

“Why should I?”: on selecting the content of persuasive HIV counselling and testing messages for students at a previously disadvantaged university in South Africa

ABSTRACT

This study aimed to discover what specific beliefs of students at a South African university should be addressed when trying to persuade them to go for HIV counselling and testing (HCT). The participants were 113 students from a previously disadvantaged university. The students completed a questionnaire that included questions about participants' HCT intentions and about possible predictors of such intentions. Students' HCT intention proved to be positively related to their perception of having control over their HCT behaviour (self-efficacy), and to their perception of social pressure towards going for HCT (perceived norm). The students' belief that they would not be either too afraid or too stressed to go for HCT contributed positively to their self-efficacy, as did the belief that they would be able to deal with the possibly disadvantageous outcome of the HIV test. The students' belief that their parents would approve of their going for HCT proved to be a strong and positive predictor of their perceived norm. Furthermore, perceived susceptibility to HIV/AIDS was positively related to HCT intention, and stigmatising attitude towards people living with HIV/AIDS (PLWHAs) was negatively related to HCT intention. These outcomes suggest that in trying to convince black students in South Africa to go for HCT, developers of promotion messages should focus on students' susceptibility to HIV, on how to deal with the possibility that their parents might not approve of their going for HCT, and on how to cope with a possibly disadvantageous test outcome.

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INTRODUCTION ¹

On 1 December 2009, the South African president announced “a massive campaign to mobilise all South Africans to get tested for HIV and to ensure that every South African knows their HIV status” (SANAC, 2010: 6). According to the new governmental approach, HIV counselling and testing remain voluntary but health care workers are obliged to explain to patients the importance both of knowing their HIV status and of habitually testing for HIV (SANAC, 2010: 7). As an indication of this shift towards provider-initiated counselling and testing, the abbreviation VCT (voluntary counselling and testing) was replaced by HCT (HIV counselling and testing).

HEAIDS (2010) – a report on a comprehensive study carried out between 2008 and 2009 into HIV prevalence (the proportion of HIV-positive individuals) and related factors in the higher education sector in South Africa – advocated a similar approach. One of the conclusions of the said study was that “at high prevalence institutions [...] promotion of VCT should be aimed at everyone knowing their status” and that “VCT services should continue to be promoted in the institutional context but moves should be made towards an opt-out approach where HIV testing becomes routine for those using clinic services. [...]” (HEAIDS, 2010: 112). Like all other major studies in South Africa, the HEAIDS Report indicated a concentration of the prevalence of HIV among black South Africans. Although the HIV prevalence reported in the HEAIDS study in general was much lower than in other recent studies, it was still considerably higher among black students (5.6%) than among white (0.03%), Indian (0.3%) and coloured students (0.8%) even if the patterns of infection were the same (HEAIDS, 2010: xi, 105).

In discussing the strategies to be followed in order to ensure that people from the target group present themselves for testing, SANAC (2010) mentions a number of messaging guidelines to be used in the campaign. Most importantly, the guidelines state that:

Messaging will focus on the benefits of testing and disclosure between partners, the positive support systems available. Messages will remain positive and hopeful and forward-focused. They should not delve into questions of discrimination, stigma or confidentiality issues lest by trying to tackle these things, it only further entrenches them (SANAC, 2010: 12).

There is no mention here or elsewhere in the SANAC documents of sources that were used for developing the guidelines for the new messages about VCT (hereafter, except in citations: HCT). It remains unclear, therefore, whether a literature study or new empirical research was carried

¹ The data for this study were collected by the first author, who wrote her MA thesis as part of a project called HACALARA (HIV/AIDS Communication Aimed at Local And Rural Areas; see www.hacalara.org), with financial support from SANPAD, the South Africa-Netherlands Research Programme on Alternatives in Development. The second author was the supervisor of the MA thesis.

out in order to investigate what kind of information in the campaign messages may or may not be expected to be helpful towards persuading the target group to present for testing.²

This article reports on a quantitative study carried out at a previously disadvantaged university in South Africa³ to discover the beliefs that best predict black students' intentions to be tested for HIV and that should therefore be addressed in HCT promotion messages. The article ends with a short comparison between the outcomes of the study to the message guidelines in the SANAC documents.

1. THEORETICAL BACKGROUND

Despite understandable pessimism about the effects of mass media health campaigns that may sometimes exist among, for instance, those responsible for managing and financing such campaigns, recent research indicates that mass media health campaigns are proving to be more and more effective. In his retrospective of research in this field over the years 1996 to 2005, Noar (2006) concludes that "literature is beginning to amass that targeted, well-executed health mass media campaigns can have small-to-moderate effects not only on health knowledge, beliefs and attitudes, but on behaviors as well". He adds that "[these effects] can translate into major public health impact given the wide reach of mass media" (Noar, 2006: 21). Based on a systematic international review specifically devoted to the effects of HIV and AIDS mass media campaigns, carried out between 1998 and 2008, Noar et al. (2009) conclude that in eight of ten studies that were based on designs involving control groups, the campaigns that were assessed proved to be successful. These studies "demonstrated impact on key safer sexual behaviors such as condom use or HIV testing or impact on behavioural intentions to engage in these behaviors" (Noar et al., 2009: 36).

An important question, then, is how to develop messages that may be used in successful mass media campaigns. Noar et al. (2009) stress the importance of distinguishing between decisions on the content of such messages (*what to tell*) and on their format (*how to tell this*). For both purposes, a theory-based approach creates the best options: "In fact, it is likely that messages

² Efforts were made to establish contact with SANAC (South African National AIDS Council), in order to obtain information about the sources for the message guidelines. Unfortunately, no such information was received.

³ At the time when the data for this study were collected, the authors were not informed that the university at which this research was carried out, had an ethics committee that had to grant permission for studies like this one. Only after the manuscript of this article had been completed, was the existence of the said Ethics Committee brought to the authors' attention. Upon a request nevertheless to be allowed to publish the results of the study, the committee turned down the request on the grounds that approval could not be granted retrospectively. No objection was however raised against a publication in which readers would be informed that the participants were students at a previously disadvantaged university in South Africa, while no mention would be made of the specific university where the data had been collected.

based on both behavioural theories, which specify message content, and message design theories, which specify how particular kinds of messages can be designed to be persuasive with a target audience, will be most persuasive and effective” (Noar et al., 2009: 37). Yzer (2008), in his discussion of the possible relevance of theoretical frameworks for the development of ways to address the complexity of HIV/AIDS communication, makes a similar distinction when he proposes to differentiate between the process of choosing message content (*message strategy*) and the process of designing the message “in a creative process that requires choices about structure, style, presentation and layout elements that resonate with the particular audience” (Yzer, 2008: 53-54)

As a theoretical basis for deciding on the message content, Yzer (2008) proposes the integrative model of behavioural prediction (from here on: IMBP) (see also Fishbein, 2000; Fishbein & Yzer, 2003; Manganello & Fishbein, 2009). The IMBP integrates three main behavioural theories: the health belief model (Janz & Becker, 1984; Rosenstock, 1974), the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), an extension of which is the theory of planned behaviour (Ajzen, 1991), and the social cognitive theory (Bandura, 1977). Despite differences in focus, these influential theories⁴ display several important similarities and, taken together, they identify a limited number of variables that make it possible to predict health behaviour. It should be noted, however, that the IMBP and its underlying theories are specifically suitable for predicting *planned behaviour*, i.e. behaviour based on conscious reasoning (such as going or not going for HCT), and less so for predicting habitual behaviour based on patterns and routines that are performed more or less automatically (such as smoking, eating fat food on a regular basis, or always taking the same route from home to work).

The IMBP is discussed below as the theoretical basis for finding possible predictors for black students’ intentions to be tested for HIV and, via that route, for making well-informed decisions about the content of persuasive messages aimed at this specific target group. Figure 1 presents the IMBP.

⁴ See, for instance, these conclusions from O’Keefe (2002) in his textbook on persuasion theory and research: “The TRA [Theory of Reasoned Action] and the TBP [Theory of Planned Behaviour] have undergone extensive empirical examination, with repeated and widespread evidence. [...] In illuminating the underpinnings of behavioral intention, the TRA and the TPB provide manifestly useful applications to problems of persuasion, primarily by identifying potential points of focus for suatory efforts” (O’Keefe, 2002: 130-131).

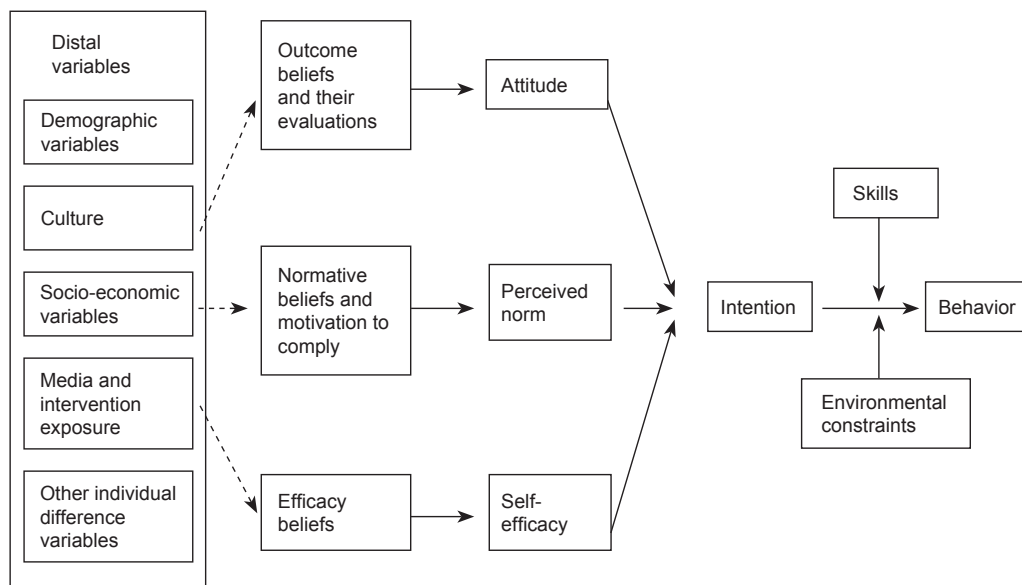


Figure 1 IMBP: Integrative model of behavioural prediction (Fishbein & Yzer, 2003)

The IMBP suggests that “behavior is most likely to occur if one has a strong intention to perform a behavior, if a person has the necessary skills and abilities required to perform the behavior, and if there are no environmental constraints preventing behavioral performance” (Fishbein & Yzer, 2003: 166). According to the IMBP, an individual’s intention may be predicted from three global types of perceptions: attitude, perceived norm and self-efficacy. Each of these global perceptions may in turn be predicted from underlying beliefs and evaluations. Insight into these beliefs and evaluations is of great importance when trying to effect behavioural change in a target group. As Yzer states:

Ultimately, behavior change is the result of changes in beliefs about performing the behavior. HIV prevention messages cannot directly change attitude or other global perceptions, but they can change the precursors of those perceptions. [...] Thus, if one seeks to employ HIV prevention messages to change a particular HIV-risk behavior, those messages should be designed at the level of changing specific beliefs about the behavior. Because beliefs will differ between behaviors and populations, it is essential to understand a behavior from the perspective of the target population before one attempts to change the behavior (Yzer, 2008: 52).

The first global perception in the IMBP, *attitude*, is a function of outcome beliefs and evaluations, i.e. “beliefs about the likelihood that [the behaviour] results in certain outcomes, and an evaluation of these outcomes in terms of good or bad” (Yzer, 2008: 52).

The second global perception in the IMBP is *perceived norm*. Before forming an opinion on a certain behaviour, an individual might consider whether significant others like family, friends and the community view the behaviour as 'good' or 'bad'. Such normative beliefs will be more influential when an individual is motivated to comply with the norms and expectations of significant others, such as family or friends, than when a person does not feel the urge to comply (Fishbein & Yzer, 2003). Perceived norm relates to its underlying beliefs in the same way as attitude does; normative beliefs predict perceived norm with regard to a certain behaviour (Ajzen & Fishbein: 1980).

Self-efficacy is the third global perception included in the IMBP. This perception of being capable of performing a particular behaviour is based on efficacy beliefs, i.e. an individual's perceived belief of being able to perform the behaviour in specific challenging or facilitating circumstances (Yzer, 2008). For example, someone can be very confident that he/she has the skills and abilities that are necessary to perform the behaviour even in difficult circumstances, which leads to a high level of perceived self-efficacy. It should be noted that self-efficacy is not necessarily the same as actual skills, as someone can misjudge what he/she is actually capable of (Fishbein & Yzer, 2003).

Attitude, perceived norm, self-efficacy and their underlying beliefs are often called *proximal variables*. According to most behavioural theories and empirical evidence, these variables are the most important predictors of intention and behaviour (Fishbein & Yzer, 2003). In the IMBP, the proximal variables are clearly distinguished from the so-called *distal variables*. Distal variables do not necessarily have a relationship with intention or behaviour, but they might indirectly be related to intention via the proximal variables. As Yzer (2008: 53) explains, distal variables are defined as such because there are not theoretical reasons to expect that these variables always and in the same way shape specific beliefs. Distal variables may include a wide variety of both personal individual-level variables and community-level variables. Examples are demographic characteristics such as age, gender and education level, but also personality traits, moods and emotions, knowledge about the subject, stereotypes, stigmatising attitudes, perception of own risk, and shared culture (Swanepoel, 2005; Yzer, 2008). The IMBP posits that *if* a distal variable is related to behavioural intention, this relation must be via one or more beliefs and global perceptions (Yzer, 2008).

It is important to note that the IMBP does not imply that each global perception always has the same weight in determining behavioural intention. The relative importance of global perceptions as predictors of a particular behaviour varies among different behaviours and among different populations. Yzer (2008: 51) gives the example of condom use as a type of behaviour that may be "particularly guided by attitudinal influence in individual cultures, and by normative influence in collectivistic cultures". The same possible variation applies to underlying beliefs and distal variables; differences between populations may be explained by differences in contextual background variables (Yzer, 2008: 51-53).

2. EARLIER THEORY-BASED STUDIES INTO PREDICTORS OF HCT BEHAVIOUR IN SOUTH AFRICA

To our knowledge, only a few studies have to date been undertaken on the predictors of HCT uptake in South Africa, that have also explicitly related the design of both the study and the analysis of the results to a theoretical framework such as the IMBP or one of its precursors.

Swanepoel, Burger, Loohuis and Jansen (2008) asked 75 University of Pretoria students from various ethnicities to complete a questionnaire that included questions about their intentions in respect of HCT and into the possible predictors for such intentions. They employed the IMBP as the theoretical framework for determining the specific questions to be asked. It was found that black students in their sample evidenced a stronger intention to go for HCT than did white students, and that students who had already gone for HCT were more willing to have themselves tested (again) than were students who had not yet considered going for HCT.

Swanepoel et al. (2008: 100-101) furthermore found that the predictors of HCT uptake differed for various subgroups in the student population from which a sample had been taken. For the black students in this study, the belief that they would be able to go for HCT was an important predictor of intention for HCT uptake. For the white students other beliefs turned out to be related to such intention: their expectations, for instance, about being able to live a normal life, and about being able to handle negative responses should they test positive, and also their expectations about negative economic consequences should they turn out to be infected.

Swanepoel et al. (2008: 100-101) also found a clear difference in respect of beliefs that appeared to be relevant predictors between, on the one hand, students who had already considered going for an HIV test (or had even done so in the past), and, on the other, students who had up to then never considered taking the test. For the first group, practical considerations appeared to be important predictors of their intentions: the extent to which they expected HCT to be an effective means of determining their status and thus of protecting their health and the health of others, and also their knowledge (or lack thereof) of a site where they could be tested. For the second group of students, however, the predictors of their HCT intentions were of a more personal nature: the extent to which they considered themselves to be at risk of HIV/AIDS; their trust in the confidentiality with which the medical staff would treat the outcome of a test; and, in case they would test positive, their expectations about being able to handle negative responses and about being able to take antiretroviral therapy (ART) for the rest of their lives.

Tempelman and Vermeer (2009) carried out a study into the predictors of South Africans' intentions to be tested starting from the *theory of planned behaviour* (TPB) as presented in Ajzen (1991). The study was carried out at the Ndlovu Medical Centre in Elandsdoorn, a township in Mpumalanga. At this medical centre, HIV counselling and testing are integral parts of an AIDS-awareness programme for people in the area. The researchers collected information about the variables related to the decision of inhabitants of the area to go or not to go for counselling and testing.

Tempelman and Vermeer (2009) developed a questionnaire that included items measuring the participants' attitudes, subjective norms, perceived behavioural controls, knowledge, anxieties, intentions and their past behaviour. The participants were 346 people, aged between 14 and 67 years, recruited in the township area at community events, in schools, at taxi ranks and in the aforementioned medical centre.

Tempelman and Vermeer (2009) carried out two separate regression analyses: one aimed at finding the best predictors of past HCT behaviour, and the other aimed at predicting intentions regarding future HCT behaviour. In the first regression analysis, it was found that four variables had thus far significantly contributed to the participants' testing behaviour: gender (women were more likely to have gone for counselling and testing than were men); age group (older people were more likely to have gone for counselling and testing than were younger people); knowledge (people with a higher level of knowledge regarding HIV, AIDS and testing were more likely to have gone for counselling and testing – but it should be noted that the level of knowledge already appeared to be relatively high); and, attitude (the more positive an individual was regarding going for counselling and testing, the greater was the chance that this individual had already previously performed this behaviour).

In the second regression analysis, Tempelman and Vermeer (2009) found that two variables significantly contributed to the participants' intention of going for counselling and testing: attitude of the participant towards HCT, and subjective norm (the individual's perception of social pressure to go for an HIV test). Those who appeared to have both a positive attitude about going for counselling and testing and also a positive subjective norm were more likely to have an intention of being tested than were those with less favourable scores on the aforementioned variables. No statistically significant relation was found between perceived behavioural control (the participants' ideas about their ability to carry out the behaviour in question) and HCT intention.

The discussion section in Tempelman and Vermeer (2009) stresses the importance of new research into the role of perceived risk in predicting the intention to go for counselling and testing. These authors also underline the necessity of paying more attention to the TPB variables that underlie the intention to go or not to go for HCT rather than maintaining a prolonged strong focus on knowledge about HIV/AIDS and testing.

Swanepoel (2010) discusses a number of problematic issues in the design of South African HCT campaigns targeted at students and he strongly pleads for more research into the predictors of South African students' HCT uptake. Referring to the IMBP, Swanepoel illustrates how the predictors that are presented in this model have an impact on individual-level decision making regarding HCT, and he argues that empirical studies into the said predictors are required. These new studies should also assess "what other variables could be at stake in the uptake of VCT and how different target groups within the whole body of South African students prioritise these in their decisions to go for VCT" (Swanepoel, 2010: 121).

We agree with Tempelman and Vermeer (2009) and with Swanepoel (2010) about the importance of gaining more insight into the predictors of HCT behaviour in various target groups. We thus decided to carry out a new study into the predictors for HCT intention in a specific subgroup of the South African population.

3. THE PRESENT STUDY

This study aimed to determine how, in a group of black students in South Africa, the intention to go or not to go for counselling and testing might be predicted from the proximal and the distal variables in the IMBP.

3.1 Participants

The participants were students from a previously disadvantaged university in South Africa. The sample comprised 113 participants of which 56 were male and 57 female. The average age of the participants was 20.5 years, with the minimum age being 17 and the maximum being 32. Most participants were first-year students (74.2%); 11.5% were second-year students, 8.8% third-year students; 3.5% fourth-year students; and 1.8% had been studying at the university for more than four years. The sample included mother-tongue speakers of ten different languages, this indicating varying cultural backgrounds. Participants were enrolled in a large variety of educational programmes (29), with the largest group coming from the Faculty of Social Sciences.

3.2 Material

A questionnaire was developed so as to include items related to the three global perceptions contained in the IMBP, i.e. attitude, perceived norm and self-efficacy. Also included were items related to beliefs, which, according to the IMBP, might underlie the said global perceptions: outcome beliefs, evaluations of outcome beliefs, normative beliefs, motivations to comply, and efficacy beliefs. Furthermore, the intention to go for HCT was measured, and a number of items were added in order to measure variables that, in view of earlier studies – such as those by Boshamer and Bruce (1999), Van Dyk and Van Dyk (2003), Kalichman and Simbayi (2003), Birdsall, Hajjiyannis, Nkosi and Parker (2004), Swanepoel (2005), Verheij and Jansen (2010), and Swanepoel et al. (2008) – might prove to be relevant distal variables.

The items were presented as statements that had to be valued on a Likert scale, ranging from (1) "I strongly disagree", to (5) "I strongly agree".

Behavioural intention

The following statement was used as an indicator of HCT intention: "I will take an HIV test within the next three months."

Global perceptions: attitude, perceived norm and self-efficacy

Three statements were used for measuring attitude towards HCT: "VCT is useful", "It is wise to go for VCT" and "It is important to go for VCT" (Cronbach's alpha = .77). One statement was included to measure perceived norm: "People who are important to me think it is good to go for VCT." One item was used to measure the participants' self-efficacy with reference to the ability to undergo an HIV test: "I think I would be able to go for VCT."

Underlying beliefs

For measuring the *outcome beliefs* that could possibly underlie the attitude towards HCT, eight statements were used about the likelihood that going for HCT would result in certain outcomes. Factor analysis (extraction method: principal component analysis; rotation method: varimax with Kaiser normalisation) revealed two factors with an eigenvalue over 1; the two factors accounted for 68.7% of the variance. Six items loaded on the first factor: "Should I test HIV positive, I can learn to accept that"; "Should I test HIV positive, I will manage to consistently take anti-retroviral medicine for the rest of my life"; "Should I test HIV-positive, I expect that I will be able to cope with the physical side effects of antiretroviral medicine"; "Should I test HIV positive, I will be able to take care of myself"; "Should I test HIV positive, I am able to plan a good future for myself"; and "Should I test HIV positive, I believe I will still be able to realise my dreams". Two items loaded on the second factor: "Should I test HIV positive, I fear that I will be stigmatised and discriminated against"; and "Should I test HIV positive, I fear that I will be rejected by my loved ones". The first factor was called *coping expectation* (Cronbach's alpha = .89), the second factor was called *fear of rejection and discrimination* (Cronbach's alpha = .77; $r = .62, p < .001$).

Four items were included to measure different *normative beliefs*, i.e. the extent to which the participants believed that specific (groups of) significant others would hold the opinion that it is good to go for HCT: "My parents think it is good to go for VCT"; "My friends think it is good to go for VCT"; "My family thinks it is good to go for VCT"; and, "My community thinks it is good to go for VCT".

Two items were used to measure *efficacy beliefs* with regard to HCT: "I would be too afraid to go for VCT" and "Going for VCT would be very stressful for me". For both items, all scores were recoded such that high scores indicated a positive efficacy belief and low scores indicated a negative efficacy belief. Since these items essentially asked the same question, and the scores indeed proved to be clearly related (Cronbach's alpha = .77; $r = .62, p < .001$), it was decided to construct one combined efficacy-belief variable, called *confidence in going for HCT*.

Distal variables

Based on earlier studies (see above), five *distal variables* were included that might possibly relate to underlying beliefs: perceived severity of HIV/AIDS, perceived susceptibility to HIV/AIDS, fear of inappropriate behaviour of medical staff, stigmatising attitude toward PLWHA (people living with HIV/AIDS), and knowledge about HIV/AIDS.

For measuring *perceived severity of HIV/AIDS*, the following two items were included: "It is dangerous to get infected with HIV" and "HIV/AIDS is a very dangerous disease" (Cronbach's alpha = .73; $r = .59, p < .001$). One item was used to measure *perceived susceptibility to HIV/AIDS*: "I am at risk of getting infected with HIV". Two items measured *fear of inappropriate behaviour of medical staff*: "Should I go for VCT, I fear that the clinic staff will give my test results to other people" and "If I test HIV positive, I am afraid that the hospital staff will have very negative attitudes towards me when I go for medical help" (Cronbach's alpha = .66; $r = .50, p < .001$). *Stigmatising attitude toward PLWHA* was also measured using two items (scores were recoded): "People who have HIV/AIDS have nothing to feel guilty about" and "People who have HIV/AIDS are like everybody else" (Cronbach's alpha = .79; $r = .65, p < .001$).

Knowledge about HIV/AIDS was measured by means of twelve questions about how the disease can spread and about possible treatment. Participants could answer "Yes", "No" or "I don't know" to each question. Four examples of such knowledge-related questions are: "Must a person have many different partners to get HIV/AIDS?"; "Can a person get HIV/AIDS by sharing kitchens and bathrooms with someone with HIV/AIDS?"; "Does washing after sex help to protect you against HIV?"; and, "Is there a cure for HIV/AIDS?" Participants could score twelve points here (one point per correct answer). There were no points for incorrect answers or for answering, "I don't know". All scores were transformed into scores on a scale from 0 to 1. The higher the score, the higher a participant's knowledge about HIV/AIDS was deemed to be.

Pre-test of the questionnaire

A pre-test of the questionnaire was carried out with ten first-year students, both male and female. The students were asked to complete the questionnaire and to write down any remarks they had. The participants were specifically asked whether the instructions had been clear enough, whether they had understood every question, whether they had encountered any problems while completing the questionnaire and whether they had been able to remain focused. All participants indicated that they had understood the questions and instructions, and that they had encountered no problems while answering the questions.

3.3 Procedure

The data were collected in May 2009. Students were recruited at different locations on campus. After a short introduction, questionnaires were handed out to those students who were willing to participate. The time needed to complete the questionnaire varied considerably among participants. Some finished the task within ten minutes, while others took almost half an hour to do so. The average time required to complete the questionnaire was approximately fifteen to twenty minutes.

The 113 students who participated in this study were either invited to do so during an English lecture (permission was given by the lecturer), or at various places on campus. During the

English lecture, about 200 students from various faculties (mostly in their first year) were present; 100 questionnaires were handed out randomly to students who were willing to participate. Most students were enthusiastic to participate; there turned out to be more volunteers than the required 100 participants. Of the 100 questionnaires that were returned, 12 questionnaires had to be excluded from data analysis because of contradicting or missing answers, so that there were 88 questionnaires with data fit for analysis. The second set of 25 usable questionnaires were collected by inviting a total of 30 students at other places on campus – e.g. in the computer centre near the library or in one of the student residences – to participate in this study. One of the latter group of students indicated not being able to participate because of lack of time, and four other questionnaires had to be excluded from data analysis because of contradicting, missing or inconsistent answers. All of the responses were anonymous.

4. RESULTS

To analyse the data, a hierarchical regression analysis was first run using HCT intention as the dependent variable (see Table 1 for the relevant descriptives).

**Table 1: Mean scores and standard deviations (N=113)
(scale 1-5, except for 16. Knowledge about HIV/AIDS: scale 0-1)**

Variable	M	SD
1. HCT intention	3.56	1.29
2. Attitude	4.52	0.81
3. Perceived norm	4.37	1.00
4. Self-efficacy	4.10	1.20
5. Coping expectation	3.99	1.06
6. Fear of rejection and discrimination	3.10	1.44
7. Normative belief regarding parents	4.27	1.02
8. Normative belief regarding friends	3.88	1.33
9. Normative belief regarding family	4.20	1.05
10. Normative belief regarding community	3.73	1.31
11. Confidence in going for HCT	3.19	1.40
12. Perceived severity of HIV/AIDS	4.43	1.07
13. Perceived susceptibility to HIV/AIDS	2.64	1.67
14. Fear of inappropriate behaviour of medical staff	2.15	1.25
15. Stigmatising attitude toward PLWHAs	1.90	1.25
16. Knowledge about HIV/AIDS	0.82	0.13

We found that entering the three global perceptions, namely attitude ($M = 4.52$; $SD = 0.81$), perceived norm ($M = 4.37$; $SD = 1.00$) and self-efficacy ($M = 4.09$; $SD = 1.20$) led to significant quantities (20%, $F(3, 95) = 8.09$, $p < .001$) of explained variance in HCT intention ($M = 3.57$; $SD = 1.29$). Of the three global perceptions, self-efficacy ($\beta = .31$; $p = .001$) and perceived norm ($\beta = .27$; $p = .007$) were significant predictors of HCT intention; attitude, however, was not ($p = .97$). As the second block, we entered the seven underlying beliefs that were measured. This did not lead to a significant increase in the explained variance (from 20% to 26%; $p = .44$), this indicating that there was no relation of the underlying beliefs to HCT intention, other, that is, than via global perceptions. Next, the five distal variables were entered. This led to a significant increase in the explained variance in HCT intention (from 26% to 37%, $F_{\text{change}}(5, 83) = 2.85$, $p = .02$). Further analysis revealed that there was one distal variable that significantly contributed to this increase, namely *perceived susceptibility* ($\beta = .32$; $p = .01$). This result indicated that perceived susceptibility ($M = 2.64$; $SD = 1.67$) did not relate to HCT intention via global perceptions and underlying beliefs, but that a direct relation existed between the distal variable in question and HCT intention.

Next, two hierarchical regression analyses were run in which the global perceptions that had proven significantly to contribute to the explained variance in HCT intention served as dependent variables. In the first analysis, the dependent variable was self-efficacy. Entering the seven underlying beliefs as a first block led to a significant amount of explained variance (24%, $F(7, 91) = 4.20$, $p < .001$). There were two underlying beliefs that significantly contributed to the explained variance in self-efficacy: *coping expectation* ($\beta = .27$; $p = .01$) and *confidence in going for HCT* ($\beta = .27$; $p = .01$). Entering the five distal variables as the second block did not lead to a significant change in explained variance ($p = .27$), this indicating that there was no relation of the distal variables with self-efficacy other than via its underlying beliefs *coping expectation* ($M = 3.99$; $SD = 1.06$) and *confidence in going for HCT* ($M = 3.19$; $SD = 1.40$). Subsequently, a hierarchical regression analysis was performed with perceived norm as the dependent variable. Again, entering the seven underlying beliefs as a first block led to a significant amount of explained variance (41%, $F(7, 91) = 9.02$, $p < .001$). The only underlying belief that significantly contributed to this variance in perceived norm proved to be "My parents think it is good to go for VCT" ($\beta = .44$; $p < .001$). Entering the five distal variables as the second block once more failed to lead to a significant change in explained variance ($p = .88$), this indicating that there was no relation of the distal variables with perceived norm other than via the participants' underlying belief that their parents would approve of their going for HCT ($M = 4.27$; $SD = 1.02$).

Finally, three non-hierarchical regression analyses were performed, in which the dependent variables were the underlying beliefs that had proven significantly to contribute either to the explained variance in self-efficacy or to perceived norm: *coping expectation*, *confidence in going for HCT*, and the participants' belief that their parents would approve of their going for HCT. As predictors, the five distal variables were used. There proved to be no significant contribution of this set of distal variables to the explained variance in the participants' underlying belief that their parents would approve of their going for HCT ($p = .48$). However, it was found that the set of five distal variables significantly contributed to the variance explained in both *coping expectation*

(13%, $F(5, 93) = 2.74, p = .02$) and confidence in going for HCT (24%, $F(5, 93) = 5.96, p < .001$). Further analysis revealed that the only distal variable that significantly and negatively contributed to coping expectation was *stigmatising attitude toward PLWHA* ($\beta = -.41; p < .001$). *Stigmatising attitude toward PLWHA* ($M = 1.90; SD = 1.25$) also proved to be the only distal variable that significantly and once again negatively contributed to the explained variance in confidence in going for HCT ($\beta = -.29; p = .005$).

5. DISCUSSION

In the target group on which this study focused – students at a previously disadvantaged university in South Africa – HCT intention proved to be positively related to two global perceptions: the participants' perception of having control over their HCT behaviour (self-efficacy), and their perception of social pressure in respect of going for HCT (perceived norm).

In conformity with the IMBP, underlying beliefs were not directly related to HCT intention, but only through global perceptions. The participants' belief that their parents would approve of their going for HCT, proved strongly and positively to be related to their perceived norm. The participant's belief that they would not be too afraid or stressed to go for HCT positively contributed to their self-efficacy, as did their belief that they would be able to deal with a possibly disadvantageous outcome of the HIV test.⁵

From the five distal variables that were included as possible predictors of HCT intention, two did indeed prove to be just that: *stigmatising attitude toward PLWHAs* and *perceived susceptibility to HIV/AIDS*. An individual's *stigmatising attitude* was negatively related to both the belief that he/she would be able to deal with the consequences of a disadvantageous test result and the belief that he/she would be able to go for HCT. Via these two beliefs, *stigmatising attitude* was negatively related to self-efficacy, and ultimately to HCT intention. Contrary to what the IMBP assumes, *perceived susceptibility* proved to be directly related to HCT intention, and then not through a global perception and its underlying beliefs.

⁵ It should be noted that the belief of being able to deal with the consequences of testing HIV positive – being based on the IMBP – was expected to function as an outcome belief related to HCT intention via attitude, but proved to be so via self-efficacy. In view of the subject matter of outcome beliefs (the likelihood that the behaviour may result in certain advantageous or disadvantageous outcomes) and the subject matter of self-efficacy (the capability of performing this behaviour), it does not seem illogical that in this case feeling able to cope with a disadvantageous result of the behaviour (here of having tested HIV positive) bears a close relation to feeling capable of carrying out such behaviour (here of going for HCT). The correlation that was found to exist between the variables coping expectation and confidence in going for HCT ($r = .42; p < .001$) points in the same direction, i.e. the more capable a member of this population feels of being able to cope with the possibility of testing HIV positive, the stronger will be his/her conviction of indeed being capable of going for HCT.

6. CONCLUSION

According to the outcomes of this study, promotion messages aimed at convincing black students in South Africa to go for HCT should focus primarily on a number of variables, which prove to be related, directly or indirectly, to HCT intention. These variables are the students' belief that their parents would approve of their going for HCT; the fear and the stress they may expect to experience when going for HCT; their self-confidence in respect of dealing with a possibly disadvantageous outcome of the HIV test; their possible stigmatising attitude toward PLWHAs; and their perceived susceptibility to HIV/AIDS. Mean scores and standard deviations for all of these variables leave room for improvement (see Table 1), which might be achieved by a well-informed and targeted HCT campaign.

As indicated in the introduction of this article, SANAC guidelines state that HCT promotion messages "will remain positive and hopeful and forward-focused [and] should not delve into questions of discrimination, stigma or confidentiality issues", because "... by trying to tackle these things, it only further entrenches them" (SANAC, 2010: 12). However, in view of the relevance as was established in this study of the students' fear both of going for HCT and of a possibly disadvantageous outcome, and moreover in view of the relevance of their perceived susceptibility to HIV and their own possible stigmatising attitude towards PLWHAs, it would be foolhardy to keep silent about these themes – at least not when communicating with a target group similar to the students involved in this particular study. By contrast, only when addressing variables that prove to be relevant for HCT intention in this group, promotion messages may be expected to contribute successfully to positive HCT decisions.

It should be noted here that this study was conducted in only one South African region, and among participants from only one specific target group. Possibly, if the study had been performed in other South African regions or with other target groups, different results would have been obtained. However, comparing the outcomes of this study with the findings reported in earlier studies of this nature, a number of similarities are interesting. As in this study, Tempelman and Vermeer (2009) found perceived social pressure to be a predictor of HCT intention. According to Swanepoel et al. (2008), referring to a group of black students comparable to those interviewed in the present study but coming from a different university, HCT intention was positively related not only to their self-efficacy in going for HCT and to their perceived susceptibility to HIV, but also to their self-confidence in dealing with the possible consequence of testing HIV positive. Even if similar outcomes were found in the present study, a relatively new outcome here was that HCT intention among black South African students was positively affected by the belief that their parents would approve of their going for a test, and that this was moreover negatively affected by a possibly stigmatising attitude towards PLWHA.

This study illustrates how a theoretical framework – such as the IMBP – may be used for collecting the type of information required for well-informed decisions regarding the content of health messages. The next step in making such messages effective is to design a message format based on information-processing models, for example the Elaboration Likelihood Models (Petty & Cacioppo, 1986) and message-effect theories, such as those on narratives (Green, 2006) and

exemplars (Zillman & Brosius, 2000). It is the combination of such theories with behavioural models, such as the IMBP, that may be expected to be the best breeding ground for successful health messages in mass media campaigns (cf. Cappella, 2006; Yzer, 2008).

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REFERENCES

- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50 (2), 179-211.
- Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Birdsall, K., Hajjiyannis, H., Nkosi, Z. & Parker, W. (2004). *Voluntary counselling and testing (VCT) in South Africa: analysis of calls to the national AIDS helpline*. CADRE, South Africa.
- Boshamer, C.B. & Bruce, K.E. (1999). A scale to measure attitudes about HIV-antibody testing: Development and psychometric validation. *Aids Education and Prevention*, 11 (5), 400-413.
- Cappella, J. N. (2006). Integrating message effects and behavior change theories: organizing comments and unanswered questions. *Journal of Communication*, 56 (Issue Supplement 1), 265-279.
- Fishbein, M. (2000). The role of theory in HIV prevention. *AIDS Care*, 12 (3), 273-278.
- Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behavior: an introduction to theory and research*. Reading, MA: Addison-Wesley.
- Fishbein, M. & Yzer, M. (2003). Using theory to design effective health behavior interventions. *Communication Theory*, 13 (2), 164-183.
- Green, M.C. (2006). Narratives and cancer communication. *Journal of Communication*, 56 (Issue Supplement 1), 163-183.
- HEAIDS (2010). *HIV prevalence and related factors. Higher Education Sector Study, South Africa, 2008-2009*. Pretoria: Higher Education South Africa.
- Janz, N.K. & Becker, M.H. (1984). The health belief model: a decade later. *Health Education Quarterly*, 11 (1), 1-47.
- Kalichman, S. & Simbayi, L. (2003). HIV testing attitudes, AIDS stigma, and voluntary HIV counselling and testing in a black township in Cape Town, South Africa. *Sexually Transmitted Infections*, 79 (6), 442-447.
- Manganello, J. & Fishbein, M. (2009). Using theory to inform content analysis. In A.B. Jordan, D. Kunkel, J. Manganello & M. Fishbein (Eds), *Media messages and public health: a decisions approach to content analysis* (pp. 3-14). New York: Routledge.

- Noar, S.M. (2006). A 10-year retrospective of research in health mass media campaigns: Where do we go from here? *Journal of Health Communication*, 11 (1), 21–42.
- Noar, S.M., Palmgreen, P., Chabot, M., Dobransky, N., & Zimmerman, R.S. (2009). A 10-year systematic review of HIV/AIDS mass communication campaigns: Have we made progress? *Journal of Health Communication*, 14 (1), 15–42.
- O’Keefe, D. (2002). *Persuasion: theory & research*. (2nd ed.). Thousand Oaks: Sage Publications.
- Petty, R.E. & Cacioppo, J.T. (1986). *From communication and persuasion – central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Rosenstock, I.M. (1974). Historical origins of the health belief model. *Health Education Monographs*, 2, 1-8.
- SANAC Secretariat (2010). *The national HIV counselling and testing campaign strategy*. Retrieved May 15, 2012, from <www.redribbon.co.za/documents_v2/HCT-Campaign-Strategy-2_3_10%20final.doc>
- Swanepoel, P. (2005). *Persuading South-Africans at risk of HIV/AIDS to voluntarily present themselves for counselling, testing and referral (VCT): using theory and empirical evidence in formative research for VCT message design*. Department of Afrikaans and Theory of Literature, University of South Africa. Retrieved May 15, 2012, from <www.epidasa.org/publications.html>
- . (2010). Promoting voluntary counselling and HIV testing (VCT) amongst South African students: "Quick and Easy?" *African Journal of Rhetoric*, 2, 94-131.
- Swanepoel, P., Burger, M., Loohuis, A. & Jansen, C. (2008). Promoting VCT among South African students: Are we missing the message? In P.H. Swanepoel, & H. Hoeken (Eds). *Adapting health communication to cultural needs: optimizing documents in South African health communication on HIV and AIDS* (pp. 89-106). Amsterdam: Benjamins.
- Tempelman, H. & Vermeer, A. (2009). An AIDS awareness programme in a rural area of South Africa to promote participation in voluntary counselling and testing. In L. Lagerwerf, H. Wasserman, & H. Boer, H. (Eds). *Health communication in Southern Africa. Engaging with social and cultural diversity* (pp. 241-260). Amsterdam: Rozenberg Publishers; Pretoria: UNISA Press.
- Van Dyk, A. & Van Dyk, P. (2003). "What is the point of knowing?" Psychological barriers to HIV/AIDS voluntary counselling and testing programmes in South Africa. *South African Journal of Psychology*, 33 (2), 118-122.
- Verheij, K. & Jansen, C. (2010). HIV/AIDS related beliefs at the University of Limpopo. *African Journal of Rhetoric*, 2, 49-71.
- Yzer, M. (2008). The integrative model and message-based HIV prevention. In P. Swanepoel, & H. Hoeken, H. (Eds). *Adapting health communication to cultural needs: optimizing documents in South African health communication on HIV and AIDS* (49–69). Amsterdam:, Benjamins.
- Zillmann, D. & Brosius, H.B. (2000). *Exemplification in communication: the influence of case reports on the perception of issues*. Mahwah, NJ: Lawrence Erlbaum Associates.