 Fear Appeals In Kenya

Fear appeals have also been used in Kenya, but their use has not been evaluated. In a study conducted in 1998 by Witte, HIV/AIDS prevention materials in use at that time were evaluated for fear content and the efficacy message present. Most posters evaluated had high levels of fear but did not have high efficacy levels. One poster evaluated had a man and a woman waving at each other after an affair and their images were showing to deteriorate into six images, each with a more advance state of AIDS disease. It had a "AIDS KILLS: USE CONDOM message, but had no further information on condom use. Pamphlets were found to have a better mix of fear and efficiency, and this could be attributed to the fact that they allow for more content. High levels of fear were already found to be prevailing among the female commercial sex workers and truck drivers involved in the study(K. I. M. Witte, 2010).

Kenya Government and non-governmental agencies have been crafting increasingly positive messages that "accept the reality of sexual relationships, asking partners to protect each other". This is happening even as other countries like Germany and USA increase the use of fear appeals. In Germany, AIDS is being likened to Hitler and Stalin, who were mass murderers (Juma, 2016).

It is important to evaluate fear appeals before abandoning their use because their failure could be due to improper use.

2.04 CONCEPTUAL AND THEORETICAL MODEL

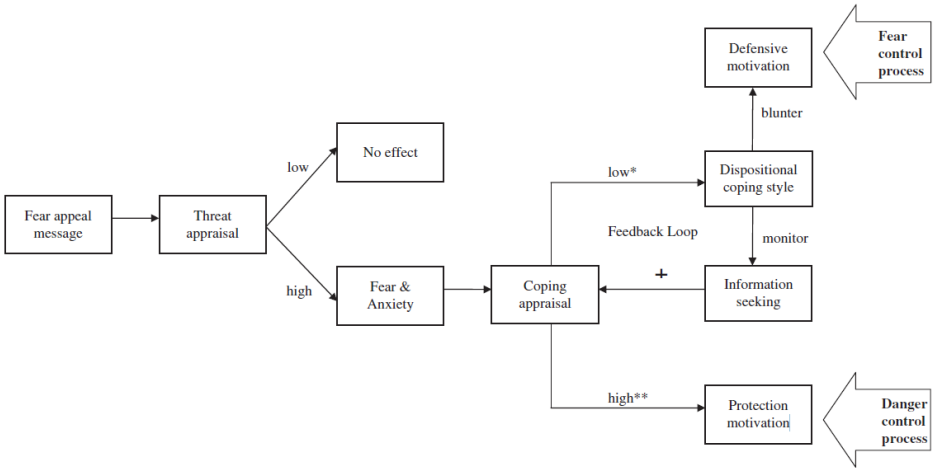

Figure 2:Extended Parallel Process Model (EPPM) (Jiyeon So, 2013)

This study will be based upon the Extended Parallel Process Model (EPPM),(Kim Witte, 1996). This model was developed by Kim Witte in 1991 to explain the role fear in communication and has been modified by Jiyeon and Popova(Popova, 2012; So, 2013).

The constructs which are of main focus to the EPPM are: fear, threat (with its two components—perceived severity and perceived susceptibility), efficacy (comprising self-efficacy and response efficacy), and two types of responses (danger control and fear control). According to Leventhal, there are two independent parallel reactions to fear appeals: (I) a cognitive, danger control process which results in thoughts about

threat and actions to avert it, and (ii) an emotional, fear control process which results in people controlling their fear through denial, avoidance, reactance, etc.(Leventhal, 1965)

When a person is presented with a fear appeal message which is severe and the person feels susceptible (these are components of threat), it initiates two the appraisals in the individual. These are threat and coping appraisals. The perceived threat is analyzed first and if the appraisal results in moderate to severe perceived threat, fear is elicited while if mild or no threat is perceived, the message is not processed further. When the perceived threat and perceived efficacy are high, the recipient is motivated to control the danger (adaptive changes). The appraisal for the perceived threat is usually weighed with the perceived efficacy in a joint appraisal process (Kim Witte, 1991, 1996). The fear control processes are activated when the perceived threat is high and the perceived efficacy is low. These are maladaptive changes.(Peters, Ruiter, & Kok, 2014; K Witte & Allen, 2000; Kim Witte, 1996). The following table represents these constructs.

	Low Threat	High Threat
High Efficacy	Low fear, therefore message not processed further	Control danger: adaptive change
Low efficacy		Control fear: maladaptive change

Figure 3:Message construct

3.0: METHODOLOGY

3.01 Study Site

The study was conducted at Kibabii Diploma Teachers Training College, located in Bungoma County, in Western region of Kenya. The college was established in 2007 and is a government teachers education college. It offers 3-year diploma qualifications in primary, secondary and Early Child Development.

3.02 Study Population

The college had enrollment of approximately 780 students who are both males and females. The ages range from 18-26 years.

3.03 Sample size

The objective of the study was to compare the outcomes of four groups. The outcomesevaluated were fear induction, condom use efficacy and intention to use condom which were measured on a continuous scale. The Likert scale items for each outcome were summed up. Thus in order to be 95% sure that we detect a difference in the average outcome scores between the four groups with probability equal to 80% we estimated an appropriate sample size using the appropriate formula for one way Analysis of Variance (ANOVA) in R statistics software(R Development Core Team (2015), 2015). Under type I error of 5%, power of 80%, four groups to be compared, and a medium effect size, set at 0.35 according to Cohen (J. Cohen & Cohen, 1977a, 1977b), our sample size per arm were 24 for a total of 96. Wechose an effect size of 0.35 as a clinically meaningful effect size we desired. This gave a minimum percentage

variability in the outcome that could be explained by the independent (or grouping) variable. From a population of 780 this sample was achieved.(appendix 1)

3.04 Inclusion criteria

Students who met the following criteria were included in the in the study

-those registered for the academic session

3.05Exclusion criteria-

Students who might have had prior health profession training were to be excluded to avoid bias. No subject had such training thus none was excluded.

3.06 Design

This was an interventional experimental design.

Students were selected in a systematic random sampling. With 96 subjects required in a population of 780, every eighth student in the master school register was picked for the study and balloted into four groups. Threat and efficacy were manipulated in the resulting groups in a 2(high and low threat message) x 2 (high and low efficacy message) factorial design. Each group was shown a different set of AIDS prevention messages. The independent variable were threat and condom efficacy. The dependent variables were reported fear, reported condom efficacy andintentions to use condom. The dependent variable was assessed immediately following the experiment. Every experimental group had approximately equal number of male and female students.

3.07 Procedure

The participants were exposed to combinations of the independent variables by

reading written messages with pictures. Each group was isolated into a room to avoid intergroup communication. The messages were factual and truthful about HIV virus infection, disease manifestations and prevention.(appendix 5)

The four groups were as follows;

Group 1-High threat, high coping message

Group 2-High threat and low coping messages.

Group 3-Low threat and high coping message

Group 4-Low threat and low coping message

All participants filled pretest questionnaire to assess the prevailing levels of fear and condom use efficacy (appendix 3).

To equalize Hawthorne effect among groups, the experiment was described as a study to develop HIV/AIDS education materials. Subjects were told that the materials are being developed for HIV/AIDS prevention and that their reactions to the messages were needed to refine them. Participants were directed to study the materials projected carefully. They then immediately filled the post-test questionnaire(appendix 4). After the experiment participants were debriefed as to the purpose of the study and given HIV/AIDS information brochure in addition to oral HIV/AIDS education. Three study assistants helped the principle investigator conduct the experiment.

3.08 Stimulus Materials(appendix 5)

Each message manipulation consisted of:

1) A core message based on a public health service message

2) A case study of a fictitious AIDS patient, and

3) A message about the effectiveness of condoms use.

Photos were embedded in the core message and the case study. Threat was varied in the first two sections while efficacy was manipulated in the section 3.

Each message contained passages from HIV textbooks andGovernment publications. All of the information in the messages was true; each message simply emphasized different issues on the HIV/AIDS (e.g. Condoms work most of the time; condoms fail some of the time)

3.09 Data Collection Instruments And Measures(appendices 3 and 4)

The questionnaire was used to capture the fear induction, condom efficacy and the intention to use condom in the following 6 months as measure of attitude change. Verbal report of fear has been found to be a good prognosticator to physiologic responses to fear (Edelman, 1970). The amount of fear aroused was measured by the eight items in question 1 on a 7 point likert scale. (e.g., As you read the message on HIV/AIDS, did you feel ……. Frightened, afraid, worried, nervous/ uncomfortable, , anxious, nauseous, tense….. and the responses ranged from 1(not at all) to 7(very much) (Ruiter et al., 2003).The minimum score was be 8(1*8) meaning minimal fear and maximum score will be 56(7*8) meaning maximal fear.

The efficacy portion of the message tried to convince individuals they are *able* to perform the recommended response (i.e., self-efficacy), and that the recommended response *effectively* averts the threat (i.e., response efficacy). Fear messages work best when the response suggested is efficacious. Does the suggested intervention work, and are the subjects able to use the intervention?

Response efficacy was measured in this experiment using question 2 and 3(see post test questionnaire appendix) with minimum score of 2 and maximum of 14. Self-efficacy was measured using objective 3. Questions 4 and 5 were used to measure this and had scores of 9 to 63. A total efficacy score thus had minimum score of 11 and maximum score of 77.

Intention to perform a behavior is deemed the best predictor of the said behavior. The degree of correspondence of levels of specificity of intention and behavior, the stability of intention and the degree to which carrying out the intention is completely under the subjects control (M. Fishbein & Ajzen, 1975; Martin Fishbein & Ajzen, 1975). Intention to use condom was measured using questions 6-10 with 5 items and had score ranging from 7 to 35. A higher score meant higher intention to use condom.

3.10 Validity And Reliability

A questionnaire with pretested items assessing fear, efficacy and intention to use condoms was used. Verbal response have been validated as prognosticator of physiological response to fear(Edelman, 1970). Validity coefficients of many psychological tests correlate well with medical tests. The items were adopted from similar studies(Smerecnik & Ruiter, 2010; Kim Witte, 1991). Items assessing fear efficacy and intention showed good reliability with Chronbachs Alpha of 0.808, 0.709, and 0.755 respectively in our pilot study at a different campus from one in which the study was done (Tavakol & Dennick, 2011).

3.11 Statistical Data Analysis

Data analysis was done using R: A language and environment for statistical computing

(R Development Core Team (2015), 2015)Categorical variables were summarized using frequencies and the corresponding percentages. Continuous variables were summarized using mean and the corresponding standard deviation (SD) if the Gaussian assumptions were satisfied otherwise median and the corresponding inter quartile range (IQR) was used. Gaussian assumptions were assessed using histograms and Shapiro - Wilk test for normality. Differences in the baseline scores between the treatment groups were compared using one way analysis of variance (ANOVA). Independent samples t-test was used to compared scores between any two groups. Effect of intervention on the fear induction scores, condom efficacy scores, and the intention to use condom scores was assessed using analysis of covariance (ANCOVA), and linear regression models. We presented the regression estimates and the corresponding 95% confidence interval (95% CI).

We present the results using tables and graphs.

3.12 Ethical Considerations

Approval was sought and granted (FAN: IREC 1600)from Moi University and Moi Teaching and Referral Institutional Research and Ethics Committee (IREC)(appendix 6). Permission to conduct the study wasalso sought and granted from the management of the Kibabii Diploma Teachers College.Students in various groups got different messages with different threat levels. This might have led to different perception of personal vulnerability and severity of the HIV/AIDS disease. This ethical problem was addressed by debriefing immediately after the experiments.A signed informed consent was obtained from the participants. Participantwere free to quit study at any time without explanation.There were no OR minimal risks to the participants of this study.

Investigators ensured minimal discomfort during the time of experiments.There was no reward for participation in this study.

3.13Confidentiality

Participants' information remained confidential and wasnot used for any other purpose other than the study. All experiments were conducted in a secluded room with each individual subject given ample space. Filled questionnaires were kept in safe custody by the principal investigator in order to ensure that confidentiality is maintained throughout the study. No names were used and the electronic data was protected by use of password.

4.0 RESULTS

4.1 Demographic characteristics of the participants.

A total of 96 participants were recruited. The mean age was 21.67 years. The mean ages per group were 22.06, 21.62, 21.66 and 21.41 for high fear-high efficacy, high fear-low efficacy, low fear-low efficacy and low fear high efficacy groups respectively. There was no significant difference in the ages among the four groups(F .0.63, pvalue of 0.78). Half of the participants were male, 46 (48%). Each group had equal number of female and male participants. 77 participants representing 80% had engaged in sex in the one year before the day of experiment.

Table 1: Demographic characteristics

Variable	N	mean/percentage
Age (Years)	96	21.67 years
Male	46	48%
Female	50	52%
Marital status		
Married	1	1.0%
Single	95	99.0%
Ever had sex in the past 1 year	96	77 (80.2)

4.2 Prevailing levels of fear

Table 2: Summary of the fear score by treatment arms before intervention

Threat messages levels	Efficacy messages levels	n	Mean (SD)	Range	p value
L	L	24	43.5 (6.0)	29.0 - 56.0	
H	L	24	37.1 (11.0)	19.0 - 56.0	
L	H	24	39.2 (9.2)	19.0 - 56.0	0.088
H	H	24	41.5 (8.9)	22.0 - 56.0	

[F]One way ANOVA to compare the four groups

The four groups were similar in fear induction scores at enrollment, p = 0.088.

4.3Response efficacy before treatment

Table 3: Summary of the response efficacy by treatment arms before intervention

Threat messages levels	Efficacy messages levels	n	Mean (SD)	Range	P[F]
L	L	24	9.3 (2.5)	2.0 - 14.0	
H	L	24	9.0 (3.2)	2.0 - 14.0	
L	H	24	9.2 (2.5)	2.0 - 14.0	0.922
H	H	24	8.8 (3.0)	2.0 - 14.0	

[F]One way ANOVA to compare the four groups

At enrollment the participants were similar based on the response efficacy scores, p = 0.922.

4.4Fear induction after treatment

Table 4: Fear induction posttest

Threat messages levels	Efficacy messages levels	n	Mean (SD)	P^F
L	L	24	25.8 (10.6)	
L	H	24	24.8 (14.6)	0.991
H	L	24	44.0 (14.1)	
H	H	24	41.5 (14.6)	0.991

Among the participants who had received low level threat messages, there was no evidence of difference between the low level and high level efficacy messages, (25.8 (SD: 10.6) vs. 24.8 (SD: 14.6), p = 0.991). Similarly, among those who received high level threat messages, there was no significant differences between those who had received low efficacy and high efficacy messages, (44.0 (SD: 14.1) vs. 41.5 (SD: 14.6), p = 0.991). Regardless of the level of efficacy, high threat level messages induced higher fear induction scores. The scores were (41.5 (SD: 14.6) and vs. 25.8 (SD: 14.6), p<0.001) for high threat and low threat respectfully in the low efficacy groups.In high efficacy group, fear induction scores were (44.0 (SD: 14.1) vs. 24.8 (SD: 12.1), p<0.001) for high threat and low treat groups.

We fitted a regression model adjusting for the baseline fear induction scores to explain the differences.

Table 5: Effect of treatment on the fear induction score

	Coefficient(95% CI)
Intercept	26.4 (12.5, 40.3)
Fear Induction score at enrollment	-0.0 (-0.3, 0.3)
Threat messages levels (H vs. L)	15.6 (8.0, 23.2)
Efficacy messages levels (H vs. L)	-1.0 (-8.5, 6.5)
Threat messages levels (H) * Efficacy messages levels (H)	3.6 (-7.1, 14.3)

After adjusting for the enrollment fear induction score, there was sufficient evidence from the data that the participants who received high level threat messages were more likely to have higher fear induction scores, 15.6 (95% CI: 8.0, 23.2). There was no evidence of a combined effect of high level threat messages and high level efficacy messages, 3.6 (95% CI: -7.1, 14.3) on fear induction scores.

4.5Response efficacy post test

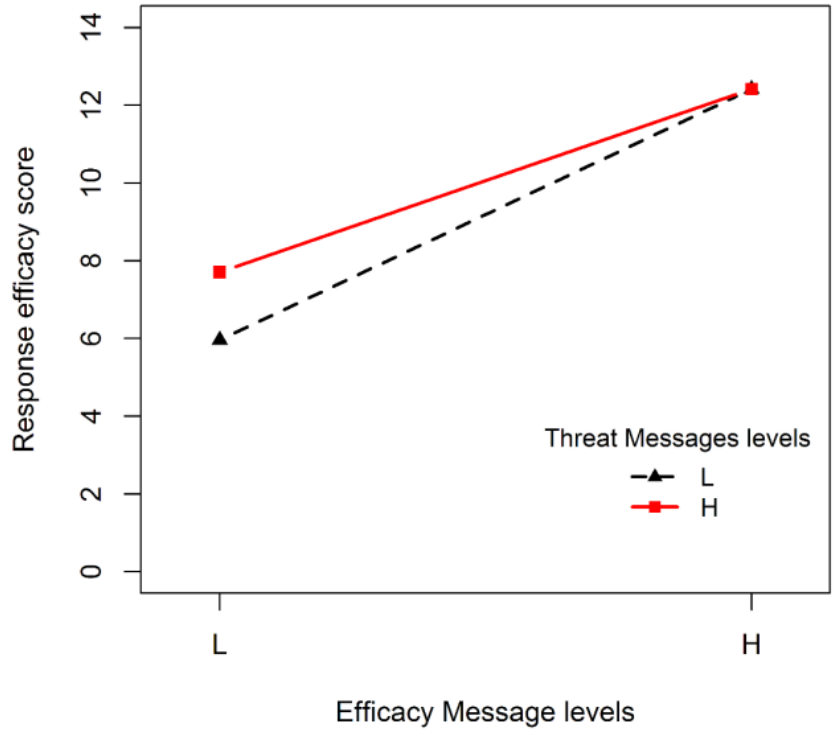

Figure 4: Interaction plot of threat and efficacy messages on response efficacy score.

Participants who received high level efficacy messages were associated with high response efficacy scores, (12.4 (SD: 2.0) vs. 6.0 (SD: 2.2), p<0.001). Similarly, conditional on the high level threat messages, the participants who had received high level efficacy messages were associated with high response efficacy scores, (12.4 (SD: 2.0) vs. 7.7 (SD: 3.4), p<0.001).Among the participants who had received low level efficacy messages, there was significant difference between the low level and high level threat levels messages, (6.0 (SD: 2.2) vs. 7.7 (SD: 3.4), p = 0.326). Similarly,

among those who received high level efficacy messages, there was no significant differences between those who had received low level threat and high level threat messages, (12.4 (SD: 2.0) vs. 12.4 (SD: 2.0), p = 0.991).

Table 6: Effect of threat and efficacy messages on response efficacy

	Coefficient(95% CI)
Intercept	7.0 (5.1, 9.0)
Response efficacy score at enrollment	-0.1 (-0.3, 0.1)
Threat messages levels (H vs. L)	1.7 (0.3, 3.1)
Efficacy messages levels (H vs. L)	6.4 (5.0, 7.8)
Threat messages levels (H) * Efficacy messages levels (H)	-1.8 (-3.7, 0.2)

Compared to low level threat messages, the high level threat messages were associated with higher scores of response efficacy, 1.7 (95% CI: 0.3, 3.1) after adjusting for the enrollment response efficacy score. Similarly, after adjusting for the enrollment response efficacy score, high level efficacy messages compared to the low level efficacy messages were associated with 6.4 (95% CI: 5.0, 7.8) response efficacy scores. There was no evidence of the effect of the interaction between threat and efficacy messages on the response efficacy scores, -1.8 (95% CI: -3.7, 0.2).

4.6 Self efficacy scores post test

Table 7: Summary of self-efficacy score post treatment

Threat messages levels	Efficacy messages levels	N	Mean (SD)	Range
L	L	24	31.0 (10.5)	15.0 - 55.0
H	L	24	32.1 (15.2)	9.0 - 59.0
L	H	24	48.9 (8.7)	24.0 - 60.0
H	H	24	55.1 (8.5)	36.0 - 63.0

The self-efficacy scores were significantly higher for the participants who received high level efficacy messages compared to those who received low level efficacy messages among those who received low level threat messages, (48.9 (SD: 8.7) vs. 31.0 (SD:10.5), $p < 0.0001$), and among the high level threat messages (55.1 (SD: 8.5) vs. 32.1 (SD: 15.2), $p = <0.0001$).There was a significant difference between the high and low level threat messages among those who received high level efficacy messages, (55.1 (SD: 8.5) vs. 48.9 (SD: 8.7), $p = 0.014$) but not among those who received low level efficacy messages, (32.1 (SD: 15.2) vs. 31.0 (SD: 10.5), $p = 0.784$).

We fitted a regression model to explain the self-efficacy scores.

Table 8: Effect of intervention on the self-efficacy score

	Coefficient(95% CI)
Intercept	31.0 (26.6, 35.5)
Threat messages levels (H vs. L)	1.0 (-5.2, 7.3)
Efficacy messages levels (H vs. L)	17.8 (11.6, 24.1)
Threat messages levels (H) * Efficacy messages levels (H)	5.2 (-3.6, 14.0)

Results show that high efficacy level messages were associated higher self-efficacy scores, 17.8 (95% CI: 11.6, 24.1).

4.7 Condom use perceived efficacy scores

We combined the response efficacy scores and the self-efficacy scores to get the condom use perceived efficacy scores. Summary of the scores were as shown in Figure 4. Participants who received high efficacy messages were associated with higher perceived condom use scores, (61.3 (SD: 8.9) vs. 37.0 (SD: 10.9), $p<0.0001$) among those who received low threat messages, and (67.5 (SD: 9.8) vs. 39.8 (SD: 17.5), $p<0.0001$) among those who received high level threat messages.

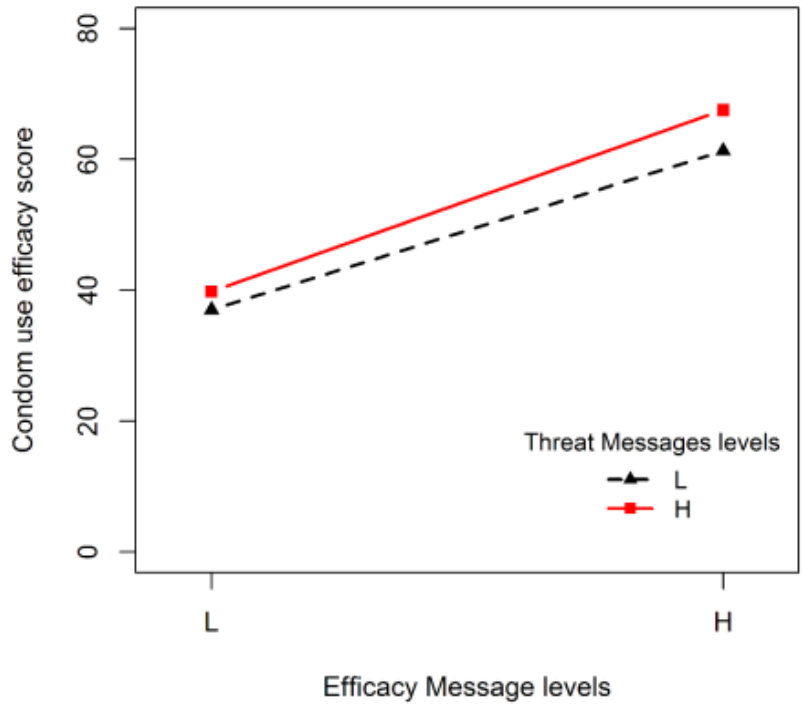

Figure 5: Interaction plot of condom use perceived efficacy scores

Among those who received high level efficacy messages, the participants who received high level threat scores had a significantly higher condom use efficacy score compared to those who received low level threat messages, (67.5 vs. 61.3, p = 0.025). There was no significant difference among the participants who received low efficacy messages between the participants who received high level threat messages compared to those who received low level threat messages, (39.8 (SD:17.5) vs. 37.0 (SD:10.9), p = 0.510).

A regression model to assess the effect of threat and efficacy messages was fit, and the results were as follows:

Table 9: Effect of intervention on the condom use efficacy score

	Coefficient(95% CI)
Intercept	37.0 (32.1, 41.9)
Threat messages levels (H vs. L)	2.8 (-4.1, 9.7)
Efficacy messages levels (H vs. L)	24.3 (17.4, 31.2)
Threat messages levels (H) * Efficacy messages levels (H)	3.5 (-6.3, 13.2)

From the model, there was evidence that the determinant of high condom use efficacy scores was high level efficacy messages, 24.3 (95% CI: 17.4, 31.2).

4.8 Intention to use condom

The intention to use condom among the participants after administering the intervention was assessed. The findings were as shown in table below.

Table 10: Summary of intention to use condom score post treatment

Threat messages levels	Efficacy messages levels	N	Mean (SD)	Range
L	L	24	19.5 (8.5)	8.0 - 35.0
H	L	24	22.3 (10.1)	5.0 - 35.0
L	H	24	23.5 (10.2)	8.0 - 35.0
H	H	24	32.9 (2.7)	23.0 - 35.0

Higher scores for the intention to use condom was observed among those who had received high level efficacy messages, 32.9 (SD: 2.7) vs. 22.3 (SD: 10.1), p <0.0001) among those who received high level threat messages, but not significant, (23.5 (SD:

10.2) vs. 19.5 (SD: 8.5), p = 0.144) among those who received low level threat messages.

The intention to use condom score was significantly high among those who received high level threat messages and high level efficacy messages compared to those who received low level threat messages and high level efficacy messages, (32.9 (SD: 2.7) vs. 23.5 (SD: 10.2), p = 0.0002) but not among those who received low level efficacy messages and high level threat messages compared to those who received low level efficacy messages and low level threat messages, (22.3 (SD: 10.1) vs. 19.5 (SD: 8.5), p = 0.294).

Table 11: Effect of intervention on the intention to use condom score

	Coefficient(95% CI)
Intercept	2.6 (-2.3, 7.6)
Fear induction score post treatment	0.0 (-0.1, 0.1)
Condom use efficacy score post treatment	0.5 (0.3, 0.6)
Threat messages levels (H vs. L)	1.6 (-2.4, 5.6)
Efficacy messages levels (H vs. L)	7.0 (2.4,11.6)
Threat messages levels (H) * Efficacy messages levels (H)	4.9 (-0.3, 10.1)

After adjusting for fear induction score post treatment, and condom use efficacy score post treatment, high level efficacy messages compared to the low level efficacy messages was associated with higher scores for intention to use condom, 7.0 (95% CI: -11.6, 2.4).

5.0 DISCUSSION

According to our study, the mean age of the participants was 21.6. This is expected given that most of tertiary colleges admit students just after they complete form four. Eighty percent of participants had already had sex. This is much higher than the KAIS 2012 estimate of 66% and 59 % for women and men respectively in the age bracket of 15-24 years(Kenya National Bureau of Statistics; ICF Macro, 2008). Given that the main mode of HIV transmission in Kenya, sexual contact, is 93 percent, with heterosexual intercourse accounting77% of incident infections, this higher rate of sexual intercourse among the young adults should present a new worry among the policymakers in HIV/AIDS prevention interventions(Lawrence Gilmon, Kenya Patrick, Francis Oguya, Cheluget Boaz, 2009).

5.1 Prevailing Levels Of Fear

Our study revealed no significant differences in the levels of fear among all the participants before the experiment. The average fear induction score on a scale of 1-7 was 5.04. This shows there were already high levels of fear. These can be attributed to extensive HIV/AIDS awareness messages that the participants have grownup with. Ina Namibian study, a significant number of respondents, 79.4 reported scored a fear score of 4 or higher on a scale of 1-5(Muthusamy, Levine, & Weber, 2009). The main aim of assessing the prevailing fear was to make sure the groups were homogeneous before stimulus materials. There was no significant difference in the 4 groups.

5.2 Fear Induction Post Treatment

We were successful in inducing fear using our stimulus materials. Those who received higher threat materials regardless of the levels of efficacy had higher fear scores. In one of the earliest studies in fear appeals, seventy four percent subjects in high threat appeal group reported being more worried about the dental condition after exposure to high threat messages compared to fourty eight percent in minimal fear groups(Janis & Feshbach, 1953). In a study by Witte Kim, similar results were found where those participants in the higher threat group were more fearful of HIV/AIDS than those in moderate and low threat groups. There was a significant difference between subjects in high threat and low threat groups (mean 4.57 vs 3.02 on scale of 1-7)(Green & Witte, 2006). In another study done in 2010participants in the high-threat condition experienced more fear (mean 2.95, SD 1.43) than participants in the low-threat condition (mean 1.51,SD 0.99 p 0.001)(Smerecnik & Ruiter, 2010). A study by Lennon and Lentfro found that high threat public service announcements were most effective in inducing fear among a group of 30 youths. Strongest emphasis in design of fear appeal messages should thus be placed on ability of the message to raise high levels of fear. This is done through emphasizing susceptibility and having a strong visual elements(Lennon & Rentfro, 2010).Fear is associated with a higher concentration at the presentation of the message(Ordoñana, González-Javier, Espín-López, & Gómez-Amor, 2009). This might result in better understanding and memory of the message being delivered. This is in agreement with various country programs that used threatening messages in fight against HIV. In Uganda, health messages presented a non-ambiguous message about health risks associated with HIV infection

and then presented various effective interventions to deal with that. The result was that people changed their sexual behavior and consequently, HIV prevalence and incidence fell(Green, 2005; Green et al., 2006; Ntshebe, Pitso, & Segobye, 2006).

5.3 Perceived Efficacy Posttest

To get perceived condom efficacy score ,response efficacy and the user's self efficacy aggregated. In our study, high coping/efficacy messages elicited greater perceived scores and efficacy in message was thus the main determinant of response efficacy. Threat did not contribute significantly to perceived efficacy scores. This is in agreement with the work of Smerecnik and Ruiter. In their study, the coping manipulation was successful. Participants judged condom use to be more effective in averting the threat of HIV infection when they were in the high coping condition (Mean 4.96, SD 1.05) than when they were in the low coping condition (Mean 4.03, SD 1.47) (Smerecnik & Ruiter, 2010). Perceived efficacy is an important component of fear message analysis as it determines how the message is processed further. When the perceived efficacy is low, and the message recipient feels that there is nothing that can be done about the problem, he/she embarks on processes that on seek to control the fear they feel and not address the danger posed in the message. Controlling danger is a cognitive process as opposed to controlling fear, which is an emotion.(Kim Witte, 1991).

5.4 Intention to use condom.

Our results show that both threat levels and efficacy levels affect the intention to use condom. Intention to use condom was significantly higher among the participants who received high threat levels and high efficacy messages compared to those that received low threat and low efficacy messages. In a study by Witte, subjects in high threat condition had intended to use condoms more than moderate threat subjects, who intended to use condoms more than low threat subjects(Kim Witte, 1991). These results are in contradiction to the study by Janis which showed that minimal fear was associated with higher degree of a stable and persistent changes in attitudes and intentions(Janis & Feshbach, 1953). Intention is an important mediator of behavior. It must however be introduced into the people agenda by manipulating fear and attitudes. This can be accomplished by presenting danger in various shades depending on the desired intention. The message thus must carry fresh insights into the recommended behavior, asses the importance of behavior as well as relevance to person being communicated to. The gain to be incurred in the long run should also be communicated(D. Hill, Chapman, & Donovan, 1998).

Smerecnik also found similar findings when threat was high, participants in the high coping condition reported a higher intention than those in the low coping condition(Smerecnik & Ruiter, 2010).

5.5 Limitations and Biases

Predicting behavior cannot be done with certainty. Though intention to change behavior is best a prognosticator of behavior performance, high intention might not highly correlate with behavior performance. The will to use condom can be altered by influences such as inebriation as well as pressure from friends thus a high intention might not be useful in the end. The actual behavior change was not be determined. Some participants might have been HIV positive and we had no way of knowing. This could have altered the responses because they have the condition which the messages were about. It was also not known what the effect marriage and having a long term partner had on the variables studied.

6.0 CONCLUSIONS

Subjects who received high threat messages reported higher amount of fear. Those that received high efficacy message reported higher perceived efficacy of condom. They felt that condoms were effective and they had ability to use them. Intention to use condom was highest when high threat was combined with high efficacy.

7.0 RECOMMENDATIONS

National bodies involved in HIV/AIDS prevention such as Ministry of Health, National AIDS and STI Control Programme, National AIDS Control Council and County governments should include a high threat component in HIV prevention messages as this led to high intention to use condom.

We also recommend a high coping component with high efficacy messages because this results in high perceived efficacy in the condoms which together with high threat leads to high intention to use condom. We hope that the increased intention to use condom will result into actual use of condom during sexual intercourse.

We would also like to recommend a larger study to include various populations because real life messages are not just targeted to the youth but all adults having sex.

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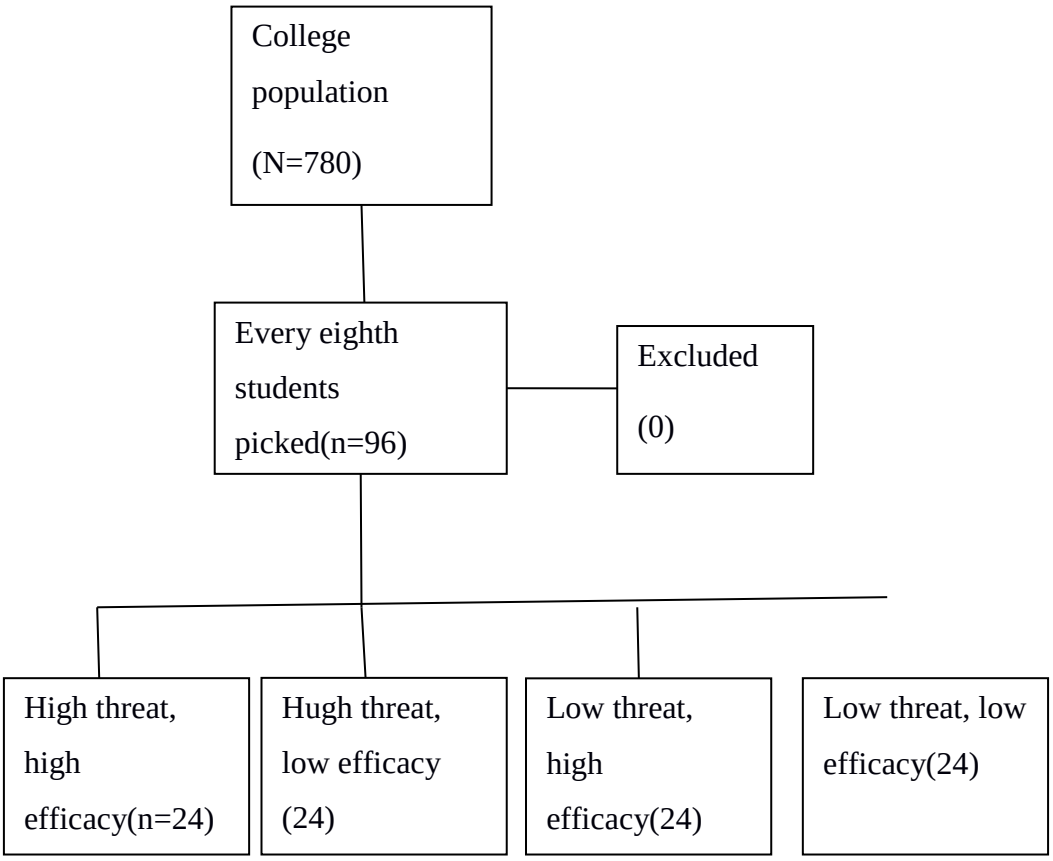
APPENDIX 1: SAMPLING FLOW



APPENDIX 2: INFORMED CONSENT

EFFECT OF FEAR APPEALS ON THE INTENTION TO USE CONDOM AMONG COLLEGE STUDENTS IN BUNGOMA COUNTY

Invitation to Participate

You are invited to participate in this research study investigating the effect of fear in HIV messages.

Basis for Selection

You are eligible to participate in this study because you your age and have met all the inclusion criteria for the study

Purpose of Study

The aim of the experiment is to determine the effect of fear in HIV messages on the sex behavior.

Procedures

You will participate in an experiment where you will be shown some messages related to HIV/AIDS and its prevention.

You will then fill a questionnaire as truthfully as possible regarding the

Potential Benefits

There is no reward for participation in this study

Potential Risks

There are no risks in this study.

Guarantee of Confidentiality

To ensure confidentiality, at no time will your name appear on any materials or reports of the research findings (including web-site postings of the results, conference presentation, or professional publications). Physical materials associated with this study will be kept in a confidential manner. Your signed consent form will be stored separately from your data to ensure complete confidentiality. At the conclusion of this study, all materials will be destroyed. The electronic data will be protected with password.

Withdrawal from Participation

Participation in this study is voluntary. If you decide not participate, you are free to withdraw your consent and to discontinue your participation at any time.

Offer to Answer any Questions

If you have any questions about the procedures at any time, please do not hesitate to ask. If you think of questions later, please feel free to contact the principal investigator. All questions about the procedures and this study in general will be answered. However, some questions may not be answered until after you have completed the procedures to ensure that your responses will not be affected by your knowledge of the research

Participants Statement

I am voluntarily making the decision to participate. My signature certifies that I have heard and understand the aforementioned information. My signature also certifies that I have had an adequate opportunity to discuss this study with the research investigator and have had all of my questions answered to my satisfaction.

I understand that by signing this document, I waive no legal rights.

Participant's Signature

……..

Date…….

Research Investigator's Statement

In my judgment, the aforementioned participant is voluntarily and knowingly giving informed consent and possesses the legal capacity to do so.

…….

Research Investigator's Printed Name

……

Research Investigator's Signature and Date

Phone 0728613209

E-MAIL: kaumbuki@gmail.com

APPENDIX 3: PRE-TEST QUESTIONNAIRE

EFECT OF FEAR APPEALS IN HIV PREVENTION MESSAGES AMONG COLLEGE STUDENTS IN BUNGOMA COUNTY.

PLEASE FILL THE FOLLOWING QUESTIONNAIRE AS TRUTHFULLY AS POSSIBLE

1. Have you had sex in the past year.

YES ----------NO----------

2. When you think about HIV/AIDS, do you feel?

I. Frightened

1	2	3	4	5	6	7
Not at all			somewhat			extremely

II. Tense

1	2	3	4	5	6	7
Not at all			somewhat			extremely

III. Nervous

1	2	3	4	5	6	7
Not at all			somewhat			extremely

IV. Anxious

1	2	3	4	5	6	7
Not at all			somewhat			extremely

V. Uncomfortable

1	2	3	4	5	6	7
Not at all			somewhat			extremely

VI. Nauseous

1	2	3	4	5	6	7
Not at all			somewhat			extremely

VII. Afraid

1	2	3	4	5	6	7
Not at all			somewhat			extremely

VIII. Worried

1	2	3	4	5	6	7
Not at all			somewhat			extremely

4. Condom use effectively prevents me from getting infected with HIV

1	2	3	4	5	6	7
They do not			somewhat prevents			effectively prevents

2. Condoms are easy to use

1	2	3	4	5	6	7
Not easy to use			somewhat easy to use			very easy to use

APPENDIX 4: POST-TEST QUESTIONNAIRE

EFECT OF FEAR APPEALS IN HIV PREVENTION MESSAGES AMONG COLLEGE STUDENTS IN BUNGOMA COUNTY.

SECTION A.

1. Age 2. Sex [ ] MALE [ ] FEMALE

1. Marital status: [ ] married [ ] single [ ] widowed [ ] cohabitation

2. Level of study

SECTION B

STUDY THE PROVIDED MATERIALS CAREFULLY AND UNDERLINE KEY POINTS.

PLEASE ANSWER THE FOLLOWING QUESTIONS AS TRUTHFULLLY AS POSSIBLE.

TICK THE BOX AGAINST THE APPROPRIATE RESPONSE.

1. After reading the message, did you feel?

I. Frightened

1	2	3	4	5	6	7
Not at all			somewhat			extremely

II. Tense

1	2	3	4	5	6	7
Not at all			somewhat			extremely

III. Nervous

1	2	3	4	5	6	7
Not at all			somewhat			extremely

IV. Anxious

1	2	3	4	5	6	7
Not at all			somewhat			extremely

V. Uncomfortable

1	2	3	4	5	6	7
Not at all			somewhat			extremely

VI. Nauseous

1	2	3	4	5	6	7
Not at all			somewhat			extremely

VII. Afraid

1	2	3	4	5	6	7
Not at all			somewhat			extremely

VIII. Worried

1	2	3	4	5	6	7

Not at all somewhat extremely

2. After reading the above material, I think condom use effectively prevents me from getting infected with HIV

1	2	3	4	5	6	7

They do not somewhat prevents effectively prevents

3. After reading the above material, I think condoms are easy to use

1	2	3	4	5	6	7

Not easy to use somewhat easy to use very easy to use

4. My using condoms during the next 4-6 weeks would be

1	2	3	4	5	6	7

Bad Somewhat good very good

1	2	3	4	5	6	7

Undesirable Somewhat Desirable Very Desirable

1	2	3	4	5	6	7

Unfavorable Somewhat favorable Very Favorable

1	2	3	4	5	6	7

Not Pleasurable Somewhat pleasurable Very Pleasurable

1	2	3	4	5	6	7

Not Effective somewhat effective very Effective

1	2	3	4	5	6	7

Not Romantic somewhat romantic very Romantic

5. If I wanted to, it would be easy for me to use a condom next time I have sex even if:

a) I am sexually aroused

1	2	3	4	5	6	7

Not easy somewhat easy very easy

b) My partner gets angry

1	2	3	4	5	6	7

Not easy somewhat easy very easy

c) My partner pressurizes me NOT TO

1	2	3	4	5	6	7

Not easy somewhat easy very easy

6. Do you intend to buy condoms to prevent AIDS during the next 4-6weeks

1	2	3	4	5	6	7

definitely no am not sure definitely yes

7. Do you intend to talk to a sexual partner(s) about using condoms during the next 4-6 weeks?

1	2	3	4	5	6	7

definitely no am not sure definitely yes

8. Do you intend to use condoms at all during the next 4-6 weeks?

1	2	3	4	5	6	7

definitely no am not sure definitely yes

9. Would you use condoms during the next 4-6 weeks if you were to have sex with someone you didn't know very well?

1	2	3	4	5	6	7

definitely no am not sure definitely yes

10. I plan to use condoms during the next 4-6 weeks

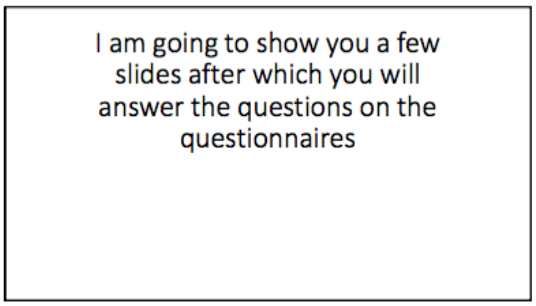
1	2	3	4	5	6	7

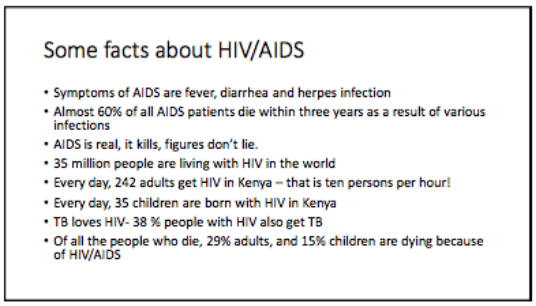
definitely no am not sure definitely yes

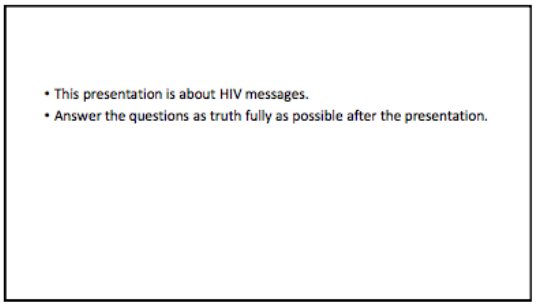
APPENDIX 5: STIMULUS MATERIAL

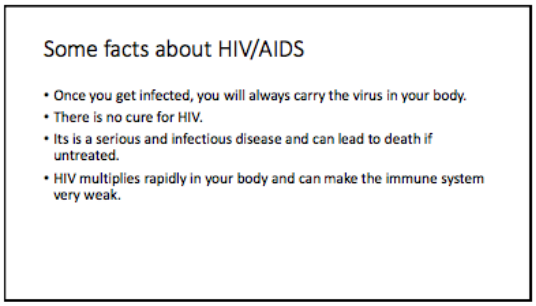
PowerPoint Presentation of stimulus materials as presented to participants in various groups.

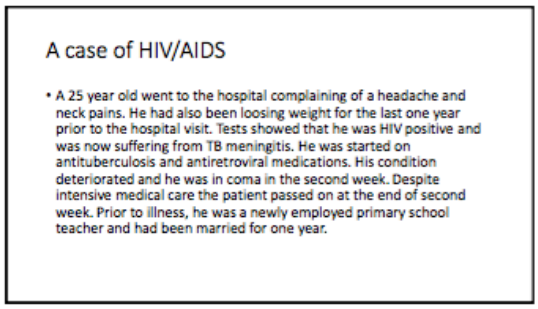
Group 1: HIGH THREAT, LOW EFFICACY MESSAGES

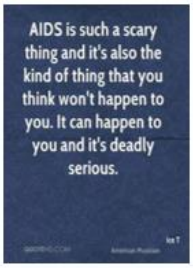


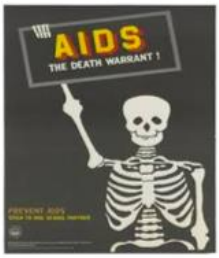









AIDS is such a scary thing and it's also the kind of thing that you think won't happen to you. It can happen to you and it's deadly serious.


AIDS
THE DEATH WARRANT !


Nothing is free
The cost could be HIV/AIDS


BEWARE!
He is a serial killer!
This young man is refusing an HIV test and condoms
He already put 8 girls at death's door through AIDS


A BAD REPUTATION ISN'T ALL YOU CAN GET FROM SLEEPING AROUND.

Did you know?

- Even while using a condom, it is possible to become infected with HIV
- It is not pleasant to have to stop during sexual intercourse to put on a condom
- HIV can still infect people who are faithful to each other

Group 2: LOW THREAT, HIGH EFFICACY MESSAGES

I am going to show you a few slides after which you will answer the questions on the questionnaires

Some facts about HIV/AIDS

- The incubation period of HIV can be as long as long as 10 years
- It is possible to be infected with HIV, but not develop AIDS.
- AIDS is the most advanced form of HIV disease and can be prevented
- It is possible to keep virus under control and live a healthy life.
- Life expectancy for HIV infected people can be similar to non infected people.

- This presentation is about HIV messages.
- Answer the questions as truth fully as possible after the presentation.

A case of HIV/AIDS

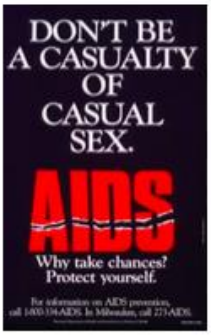
- A 25 year old man presented to the hospital with complaints of headache and neck pains. He had also lost a lot of weight progressively over the one year prior to this presentation. The tests revealed that he was HIV positive and was now sick with meningitis due to TB. He was started on treatment for both conditions and by the second week, the headache and neck pain had resolved. He was give antiretroviral medications to use at home and also given tips on nutrition, exercises, positive living and discharged home. He continued to take medications at home and had regained all the lost weight by 6 months. He was able to resume his teaching job.


NONE OF THESE
WILL GIVE YOU AIDS
UNIVERSITY OF CALIFORNIA


PROTECTION AGAINST
HIV/AIDS ONLY
IF USED CORRECTLY & CONSISTENTLY
EVERY TIME YOU HAVE SEX


Love
as if
your
life
depended
on it.
It does.
Insist
on
condoms.


What you know
about one of these
could save
your life.
Use a condom correctly. EVERY time.
Respect Yourself. Protect Yourself.


DON'T BE
A CASUALTY
OF
CASUAL
SEX.
AIDS
Why take chances?
Protect yourself.


COVER ME
& COVER YOURSELF
AIDS

Did you know?

- It is possible to prevent HIV infection by safe sexual intercourse when you use a condom
- Condoms are easy to use

Group 3: HIGH THREAT HIGH EFFICACY MESSAGES

I am going to show you a few slides after which you will answer the questions on the questionnaires

Some facts about HIV/AIDS

- Symptoms of AIDS are fever, diarrhea and herpes infection
- Almost 60% of all AIDS patients die within three years as a result of various infections
- AIDS is real, it kills, figures don't lie.
- 35 million people are living with HIV in the world
- Every day, 242 adults get HIV in Kenya – that is ten persons per hour!
- Every day, 35 children are born with HIV in Kenya
- TB loves HIV- 38 % people with HIV also get TB
- Of all the people who die, 29% adults, and 15% children are dying because of HIV/AIDS

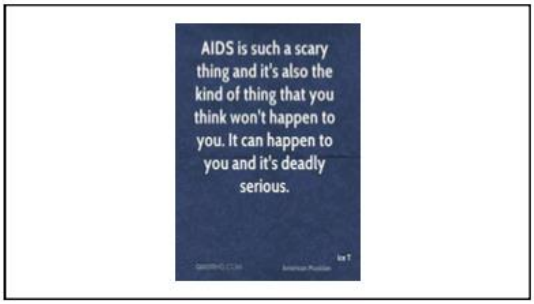
- This presentation is about HIV messages.
- Answer the questions as truth fully as possible after the presentation.

Some facts about HIV/AIDS

- Once you get infected, you will always carry the virus in your body.
- There is no cure for HIV.
- Its is a serious and infectious disease and can lead to death if untreated.
- HIV multiplies rapidly in your body and can make the immune system very weak.

A case of HIV/AIDS

- A 25 year old went to the hospital complaining of a headache and neck pains. He had also been loosing weight for the last one year prior to the hospital visit. Tests showed that he was HIV positive and was now suffering from TB meningitis. He was started on antituberculosis and antiretroviral medications. His condition deteriorated and he was in coma in the second week. Despite intensive medical care the patient passed on at the end of second week. Prior to illness, he was a newly employed primary school teacher and had been married for one year.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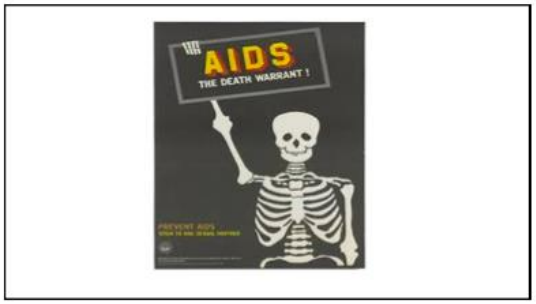
AIDS
THE DEATH WARRANT !


Nothing is free
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BEWARE!
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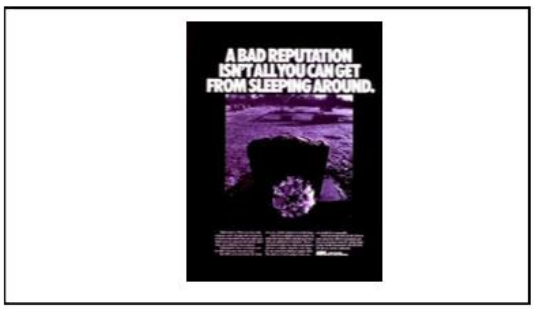
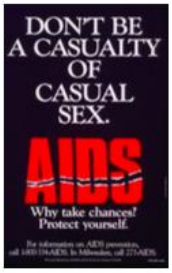

A BAD REPUTATION ISN'T ALL YOU CAN GET FROM SLEEPING AROUND.


AIDS
VIRUS.
A Deadly Saturday
Night Special.
Protect Yourself!
Use Condoms.
Clean Your Works.
Get the Facts.


DON'T BE
A CASUALTY
OF
CASUAL
SEX.
AIDS
Why take chances?
Protect yourself.


THE MORE
YOU SCORE
THE GREATER
YOUR CHANCES
OF LOSING
THE GAME.


Love
as if
your
life
depended
on it.
It does.
Insist
on
condoms.

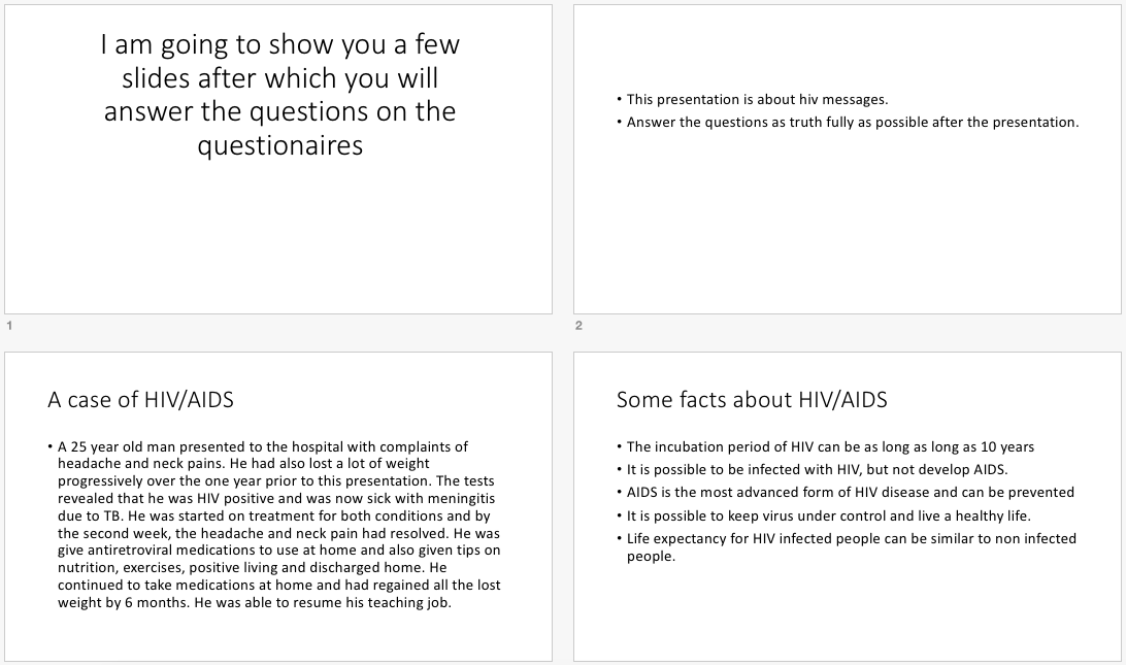

AIDS complications

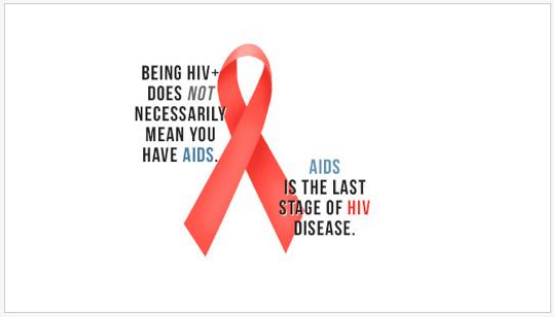

PROTECTION AGAINST
HIV/AIDS ONLY
IF USED CORRECTLY & CONSISTENTLY
EVERY TIME YOU HAVE SEX

Did you know?

- It is possible to prevent HIV infection by safe sexual intercourse when you use a condom
- Condoms are easy to use

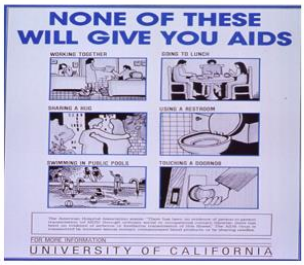
Group 4: LOW THREAT LOW EFFICACY





5

6



Did you know?

- Even while using a condom, it is possible to become infected with HIV
- It is not pleasant to have to stop during sexual intercourse to put on a condom
- HIV can still infect people who are faithful to each other

APPENDIX 6: ETHICAL APPROVAL

F.C

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471//2/3

MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

Reference: IREC/2015/272
Approval Number: 0001600

24th March, 2016

Dr. Kanake Erastus,
Moi University,
School of Medicine,
P.O. Box 4606-30100,
ELDORET-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
24 MAR 2016
APPROVED
P. O. Box 4606-30100 ELDORET

Dear Dr. Kanake,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"Effects of Fear appeals on the Intention to Use Condom among College Students in Bungoma County."

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 1600*** on 24th March, 2016. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 23rd March, 2017. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc Director - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD