

# Adapting Health Communication to Cultural Needs

Optimizing documents in South-African  
health communication on HIV and AIDS

*Edited by*

Piet Swanepoel

University of South Africa

Hans Hoeken

Radboud University Nijmegen, The Netherlands

John Benjamins Publishing Company

Amsterdam / Philadelphia

## CHAPTER 7

# Cultural differences in the perceptions of fear and efficacy in South Africa

Carel Jansen<sup>a</sup>, Hans Hoeken<sup>a</sup>, Dineke Ehlers<sup>b</sup>  
and Frans van der Slik<sup>a</sup>

<sup>a</sup>Centre for Language Studies, Radboud University Nijmegen /

<sup>b</sup>University of South Africa

Recent meta-analyses of HIV/AIDS health communication show that fear appeals have a negative effect on condom use. It has been argued that these negative effects may apply to certain behaviors (condom use) but not to others (e.g., sexual abstinence), and that these negative effects occur for Western cultures but not necessarily for African cultures. To assess whether the effects of fear appeals depend on the types of behavior recommended and on the cultural background of the target audience, information is needed on the existence of cultural differences with respect to the fear evoked by various consequences, as well as to the perceived effectiveness of various countermeasures. In this study, we present the results of a survey among 435 South African adolescents (age 12–19) who differ with respect to their cultural orientation, living circumstances, religion, etc. The results provide evidence for the presence of cultural differences with respect to evoked fear, response efficacy, and self-efficacy. Furthermore, the results provide a possible explanation why fear appeals often are ineffective within the context of communication about HIV/AIDS.

## Introduction

In order to curb the HIV/AIDS pandemic in South Africa, communication efforts aim to prevent certain types of behavior (e.g., having unsafe sex, having sex with multiple partners), or to promote others (e.g., using a condom, being faithful). As these examples show, the types of behavior that are discouraged usually have a mirror image in the types of behavior that are propagated. As a result, the designers of these communication efforts are faced with a fundamental choice: Should they target the undesirable behavior by pointing out its negative consequences or should they target the desirable behavior by pointing out its positive

consequences? For instance: should they point out the dangers of having sex with multiple partners or should they point out the benefits of being faithful?

If designers choose the first option, their message contains a fear appeal: It underscores the harmful consequences of the undesirable behavior. Fear appeals are used frequently in health communication. For instance, messages have been designed to refer to the probability of contracting lung cancer as a result of smoking, to serious car accidents as a result of driving under influence, and to contracting HIV/AIDS as a result of unsafe sex. These undesirable consequences should instill so much fear in its target audience that the receivers no longer smoke, drive after having drunk, or have unsafe sex.

Research on the effects of fear appeals is inconclusive. Some studies suggest that the use of fear appeals may not be an effective strategy to influence people's behavior in the desired direction. Other research, however, has documented positive effects of fear appeals on HIV-related behavior. Unclear, among other things, is to what extent the effects of a fear appeal may depend on the cultural background of the target audience. More specifically: The question is raised whether what instills fear and what is considered a possible effective countermeasure may differ depending on one's cultural background. To answer this question, which seems especially relevant when the health problem that is addressed in the fear appeal messages is unequally distributed among ethnical and cultural groups, we need to know whether there may be a relation between the effects of various types of fear appeal messages on the one hand, and differences in ethnical and cultural background of the message receivers on the other hand.

In this chapter, we first discuss Witte's influential Extended Parallel Processing Model on the way in which fear appeals are believed to influence behavior (Witte 1992, 1998). Next, we discuss the abundant empirical research on the effects of fear appeals in general, as well as the research on the effects of fear appeals in HIV-prevention communication. After this, we present the results of a study that aims to document differences in the perceived threat of certain consequences of HIV and AIDS as well as the perceived effectiveness of certain actions among various subpopulations in South-Africa to combat these consequences.

### A model for the functioning of fear appeals

Based on classical fear appeal theories (primarily Leventhal 1970; Janis 1967; McGuire 1968), Witte (1992, 1998) developed the Extended Parallel Processing Model (EPPM) to explain why and under which conditions fear appeals may be effective. As mentioned above, fear appeals are messages that are designed to evoke fear in the recipients of the message by referring to the negative consequences

of the behavior the message is trying to change. Fear appeals typically include two types of information: a *threat component* and an *action component* (see, for instance, Ruiter et al. 2001), which according to the EPPM may lead to two different appraisal processes (Witte 1998): a threat appraisal and a response appraisal. The first appraisal consists of an assessment of the seriousness of the threat (e.g., how serious is it to contract HIV?) as well as the probability of the threat (e.g., how probable is it that I will contract HIV?). The first factor is called 'perceived severity', the second one 'perceived susceptibility'. This appraisal process results in what is called the 'perceived threat'. If people perceive the consequences as not severe (e.g., HIV does not necessarily develop into AIDS) and/or the probability that they will actually contract HIV as very low, they will consider the threat as low. In that case, people will ignore the message because they perceive the threat depicted as being irrelevant to themselves. If, on the other hand, they perceive the consequences as severe and they regard themselves at risk, then the perceived threat is high, and they really get scared. In that case, people will continue with the second appraisal process.

In this second appraisal, people evaluate the efficacy of the response recommended in the message. As in the previous process, this evaluation depends on two factors. First, the extent to which the recommended behavior is capable of preventing the occurrence of the negative consequence is assessed. For instance, how likely is it that using a condom will prevent me from contracting HIV? Second, the extent to which one is able to perform the recommended behavior is assessed, e.g., will I be able to convince my sexual partner to use a condom? The result of the first assessment is called *perceived response efficacy*; the result of the second assessment is called *perceived self-efficacy*. The combination of these two assessments results in the perceived efficacy, that is, the perception of whether the recommended behavior is effective and feasible.

Depending on the result of the two appraisal processes, the EPPM predicts one of the following outcomes. If the perceived threat is considered low because people consider the outcome as harmless and/or its occurrence as highly improbable, no fear is evoked. As a result, people will ignore the message and stick to their current behavior. If the depiction of the negative consequences evokes fear, it is not automatically the case that people will adopt the behavior propagated. This depends on the outcome of the second appraisal process. If the recommended behavior is perceived as effective in blocking the undesirable consequences and people feel capable of performing the behavior, they will be inclined to accept the message's claim and adopt the propagated behavior in order to avert the potential negative consequences. This (primarily cognitive) response is called *danger control*. However, if the recommended behavior is regarded as ineffective or impractical, readers will engage in a fear control process. That is, they will deny that they



are at risk and label the depiction of negative consequences as exaggerated. In this way, they cope with their fear for consequences they feel unable to prevent. This (primarily affective) response is therefore called fear control.

In summary: According to the EPPM, a health communication message including a fear appeal can evoke one of three responses:

1. The message is ignored because it fails to evoke fear.
2. The message is accepted because it evokes fear AND presents an effective and feasible prevention method.
3. The message is rejected and the depicted negative consequences minimized because it evokes fear but fails to present an effective and feasible prevention method.

According to the model, fear appeals in health communication will only be effective if they *both* (1) evoke fear *and* (2) provide a way to prevent the harmful consequences from occurring. There are abundant studies in which the proposed interaction effects of the threat component and the action component of fear appeal messages are assessed empirically.<sup>1</sup> In the next section, a summary of these studies is presented.

### Empirical research on fear appeals

A large number of empirical studies have been conducted on the effects of fear appeals. In several meta-analyses the results of different studies are compiled statistically thereby enabling a more reliable picture of the effects and the sizes of the effects. Two meta-analyses have been conducted for fear appeals in general (Mongeau 1998; Witte and Allen 2000) and two meta-analyses have been conducted on the use of fear appeals in HIV-prevention communication (Albarracín et al. 2005; Earl and Albarracín 2007). We will start with discussing the meta-analyses of fear appeals in general and then proceed with discussing the fear appeals in HIV-prevention communication.

Mongeau (1998) included 45 studies on the effects of fear appeals. In general, he reports a linear, positive relationship between the manipulation of threat and perceived fear, attitude, and behavior. All these effects point in the same direction: the higher the threat, the higher the perceived fear and the more positive

1. In other approaches to the processing of fear appeal messages, such as discussed in De Hoog, Stroebe and De Wit (2005) or in Ruiter et al. (2001) either the perceptions of threat, more specifically of susceptibility, or the perceptions of action effectiveness and self-efficacy are considered to have a decisive influence on the effects of the message.

the attitude and behavior. However, the sizes of these effects are moderate (perceived fear) to small (attitude, behavior), which implies that the threat manipulation does not cause a large difference in the audience's response. Mongeau did not assess the unintended effects fear appeals may have such as the downplaying of the threat when people enter into the fear control mode nor did he assess the importance of the perceived efficacy for the effects of fear appeals. Nevertheless, he refers to the importance of this concept in his concluding remarks: "In sum, fear appeals should highlight the threat and the recommended means of avoiding the threat" (Mongeau 1998:66).

Witte and Allen (2000) conducted a meta-analysis on the same issue. Although their study was published only two years after Mongeau (1998), they were able to find 98 studies in which the effects of a fear appeal were studied. They also included 13 studies on the unintended effects of fear appeals. The results from Witte and Allen's meta-analysis with respect to the main effects of fear appeals are very similar to the ones reported by Mongeau (1998). The threat manipulation had reliable but relatively small effects on attitudes and behavior. Furthermore, according to Witte and Allen (2000), the combination of a high threat perception and a high efficacy perception proved to result in the highest level of persuasiveness in terms of danger control responses. With respect to fear control responses, their results show that as the fear appeal increases in strength, defensive responses increase as well. This effect is especially strong if the message is weak on efficacy information. Furthermore, defensive responses are inversely related to the adoption of the propagated behavior. These results are predicted by the EPPM. Based upon these results, Witte and Allen provide the following advice to message designers: "A persuader should promote high levels of threat and high levels of efficacy to promote attitude, intention, and behavior changes." (2000:604)

In general, these meta-analyses appear to provide evidence for the effectiveness of fear appeals in changing attitudes and behavior. However, recent meta-analyses of the effectiveness of various intervention strategies targeting condom use as an HIV-prevention method point in the opposite direction. Albarracín et al. (2005) synthesize the results of 194 research reports in which the outcomes of various interventions on condom use were studied. The results of this meta-analysis can be summarized as showing that the most effective interventions were those that contained arguments aiming to change the beliefs underlying attitudes, those that provided educational information, those that presented behavior skills arguments, and those that provided behavioral skills training. The latter two results can be regarded as in accordance with the conclusion of Witte and Allen (2000) that one should promote high levels of efficacy. However, the first part of their advice, promoting high levels of threat, was not supported by the results. Albarracín et al. (2005:867) conclude that threats were rather associated with

*decreases* in condom use. Furthermore, they did not find positive effects of fear appeals in combination with interventions aimed at improving the efficacy with respect to condom use (Albarracín et al. 2005:881).

In their meta-analysis Albarracín et al. (2005) focus on the immediate consequences of the various intervention strategies. Earl and Albarracín (2007) complement these results by conducting a meta-analysis in which the short- and long-term consequences of fear appeals are compared to those of HIV counseling and testing. Although their meta-analysis comprises many of the studies that were also included in the meta-analysis by Albarracín et al. (2005), the inclusion of the long-term effects of these interventions warrants a closer look at their results. Earl and Albarracín (2007) conclude that fear appeals have more negative results compared to HIV counseling and testing immediately after the intervention, but they also point out that this effect becomes even more prominent in the long term. They conclude that "inducing fear is not an effective way to promote HIV-relevant learning or condom use either immediately following the intervention or later on" (Earl and Albarracín 2007: 504).

Different meta-analyses on the effectiveness of fear appeals in health communication yield contradictory results. Whereas Mongeau (1998) and Witte and Allen (2000) report positive effects of evoking threat, Albarracín and her colleagues (2005; Earl and Albarracín 2007) obtain negative effects. A possible explanation may be found in the nature of the behavior these messages try to change. Whereas in the meta-analyses providing positive effects of fear appeals all types of behavior were included, the meta-analyses providing negative effects have focused exclusively on the interventions aiming to promote condom use. In both meta-analyses on the effects of interventions on condom use, the authors refer to the theorizing of Rothman and Salovey (1997) who have suggested that fear appeals may be effective in modifying some types of behavior but not others. Based upon this reasoning, Albarracín et al. (2005:881) point out that fear appeals may be effective when people have to be persuaded to abstain from a certain behavior (e.g., sexual abstinence) or perform an illness detecting behavior (e.g., going for an HIV-test), whereas they backfire when used to persuade people to health promoting behavior. In the meta-analyses by Mongeau (1998) and Witte and Allen (2000), such distinctions are not made. It is possible that their conclusion about the positive effects of fear appeals is the result of an overrepresentation of studies in which these types of behavior are targeted.

In only one of the meta-analyses, ethnic differences are taken into account as a variable that may influence the effectiveness of different intervention strategies. Albarracín et al. (2005:884-885) state that despite the increased concern that especially ethnic minorities and disadvantaged populations are at risk for HIV, to their knowledge there has been no research comparing the effects of the various

positive effects of fear  
on the efficacy with

the immediate conse-  
quences (Albarracín (2007) com-  
pares the short- and long-  
term effects of HIV counseling and  
the studies that were  
conducted (5), the inclusion of the  
effect at their results. Earl  
reports negative results com-  
paring the intervention, but they  
are significant in the long term.  
The authors promote HIV-relevant  
intervention or later on"

appeals in health com-  
munities (1998) and Witte and  
Albarracín and her col-  
leagues. A possible expla-  
nation is that the mes-  
sages try to change.  
The fear appeals all types  
of negative effects have fo-  
cused on condom use. In both  
studies, the authors refer to  
the suggestion that fear ap-  
peals are effective but not others. Based  
on the evidence that fear appeals may  
lead to a certain behavior  
change (e.g., going for  
the people to health pro-  
grams) and Witte and Allen  
conclude their conclusion about  
the presentation of studies

are taken into account as  
intervention strategies.  
The increased concern that es-  
pecially are at risk for HIV, to  
the effects of the various

intervention strategies for participants with European and African backgrounds. Based upon the results of their meta-analysis, they conclude that "extensive empirical and theoretical work on intervention effectiveness across ethnic groups is warranted." In the next section, the research that has been conducted on this issue will be discussed.

### Cultural differences and the effects of fear appeals

Green and Witte (2006) challenge the generalizability of the conclusion that fear appeals would only backfire when used in HIV related public health campaigns. They argue that fear appeals have been effective in certain African countries, e.g., Uganda (see, Allen and Heald 2004 for a similar discussion). Green and Witte (2006) argue that we need more evidence on the extent to which the (in)effectiveness of fear appeals is contingent on the types of behavior propagated and the beliefs held by the local population.

Several studies have shown that traditional African beliefs with respect to, e.g., condom use differ widely from Western beliefs. Instead of regarding condoms as an effective means to protect one's health, they are expected to have a negative effect on the health of both sexual partners. Condoms are believed to block the 'flow of bloods' and the 'gift of self' (Allen and Heald 2004; Van Dyk 2001). Culture driven attitudes towards polygamy also appear to be relevant in this respect. These attitudes can be inconsistent with the advice in a fear appeal message to be faithful to one's (only) partner (Mulaudzi 2005). Such cultural differences are related to the response efficacy of the behaviour propagated.

With respect to what constitutes a real threat, cultural differences may come into play as well. For instance, it has been argued that fear appeals in which the negative consequences for an individual's health are more effective in individualistic cultures whereas depictions of the shame that may befall on the family would be more effective in collectivistic cultures (see, e.g., Murray-Johnson et al. 2001; Swanepoel 2003). The evidence on this issue, however, is scarce and the results of empirical studies are even conflicting. Whereas Murray-Johnson et al. report to have found the hypothesized differences in individualistic and collectivistic cultural orientation on the perceived threat evoked by different portrayals of the negative effects, Jansen, Van Baal, and Bouwmans (2006) were unable to replicate this pattern of results in a similar study conducted in other countries. As already noted by Albarracín et al. (2005), the number of studies in which the responses of African participants are compared to those of Western participants is very limited. Therefore, it is unclear to which extent cultural differences play a role in the effectiveness of fear appeals. If the ineffectiveness of fear appeals would



be restricted to Western cultures and/or to condom use only, then not using it for other target groups and/or other target behaviors may be considered a missed opportunity in a battle that is too important to miss opportunities.

### Research questions

According to the EPPM (Witte 1992, 1998), the effectiveness of fear appeals depends on at least three issues: (1) Does the depicted threat really evoke fear among the target group, (2) is the recommended response regarded as an effective countermeasure, and (3) is the recommended response regarded as feasible? For each of these issues, cultural differences may occur, and if they do, they have to be taken into account in order to provide a real assessment of a fear appeal's effectiveness.

In this chapter, we present the results of a study on the perceptions of threats and responses amongst adolescents in South Africa. The rainbow nation of South Africa hosts many different ethnic groups. Among these groups, there are more traditional African groups and more *Western*-oriented groups which could yield strong differences with respect to their beliefs, traditions, and values. Although these groups may differ, they have at least one thing in common: They all face the threat of contracting HIV. We chose to study the perceptions of adolescents as they constitute the future of South Africa. Furthermore, they may have no or less direct experience with the behavior propagated compared to the adult population. Therefore, the impact of communication may be stronger for adolescents.

In this project, the population was segmented along three dimensions: cultural orientation, living area, and gender. First, a distinction was made between more Western oriented respondents and more African oriented ones. As documented in several studies, traditional African beliefs about the causes of illness and what constitutes healthy practices differ from those of Western cultures (see, for a review, Van Dyk 2001: 110–130). As a result, people with a different background may differ, for instance, in their perceptions of what is an effective countermeasure. A second distinction was made between respondents living in a rural or in an urban area. The living conditions, available health care, and media environment differ strongly between urban and rural areas. Finally, a distinction was made between men and women. In most parts of life, but certainly in the area of sexuality, gender differences play an important role. What may constitute a feasible behavior for one gender, e.g., sexual abstinence, may be considered unattainable by the other. The segmentation along these three dimensions enables addressing the following research questions:

it for  
d op-

reals de-  
ar among  
ive coun-

For each

do, they have to be taken  
ar appeal's effectiveness.

he perceptions of threats  
rainbow nation of South  
e groups, there are more  
groups which could yield  
is, and values. Although  
ommon: They all face the  
ptions of adolescents as  
they may have no or less  
red to the adult popula-  
ronger for adolescents.

g three dimensions: cul-  
tion was made between  
oriented ones. As docu-  
out the causes of illness  
of Western cultures (see,  
le with a different back-  
nat is an effective counter  
ndents living in a rural  
th care, and media envi-  
Finally, a distinction was  
out certainly in the area

What may constitute a  
may be considered un-  
ree dimensions enables

1. How does cultural background, living environment and gender of people living in South Africa relate to differences with respect to the perceived threat of the various consequences that contracting HIV may have?
2. How does cultural background, living environment and gender of people living in South Africa relate to differences with respect to the perceived response efficacy of various measures that may prevent contracting HIV?
3. How does cultural background, living environment and gender of people living in South Africa relate to differences with respect to the self-efficacy of the various measures that may prevent contracting HIV?

Providing answers to these questions is valuable in two ways. From a practical view, these answers may provide document designers with information they can use to tailor their interventions to the needs, fears, and capabilities of their target audience. From a theoretical point of view, these answers may provide the parameters to assess the effectiveness of fear appeals for different types of behavior – comparing, e.g., condom use (i.e. doing something) to sexual abstinence (i.e. refraining from something) – while taking possible cultural differences into account.

## Method

### Questionnaire

The questionnaire was in English. In the first part, respondents were asked to supply demographic data. They were asked to provide information on their age (in years), gender, the language they usually spoke at home, whether they were a member of a religious group and if so, which, where they lived (rural, urban), the type of building they lived in (squatter camp house/shack, suburban house, farmhouse, township house, flat, hostel), occupation, and years of schooling. The question on the language spoken at home was used to distinguish between traditional African respondents (isiNdebele, Sesotho sa Leboa, Sesotho, siSwati, Xitsonga, Setswana, Tshivenda, isiXhosa, isiZulu) and Western respondents (English, Afrikaans).

In the remainder of the questionnaire, questions were asked on the extent to which the respondents were afraid of the negative consequences of HIV/AIDS infection, the extent to which they considered certain prevention methods as effective (response efficacy), and the extent to which they felt themselves capable of performing each of these prevention methods (self-efficacy). The statements used in the questionnaire were obtained during a pilot experiment from a convenience sample consisting of members of the target group who were approached individually during 2003. The sample consisted of pupils of Waterkloof High School

as well as teenagers who resided in the Itumeleng shelter in Pretoria. They were asked the following questions.

1. What do you regard as the most serious consequences of being infected by HIV/AIDS?
2. What do you regard as effective responses to avert the threat?

From the variety of answers received on these questions, 40 statements on fear-some consequences of HIV-infection and 10 on effective responses to avert the threat were derived. The 10 statements on self-efficacy are similar to those in the section on response efficacy and merely ask respondents to rate whether it would be possible for them to use these prevention methods.

Various kinds of negative consequences were included: physical consequences (for example: "Suffering a great deal of pain or discomfort"), social consequences (for example: "Bringing shame on my family if I am HIV-positive") and psychological consequences (for example: "Feeling I am not worth anything if I am HIV-positive"). Respondents rated the fear experienced for each of the consequences on a scale from 1 to 5, labeled from "Not afraid at all" to "Very afraid". At the end of this section, respondents were asked whether there were any other fears which were not addressed in the survey, and if so, they were asked to write them down and rate them on the same five point scale. Next, respondents were asked to evaluate 10 statements on possible responses to prevent HIV/AIDS infection on a scale from 1 to 5, labeled from "Not effective at all" to "Very effective". These responses included both active behavior (such as using condoms) and abstaining from certain behaviors (such as having no sex). Again, respondents were asked to write down any other prevention methods that they thought were missing in the questionnaire and to rate these methods' effectiveness. Finally, the respondents were asked for each of the response methods to indicate the extent to which they thought they would be able to use these methods. Again, the rating scale ranged from 1 to 5, labeled from "Not possible at all for me" to "I am sure I am able to do so". The questionnaires were pretested on 50 members of the target group. As a result, some refinements were made in the formulation of the statements.

### Respondents

At the time the questionnaire was distributed (2004), the third author worked at UNISA, the South African distance university situated in Pretoria, then catering for some 120,000 students all over South Africa. Respondents were recruited not by the researcher herself, but through third-year students who had registered for one of her classes on research in document design. Each student received three

copies of the questionnaire and was requested to have these questionnaires filled out by three teenagers in his or her community. Students were not obliged to participate in the research, but were given a 5% exam credit for participation. In order to ensure authenticity and compliance with the protocol, students were fully informed about the objectives of the research in a letter and were required to sign a written declaration in which they stated that (1) the questionnaires had indeed been completed by members of the target group in their community (aged 12 to 19), (2) the respondents had completed the questionnaire on the basis of voluntary participation, (3) the students had not completed the questionnaires themselves and had not had them filled out by persons who are not members of the target group, and (4) they had not made any alterations to the questionnaires or added any supplementary information. Every participating student did indeed include this signed declaration with his or her returned questionnaires.

In order to ensure maximum similarity of experimental conditions, each student received three printed questionnaires together with a research protocol to be adhered to. In the protocol, the students were urged to obtain the voluntary participation of respondents and to obtain parental permission if needed. They were requested to administer the questionnaire to three respondents aged 12–19 in their own community who could read and write English at a sufficiently high level to be able to answer the questions. Furthermore, the students were instructed not to interfere with respondents while completing the questionnaires or to try to influence their respondents' replies. They were not asked to report on how many (if any) potential respondents refused to participate; however, since these Unisa students operated within their own communities, finding willing participants under relatives and acquaintances will probably not have been problematic. The Unisa students acting as research assistants had the opportunity to report back on any problems experienced in the administering of the questionnaires. No problems were reported back to the researcher.

This procedure resulted in a total of 435 completed questionnaires. The completed questionnaires were checked manually for coding errors and the open questions (on fears and responses not mentioned in the questionnaire) were written down separately and manually coded. However, it soon became clear that nearly every statement written down by respondents in the open questions was in fact similar to one of the statements already rated in the questionnaire. After discussion of every item with a research assistant, agreement was reached that the statements collected would be disregarded in the analysis so as not to duplicate ratings for the same statement.

The sample was a relatively heterogeneous one. With respect to gender, the percentage of male respondents (51.0 %) was only slightly higher than the number of female respondents (49.0%). Age in years varied from 12 to 19, with a



mean of 15.23 years old, a median score of 15.00 and a mode of 16 years old. Most respondents (58.7%) were between 15 and 17 years old. The language spoken at home varied: English (24.2%), Afrikaans (16.4%), and isiZulu (11.8%) were the most prominent. All other official African languages were represented in the sample with percentages ranging from 3.0% (isiNdebele, isiXhosa) to 9.9% (Sesotho). With respect to religion, a similar diversity can be observed. Members of the African Christian church constituted the largest group (19.5%), followed by the Catholic church (16.2%) and the Zion Christian Church (10.2%); the other Christian churches added up to 22.2%; 25.2% of the respondents belonged to still another religion. The percentage of respondents who considered themselves as not religious was 6.7%. Approximately three quarters of the sample lived in an urban area (73.1%), whereas one quarter lived in a rural area (26.9%). The majority of the respondents (52.0%) lived in suburban houses. There were sizable proportions in the sample who indicated that they lived in a squatter camp (10.4%) or in a township (16.0%). The vast majority of the respondents (87.8%) indicated that they attended school full-time whereas only 6.7% stated that they were unemployed. Approximately one quarter of the respondents (26.2%) indicated that the highest school grade they had passed was grade 7 or lower. For the other options, the percentage of respondents was approximately equal (16%) with the exception of the highest grade (grade 12): 7.8%. Given that the majority of the participants were younger than 15 years, this result is not surprising.

#### Statistical analysis of the data

The data were captured in SPSS and a sample of the data set was compared to the original questionnaires to check whether any mistakes had been made. The results of this check were satisfactory. Next, separate factor analyses were conducted for (1) the 40 items on the extent to which the various consequences of an HIV-infection did evoke fear, (2) the 10 items on the extent to which various responses were considered effective as a prevention method, and (3) the 10 items on the extent to which respondents thought they were able to apply this method. These factor analyses were conducted for the complete sample and also for the segments differing with respect to cultural orientation, gender, and living area. Next, three-way Analyses of Variance (ANOVA) were conducted on the perceived fear, response efficacy, and self-efficacy items taking cultural orientation, gender, and living area as independent variables.

## Results

### Factor analysis

A principal axis factor analysis was conducted on the 40 statements that measured the extent to which the participants were afraid of various consequences of contracting HIV. There were 10 factors with an Eigenvalue higher than 1. However, after the first factor (Eigenvalue = 11.33), there was such a steep drop in the Eigenvalues of the subsequent factors (Factor 2: Eigenvalue = 1.94) that only one factor could be substantiated. Separate factor analyses for the segments within the sample (African versus Western, men versus women, rural versus urban) revealed a similar pattern for each of the subsamples.

Next, the responses on the effectiveness of the 10 counter measures were analyzed in a similar way as the threat perceptions items. This factor analysis revealed 2 factors with an Eigenvalue higher than 1. The following items loaded high on the first factor (Eigenvalue = 3.41): being faithful (.71), wait until marriage (.66), condom use (.64), postponing (.56) or quitting sexual activity (.64). There were two items that loaded on the second factor (Eigenvalue = 1.79): washing carefully after having sex (.72) and only having sex with people you know (.54). The first factor appears to be related to the well-known ABC of effective prevention methods (Abstinence, Being faithful, and Condomize), whereas items that are believed to be ineffective load on the second factor. Again, separate factor analyses for the various segments revealed similar patterns for each of the subsamples.

Finally, the responses of the participants on the extent to which they regarded themselves as capable of performing the various counter measures were analyzed. Again, the factor analysis revealed two factors with an Eigenvalue higher than 1. However, the items loading on these factors were slightly different from the previous analysis. All items that were related to abstinence loaded on the first factor (Eigenvalue = 3.80); the items loading on the second factor revealed no clear pattern. For instance, the item that loaded highest on this factor (washing carefully: .49), did also load high on the first factor (.44). Again, separate factor analyses for the different segments revealed a similar pattern.

### Fear of consequences

The respondents rated the extent to which they were afraid of 40 different consequences of contracting HIV/AIDS. Appendix 1 contains the descriptives of the extent to which the different physical, social and psychological consequences were

feared by the respondents. The most feared ones were all related to the death and suffering that related to HIV/AIDS ('contracting a deadly disease', 'dying young' and 'prolonged suffering'). Each consequence was analyzed separately, using a 2 (cultural orientation)  $\times$  2 (gender)  $\times$  2 (living area) ANOVA. Because of the large number of resulting tests and, consequently, the inflation of the Type I-error, only effects that were significant at the .01 level are reported.

There were main effects of cultural orientation for 6 out of the 40 consequences. African oriented respondents were more afraid of being rejected by their family ( $M = 4.06$ ,  $SD = 1.32$ ) than Western oriented respondents ( $M = 3.60$ ,  $SD = 1.40$ ), and they were also more afraid of displeasing their ancestors ( $M = 3.14$ ,  $SD = 1.58$ ) than the Western respondents ( $M = 2.41$ ,  $SD = 1.46$ ). For the other four consequences, 'having to tell friends', 'having to tell boyfriend/girlfriend', 'Others will not want to touch me' and 'having to discuss sexual matters with medical personnel', Western oriented respondents were more afraid than the African oriented ones.<sup>2</sup>

The only other significant effects were two-way interactions. The most frequently occurring effect was the interaction between gender and living area. For 12 of the 40 effects, this interaction was significant at the .01 level. In every case, the effect was the result of the fact that male respondents were somewhat more afraid of the consequence than female respondents in the urban area whereas in the rural area female respondents were more afraid than the male respondents. This pattern of results was obtained for the fear of 'dying young', 'prolonged illness', 'physical suffering', 'visible signs of AIDS', 'having to tell parents', 'nobody will take care', 'becoming financially dependent', 'being unable to pursue a career', 'being unable to realize one's dreams', 'losing self-confidence', 'being shunned by others', and 'not having physical contact with others'.

Finally, there were seven consequences for which a significant cultural orientation  $\times$  gender effect occurred. For the most feared consequence, 'contracting a deadly disease', the interaction was the result of African oriented female respondents being less afraid than the other groups. A similar pattern was found for 'bringing shame upon the family', 'being unable to realize one's dreams', and 'being unable to marry'. The consequence of 'wasting away' proved more fearsome for African oriented males compared to the other groups. 'Feeling worthless' and 'experiencing a negative attitude from the medical staff' was feared more by Western oriented females compared to Western oriented males, whereas the opposite pattern was obtained for the African oriented respondents.

2. There was only one other main effect, namely an effect of gender on the fear for visible AIDS-signs, but this main effect was qualified by a significant gender  $\times$  living area interaction.

## Perceptions of response efficacy

In Table 1 the overall perceptions of the effectiveness of responses are reported in descending order along with information on whether there were any main effects or interactions detected with respect to these responses.

There were main effects of cultural orientation on the perceived effectiveness of three responses. Western oriented respondents regarded being faithful as more effective ( $M = 4.26$ ,  $SD = 1.05$ ) compared to African oriented respondents ( $M = 3.67$ ,  $SD = 1.46$ ). However, this main effect was qualified by a significant interaction between cultural orientation and gender. Whereas for Western oriented respondents, female respondents were more convinced about the effectiveness of this response ( $M = 4.41$ ,  $SD = 0.90$ ) compared to their male counterparts ( $M = 4.08$ ,  $SD = 1.18$ ), the opposite pattern was obtained for the female African oriented respondents ( $M = 3.52$ ,  $SD = 1.47$ ) and the male African oriented respondents ( $M = 3.80$ ,  $SD = 1.45$ ). The other two effects revealed that Western oriented respondents regarded postponing sexual activity ( $M = 3.96$ ,  $SD = 1.08$ ) and waiting with having sex until being married ( $M = 4.11$ ,  $SD = 1.13$ ) as more effective responses compared to their African oriented respondents ( $M = 3.54$ ,  $SD = 1.39$ ;  $M = 3.72$ ,  $SD = 1.41$ ).

There were two main effects of gender on perceived effectiveness. Female respondents regarded the postponement of sexual activity as a more effective response ( $M = 2.85$ ,  $SD = 1.28$ ) compared to male respondents ( $M = 3.61$ ,  $SD = 1.26$ ), whereas male respondents ( $M = 2.90$ ,  $SD = 1.45$ ) regarded having sex with someone you know as a more effective measure than the female respondents

Table 1. The mean perceptions of response effectiveness (1 = not effective at all, 5 = very effective) (standard deviations between parentheses)

Response	Mean (SD)	Cultural orientation	Gender	Living area	Interactions
Being faithful	3.83 (1.39)	$p < .01$	$p = .99$	$p = .12$	$p < .01$ (CxG)
Wait until marriage	3.80 (1.39)	$p < .01$	$p = .16$	$p < .05$	n.s.
Condom use	3.79 (1.39)	$p = .23$	$p = .97$	$p = .16$	n.s.
No condom, no sex	3.74 (1.46)	$p = .29$	$p = .84$	$p = .37$	n.s.
Postpone sex	3.69 (1.31)	$p < .05$	$p < .05$	$p = .16$	n.s.
Abstinence	3.66 (1.57)	$p = .22$	$p = .15$	$p = .33$	$p < .01$ (GxA)
Stop sexual activity	3.27 (1.29)	$p = .64$	$p = .88$	$p = .51$	n.s.
Pray to God	3.09 (1.60)	$p = .92$	$p = .65$	$p < .05$	$p < .05$ (CxG)
Only with acquaint.	2.69 (1.45)	$p = .35$	$p < .001$	$p = .72$	n.s.
Wash carefully	2.55 (1.48)	$p < .05$	$p = .36$	$p = .11$	n.s.



( $M = 2.40$ ,  $SD = 1.43$ ). There were also two main effects of living area on the respondents' perceptions. Respondents living in a rural area considered both waiting until marriage ( $M = 4.13$ ,  $SD = 1.33$ ) and praying to God ( $M = 3.38$ ,  $SD = 1.63$ ) as a more effective response than did respondents living in an urban area ( $M = 3.81$ ,  $SD = 1.31$ ;  $M = 3.02$ ,  $SD = 1.57$ ). There were two remaining significant interactions. Whereas the male respondents living in an urban area regarded abstinence as a much more effective response ( $M = 3.85$ ,  $SD = 1.47$ ) compared to male respondents living in a rural area ( $M = 3.23$ ,  $SD = 1.51$ ), this difference was in the opposite direction, although less pronounced, for the female participants from urban ( $M = 3.68$ ,  $SD = 1.60$ ) and rural areas ( $M = 3.93$ ,  $SD = 1.49$ ). Finally, there was an interaction of gender and cultural orientation on praying to God: Whereas for African oriented respondents the male respondents were more positive about the effectiveness of this response ( $M = 3.27$ ,  $SD = 1.57$ ) than the female respondents ( $M = 3.02$ ,  $SD = 1.54$ ), the opposite pattern was found for the Western oriented respondents ( $M = 2.91$ ,  $SD = 1.65$ ;  $M = 3.19$ ,  $SD = 1.62$ ).

### Perceptions of self-efficacy

In Table 2, the mean scores on the perceived self efficacy of the ten responses are displayed along with information on the effects of cultural orientation, gender, and living area.

In general, the respondents perceived all responses as feasible although they considered being faithful and using condoms as highly feasible whereas having sex with acquaintances only or having no sex at all as the least feasible methods.

Table 2. The mean perceptions of self efficacy (1 = not possible at all for me, 5 = I am sure I am able to do so) (standard deviations between parentheses)

Response	Mean (SD)	Cultural orientation	Gender	Living area	Interactions
Being faithful	4.35 (1.06)	$p < .001$	$p = .51$	$p = .21$	n.s.
Condom use	4.33 (1.12)	$p = .11$	$p = .25$	$p = .12$	n.s.
Pray to God	3.83 (1.38)	$p = .08$	$p = .23$	$p = .17$	n.s.
No condom, no sex	3.81 (1.54)	$p < .05$	$p < .05$	$p = .68$	n.s.
Wait till marriage	3.72 (1.45)	$p = .09$	$p < .01$	$p < .05$	n.s.
Postpone sex	3.70 (1.37)	$p < .001$	$p = .14$	$p = .55$	n.s.
Stop sexual activity	3.68 (1.39)	$p = .10$	$p = .10$	$p = .17$	n.s.
Wash carefully	3.67 (1.50)	$p < .01$	$p = .12$	$p = .13$	n.s.
No sex	3.32 (1.50)	$p = .19$	$p < .001$	$p = .87$	n.s.
Only with acquaint.	3.22 (1.55)	$p < .01$	$p = .96$	$p = .88$	n.s.

ts of living area on the  
l area considered both  
ing to God ( $M = 3.38$ ,  
ents living in an urban  
e two remaining signifi-  
an urban area regarded  
 $SD = 1.47$ ) compared to  
.51), this difference was  
the female participants  
1.93,  $SD = 1.49$ ). Finally,  
ion on praying to God:  
ndents were more posi-  
t = 1.57) than the female  
was found for the West-  
,  $SD = 1.62$ ).

of the ten responses are  
ral orientation, gender,

is feasible although they  
feasible whereas having  
e least feasible methods.

e at all for me,  
parentheses)

Living area	Interactions
$p = .21$	n.s.
$p = .12$	n.s.
$p = .17$	n.s.
$p = .68$	n.s.
$p < .05$	n.s.
$p = .55$	n.s.
$p = .17$	n.s.
$p = .13$	n.s.
$p = .87$	n.s.
$p = .88$	n.s.

There were main effects of cultural orientation for five of the responses. For each response, African oriented respondents felt less confident about being able to perform the behavior compared to the Western oriented respondents. This was the case for 'being faithful' ( $M_{African} = 4.15$ ,  $SD = 1.18$  vs.  $M_{Western} = 4.61$ ,  $SD = 0.82$ ), 'no condom, no sex' ( $M_{African} = 3.59$ ,  $SD = 1.63$  vs.  $M_{Western} = 4.09$ ,  $SD = 1.37$ ), 'postpone sex' ( $M_{African} = 3.46$ ,  $SD = 1.40$  vs.  $M_{Western} = 4.01$ ,  $SD = 1.27$ ), 'Wash carefully' ( $M_{African} = 3.45$ ,  $SD = 1.52$  vs.  $M_{Western} = 3.96$ ,  $SD = 1.43$ ), and 'Only with acquaintances' ( $M_{African} = 3.54$ ,  $SD = 1.55$  vs.  $M_{Western} = 2.98$ ,  $SD = 1.55$ ).

There were three main effects of gender. Surprisingly, female respondents were, in all cases, more optimistic about their ability to perform the behavior. This was the case for 'no condom, no sex' ( $M_{Female} = 4.04$ ,  $SD = 1.46$  vs.  $M_{Male} = 3.58$ ,  $SD = 1.58$ ), 'wait till marriage' ( $M_{Female} = 3.93$ ,  $SD = 1.37$  vs.  $M_{Male} = 3.51$ ,  $SD = 1.49$ ), and 'no sex' ( $M_{Female} = 3.59$ ,  $SD = 1.46$  vs.  $M_{Male} = 3.06$ ,  $SD = 1.50$ ). Finally, there was only one effect of living area. Rural respondents regarded 'waiting until marriage' as easier to realize ( $M = 3.98$ ,  $SD = 1.34$ ) than respondents living in urban areas ( $M = 3.63$ ,  $SD = 1.47$ ). None of the two or three way interactions were significant.

## Discussion

There is a general tendency to avoid the use of fear appeals in health communication within the context of HIV/AIDS. This tendency receives strong support from meta-analyses showing that fear appeals have a negative effect on condom use (Albaraccín et al. 2005; Earl and Albaraccín 2007). The authors of these meta-analyses point out that the negative effect of fear appeals may occur for certain types of behavior (e.g., condom use) but not for others (e.g., abstinence). Other researchers have suggested that the effectiveness of fear appeals may depend on the cultural background of the target audience (Green and Witte 2006). What backfires in a Western culture, may not necessarily backfire in other cultures. Albarracín et al. (2005) acknowledge the fact that little research has been done in which the responses of African and Western respondents are compared. It appears prudent to first conduct studies on the extent to which the effectiveness of fear appeals depends on the type of behavior propagated and the cultural background of the target audience before tossing this tool out of the health communication designer's toolkit.

In order to gain insights into the conditions under which fear appeals may (mal)function, some groundwork has to be done first. More specifically, it has to be assessed whether there are indeed cultural differences in perceptions of elements that are essential to the effectiveness of fear appeals. According to the EPPM

(Witte 1992, 1998), these elements are (1) the extent to which consequences do instill fear and the extent to which the recommended behavior is considered as an (2) effective and (3) feasible way to prevent this negative consequence from occurring. In this study, we did just that. For a heterogeneous sample of South African adolescents, we addressed the question of whether there were differences in perceptions for exactly these elements in relation to the respondents' cultural background, gender, and living area. The answer to the research question is affirmative: For each of these elements, we did obtain differences. For 22 of the 40 consequences, differences were obtained revealing that the extent to which certain consequences evoked fear depended on cultural background, gender, living area or a combination of these dimensions. For 7 of the 10 responses, such differences were obtained with respect to the extent to which they were considered effective, and for 6 of them there were differences with respect to which they were considered feasible. As such, the results of this study testify to the existence of differences that are relevant to the potential effectiveness of fear appeals.

The results of this study are relevant to practitioners as well as to researchers. For practitioners, the results provide answers to questions such as "which responses are already considered effective". Such answers are important in order to decide whether one needs to include additional evidence for the effectiveness of certain countermeasures. Likewise, a low score on perceived self-efficacy may indicate a need for instructions on how to perform a certain behavior. Given that this information is available for different segments within the South African population, it is possible to tailor the communication interventions to the needs of these segments. For researchers, the results of this study provide the information needed to develop experiments to assess (1) whether fear appeals may be effective for certain target behaviors but not for others, and (2) whether the effectiveness of fear appeals may depend on the cultural background of the target audience. According to the EPPM, an effective fear appeal is one that evokes enough fear to motivate people to consider the behavior recommended whereas this recommended behavior should be considered effective and feasible to avert the danger. Given that the results provide researchers with information on the extent to which these factors are culturally sensitive, it enables them to formulate hypotheses on which combinations of threat and recommended behavior should be successful for which segment of the target audience and for which segment of the target audience certain combinations would backfire for whatever reason. For instance, trying to persuade people to be faithful to their partner by referring to the threat of being rejected by one's family may be ineffective for Western oriented people because they do not consider this a serious threat and it may be ineffective for

which consequences do  
 behavior is considered as  
 a negative consequence from  
 a previous sample of South  
 Africans there were differences  
 in the respondents' cultural  
 perceptions. A research question is af-  
 fected by these differences.  
 For 22 of the 40  
 respondents, the extent to which cer-  
 tain background, gender, living  
 conditions, etc. responses, such dif-  
 ferences were considered  
 important to which they were  
 exposed to the existence of dif-  
 ferent fear appeals.

As well as to research-  
 questions such as "which  
 are important in order  
 to be effective for the effectiveness  
 of perceived self-efficacy may  
 influence behavior. Given that  
 the South African pop-  
 ulation is different from the needs of  
 the target audience, the infor-  
 mation provided by the  
 appeals may be effective  
 whether the effectiveness  
 of the target audience  
 that evokes enough fear  
 and whereas this recom-  
 mendation is able to avert the danger.  
 In addition, the extent to which  
 the hypotheses on  
 the target audience should be successful  
 in a segment of the target  
 audience for reason. For instance,  
 referring to the threat  
 of Western oriented people  
 may be ineffective for

African oriented people because they do not regard the recommended behavior as effective and feasible.

The results of this study also provide some food for thought about the inef-  
 fectiveness of fear appeals as shown by the meta-analysis of Albarracín et al.  
 (2005) about the persuasiveness of various types of HIV-prevention messages.  
 Under the best of circumstances, the fear component functions as a wake up  
 call: it makes the target audience aware of the seriousness of the threat, after  
 which the readers or listeners are motivated to consider their options to avert  
 that threat. In the case of HIV/AIDS, however, as our study shows, the receivers  
 often are already widely awake. They do not need to be convinced of the serious-  
 ness of the threat posed by HIV/AIDS any longer. The fact that in many studies  
 mentioned in the meta-analysis of Witte and Allen 2000 fear appeal messages  
 proved to have had a beneficial effect may have been the result of the circum-  
 stance that, in these studies, the target audience was not yet fully aware of the  
 threats posed by the diseases that the fear appeal messages warned them about.  
 In a situation, however, where everyone is already aware of great danger, focus-  
 ing on this danger is no longer relevant, and may even backfire if it puts people  
 into fear control mode.

There are some limitations to this study. The fact that the respondents were  
 recruited by university students may have led to some bias in the answers, specifi-  
 cally to questions referring to consequences of HIV infection for relations with  
 family and friends. Furthermore, it is likely that adolescents with a higher level of  
 education are somewhat overrepresented in the sample. The question is to what  
 extent this overrepresentation reduces the value of the results. The aim of this  
 study was to assess whether there were cultural differences in the perceptions of  
 fear, response, and self-efficacy. Given that the educational system in South Africa  
 is Western oriented, an overrepresentation of respondents with a higher level of  
 education may lead to an underestimation of the size of such cultural differences.  
 Nevertheless, we were able to obtain such differences. We therefore believe that  
 our sample, in which many of the various segments of the South African popula-  
 tion are represented, provides relevant and important information to the practice  
 of document design as well as to the research in fear appeals.

## References

- Albarracín, D., Gillette, J. C., Earl, A. N., Glasman, L. R., Durantini, M. R. and Ho, M. H. 2005.  
 "A test of major assumptions about behavior change: A comprehensive look at the effects  
 of passive and active HIV-prevention interventions since the beginning of the epidemic."  
*Psychological Bulletin* 130: 856-897.



- Allen, T. and Heald, S. 2004. "HIV/AIDS policy in Africa: what has worked in Uganda and what has failed in Botswana?" *Journal of International Development* 16: 1141-1154.
- Earl, A. N. and Albarracín, D. 2007. "Nature, decay, and spiraling effects of fear inducing arguments and HIV counseling and testing: A meta-analysis of the short- and long-term outcomes of HIV-prevention outcomes." *Health Psychology* 26: 496-506.
- Green, E. C. and Witte, K. 2006. "Can Fear Arousal in Public Health Campaigns Contribute to the Decline of HIV Prevalence?" *Journal of Health Communication* 11: 245-259.
- Hoog, N. de, Stroebe, W. and Wit, J. de 2007. "The impact of fear appeals on processing and acceptance of action recommendations." *Personality and Social Psychology Bulletin* 31: 24-33.
- Jansen, C., Baal, J. van and Bouwmans, E. 2006. "Investigating culturally-oriented fear appeals in public information documents on HIV/AIDS." *Journal of Intercultural Communication* 11: (April). (<http://www.immi.se/intercultural/>)
- Mulaudzi, M. F. 2005. "Attitudes, beliefs and practices of the Vhavenda in sexually transmitted diseases." *Indilinga: African Journal of Indigenous Knowledge Systems* 4 (1): 323-333.
- Murray-Johnson, L., Witte, K., Liu, W. Y., Hubbell, A. P., Sampson, J. and Morrison, K. 2001. "Addressing cultural orientations in fear appeals: Promoting AIDS-protective behaviours among Mexican immigrant and African American adolescents and American and Taiwanese college students." *Journal of Health Communication* 6: 335-358.
- Rothman, A. J., and Salovey, P. 1997. "Shaping perceptions to motivate healthy behavior: The role of message framing." *Psychological Bulletin* 121: 3-19.
- Ruiter, R. A. C., Abraham, C. and Kok, G. 2001. "Scary warnings and rational precautions. A review of the psychology of fear appeals." *Psychology and Health* 16: 613-630.
- Swanepoel, P. 2003. "Die (on)effektiwiteit van MIV/VIGS-voorligtingsveldtogte en -voorligtingstekste in Suid-Afrika: Probleme en riglyne vir oplossings." *Tydskrif vir Nederlands en Afrikaans* 10: 5-51.
- Van Dyk, A. 2001. *HIVAIDS Care and counseling. A multidisciplinary approach* (2nd ed). Forest Drive, Pinelands, Cape Town: Pearson Education South Africa.
- Witte, K. 1998. "Fear as motivator, fear as inhibitor: Using the extended parallel process model to explain fear appeal successes and failures." In *The handbook of communication and emotion: Research, theory, applications, and contexts*, P. A. Andersen and L. K. Guerrero (eds), 423-450. San Diego, CA: Academic Press.
- Witte, K. and Allen, M. 2000. "A meta-analysis of fear appeals: Implications for effective public health campaigns." *Health Education and Behaviour* 27: 591-615.

## Appendix 1

Extent to which different physical, social and psychological consequences evoke fear (mean scores, standard deviations, and results from ANOVA's with cultural orientation, gender and living area as independent variables)

Response	Mean (SD)	Cultural Orientation	Gender	Living area	Interactions
<b>Physical consequences</b>					
Contracting deadly disease	4.57 (0.95)	p = .10	p = .74	p = .51	p < .01 (GxC) p < .05 (GxCxA)
Dying young	4.39 (1.19)	p = .18	p = .08	p = .14	p < .001 (GxA) p < .05 (GxAxC)
Prolonged illness	4.39 (0.98)	p = .19	p = .08	p = .46	p < .01 (GxA)
Physical suffering	4.28 (1.06)	p = .57	p < .05	p = .55	p < .001 (GxA) p < .05 (GxC) p < .05 (GxAxC)
Visible signs of illness, such as sores	4.17 (1.09)	p = .51	p < .01	p = .45	p < .01 (GxA)
Losing good looks by wasting away	3.59 (1.40)	p = .25	p = .24	p < .05	p < .01 (GxC) p < .05 (GxA) p < .05 (GxAxC)
<b>Social consequences</b>					
Risk of infecting sexual partner or children	4.32 (1.09)	p = .17	p = .60	p = .31	
Disappointing parents	4.11 (1.15)	p = .92	p < .05	p = .10	
Having to tell parents	4.00 (1.34)	p < .05	p = .25	p < .05	p < .01 (GxA)
Loss of job opportunities	3.98 (1.17)	p = .98	p = .86	p = .48	p < .05 (GxC)
Being unable to afford medication	3.97 (1.22)	p = .42	p = .08	p = .86	p < .05 (GxA)
Being financially dependent	3.96 (1.26)	p = .56	p = .55	p = .74	p < .01 (GxA)
Having nobody to look after me	3.95 (1.35)	p = .17	p = .35	p = .27	p < .01 (GxA)
Bringing shame on family	3.95 (1.29)	p = .88	p = .31	p = .57	p < .01 (GxC) p < .05 (GxA)
Being rejected by family	3.86 (1.37)	p < .01	p = .49	p = .49	
Being unable to pursue a career	3.83 (1.35)	p < .05	p = .16	p < .05	p < .001 (GxA)
Being rejected by friends	3.83 (1.27)	p = .34	p = .47	p = .71	
Being rejected by community	3.74 (1.39)	p = .27	p = .32	p = .35	
Violent reaction from community	3.70 (1.37)	p = .81	p < .05	p = .75	p < .05 (GxA)
Having to tell friends	3.67 (1.30)	p < .01	p = .41	p = .56	
Having to tell boy/girlfriend	3.59 (1.42)	p < .01	p = .76	p < .05	p < .05 (GxC) p < .05 (GxA) p < .05 (CxA)
Being shunned by others	3.59 (1.34)	p = .08	p = .11	p = .73	p < .01 (GxA)

Response	Mean (SD)	Cultural Orientation	Gender	Living area	Interactions
Being regarded as a person with loose morals	3.58 (1.34)	$p = .35$	$p = .75$	$p < .05$	$p < .05$ (GxC)
Others will not want to touch me	3.47 (1.44)	$p < .01$	$p = .89$	$p = .76$	$p < .01$ (GxA)
Losing boy/girlfriend	3.38 (1.43)	$p = .62$	$p < .05$	$p = .65$	$p < .05$ (GxC)
Being dependent on others for food or money	3.35 (1.38)	$p < .05$	$p = .97$	$p = .08$	
Being exposed to negative attitude from medical staff	3.32 (1.37)	$p < .05$	$p = .86$	$p = .25$	$p < .01$ (GxA)
Being beaten up or verbally abused by partner	3.17 (1.58)	$p = .06$	$p = .64$	$p < .05$	
Others will think I lead a sinful life	3.17 (1.43)	$p = .11$	$p = .64$	$p = .50$	$p < .05$ (GxC)
Not being part of the 'in'-group	3.00 (1.42)	$p = .33$	$p = .57$	$p = .42$	$p < .05$ (GxA) $p < .05$ (GxCxA)
<b>Psychological consequences</b>					
Being unable to have children	4.00 (1.34)	$p = .44$	$p = .56$	$p = .15$	
Being unable to realise my dreams	3.81 (1.35)	$p = .13$	$p = .41$	$p = .92$	$p < .01$ (GxA) $p < .01$ (GxC)
Being unable to marry	3.75 (1.47)	$p < .05$	$p = .23$	$p = .38$	$p < .01$ (GxC) $p < .05$ (GxCxA)
Psychological stress of going for an HIV-test	3.67 (1.31)	$p = .70$	$p = .11$	$p = .85$	
Losing self-confidence	3.61 (1.37)	$p = .24$	$p = .29$	$p = .35$	$p < .05$ (GxC) $p < .01$ (GxA)
Feeling I am not worth anything	3.57 (1.45)	$p = 1.00$	$p = .66$	$p = .86$	$p < .01$ (GxC)
God's judgement on me after death	3.56 (1.61)	$p < .05$	$p = .57$	$p = .07$	
Having displeased the ancestors	2.82 (1.57)	$p < .01$	$p = .27$	$p = .49$	
Having to discuss sexual matters with medical personnel	2.60 (1.43)	$p < .001$	$p = .18$	$p = .41$	
Being worried I have been bewitched	2.55 (1.59)	$p = .08$	$p < .05$	$p = .06$	