CHAPTER 2: LITERATURE REVIEW

In the two decades since HIV/AIDS was first identified, the body of research into the disease has been steadily growing. Today this research covers a wide range of topics ranging from strictly medical studies to the social and demographic implications of the study as well as to research into interventions and best practices that may help to halt the spread of the disease. This chapter will provide an overview of the impact of HIV and AIDS in Africa, discuss various strategies that have been used to address HIV/AIDS, reviews assumptions and key findings with regard to using teachers as tools for change, provides an overview of variables that have been associated with HIV/AIDS behavior, and briefly reviews two key theories that are used as the basis for this study (namely the Theory of Planned Behavior and Attitude Functions). The chapter concludes with a description of the research questions and hypotheses for this study.

The Impact of HIV/AIDS in Africa

The statistics about the impact of HIV/AIDS world-wide are overwhelming. Estimates of the United Nations Agency for AIDS (UNAIDS) indicate that over 40 million people were living with HIV/AIDS in 2001, that nearly 25 million people have died of AIDS since the disease was first discovered in the early 1980's, and that more than 15.6 million children under 15, have lost either their mother, their father, or both parents as a direct result of AIDS (UNAIDS, 2001).

While every nation has in some way been affected by this pandemic, it is in Africa that the grip of HIV and AIDS has been, by far, the deadliest. Twenty-eight million people in Africa are living with HIV/AIDS and Southern Africa has the highest HIV adult prevalence in the world. Well over two thirds of the HIV/AIDS related deaths (18 million, or 72%) are from Africa (World Bank, 2002) and almost one in every ten adults in sub-Saharan Africa are HIV positive (UNESCO, 2002), although infection rates in individual countries such as South Africa, Botswana, Malawi, and Swaziland are much higher.

The magnitude of the problem becomes clear when one considers that well over one third (39 percent) of adults in Botswana, and one in every five (20 percent) adults in South Africa, are estimated to be HIV positive (NIC, 2002).

At a human level, the financial burden of HIV/AIDS is at least 30% greater than deaths from other causes, because it affects the most productive age group (young adults), and because the costs of medication and caring for the sick are staggering and can be prolonged (Coombe,

2002). HIV/AIDS leads to financial, resource and income impoverishment (Barnett & Whiteside, 2002), and puts severe strain on individuals and households. The psychological stress that is a direct consequence of the impact of HIV/AIDS on individuals and families can compromise school and work performance, family relationships, and the capacity to take care of children, and may also culminate in risk behavior such as alcohol and drug abuse and in unsafe sexual behavior (Coombe 2002).

The HIV/AIDS pandemic disproportionately affects women who already carry a very hard burden in many African countries. From a physiological and medical perspective women are at a greater risk of getting infected. In addition, they are often solely responsible for the household and the children, and have less financial and material reserves to fall back on. Women also face the risk of abandonment or abuse at the hands of their partners when HIV/AIDS strikes. And when family members fall sick as a result of HIV, it is most often the girls who will be removed from schools to take care of those who are sick (Barnett & Whiteside, 2002). This increases their susceptibility to poverty and to the disease because they will probably marry younger and will not have the benefits of an education.

HIV/AIDS represents not only a tragedy at a human level but also heavily affects the economic development of countries, many of which are already severely strained for resources. The weight on the health system is tremendous and the loss of productive workforce has implications for the economy. Cross country analyses conducted by the World Bank suggest that the region of Southern Africa is losing an estimated 0.7 to 1.0 percent per capita growth per year as a direct result of HIV and AIDS and that by the year 2010 it may have reduced the aggregate output by between 15 to 20 percent (World Bank, 2002). By some estimates between 50 and 80 percent of hospital beds in Southern Africa are occupied by people with HIV related infections (UNAIDS Press Release, 2001).

UNAIDS (2003) warns that unless drastic action is taken, the damage that has already taken place is very likely to be minor compared to what is still to come. In fact, as Kelly (2003) notes, all predictions to date have proven to be conservative at best with dire projections about the progression of the pandemic needing to be revised every year because they are inevitably short of the mark.

Changing Strategies in Addressing HIV/AIDS

In Africa, HIV/AIDS has - since it was first discovered - been a predominantly heterosexually transmitted disease which affects men, women and children, although in varying proportions. Because the pandemic poses such enormous challenges, governments and health

planners have been hard pressed to find adequate ways of containing its spread and the last two decades have seen a multiplicity of different approaches develop, some which have since been discarded. In Africa, as in other continents, HIV/AIDS was initially seen mainly as a health concern, and it was widely assumed that preventive and supportive interventions which directly targeted vulnerable segments of the population (truck drivers, sex workers, drug users, etc.) would succeed in containing the pandemic. However, as the dimension of the problem started to become increasingly evident, the woeful inadequacy of this approach became apparent and the disease quickly spread over to other segments of the population (World Bank, 2002).

Over the past five to seven years the focus has shifted from approaches targeted very specifically to segments of the population from a health perspective to multi-sectoral plans and strategies, which seek to involve a wide variety of government and non-governmental agencies (Coombe, 2002). The rationale for a multi-sectoral approach arises from the recognition that HIV/AIDS requires an integrated response to break the cycle of poverty and gender inequality that is at the center of its spread (UNESCO, 2002). The education sector figures prominently within this newly emerging multi-sectoral approach (Coombe, 2002; UNESCO 2002). There are various reasons for this. Firstly, children between the ages of 5 and 14 have the lowest HIV prevalence rate of all population age groups, since they did not get infected at birth and are generally not yet sexually active. This means that focusing on forming/changing the attitudes, skills and behavior of these children can have a potential pay-off. Secondly, children in this age group are still in the formative stages of their lives, which means that their health and social behavior can still be influenced (UNAIDS, 1997).

School-age children thus constitute the “window of hope” (IBRD/WB, 2002) for many countries, and the education system provides a privileged opportunity for working with this age group since, in many of the countries, most children spend at least a few years of their lives in school. As the World Bank notes: “education offers a ready made infrastructure for delivering HIV/AIDS prevention efforts to large number of uninfected population” (IBRD/WB, 2002, p. xv). The focus on the education system also makes sense from a cost-benefit perspective. It is widely recognized that basic education is one of the most effective means of making a difference in economic terms since it becomes possible to reach large numbers of children at a time. And finally, there is ample evidence that: “a good basic education ranks among the most effective – and cost-effective – means of HIV/AIDS prevention” (IBRD/WB, 2002, p. xv), because there is a strong inverse relationship between vulnerability to diseases such as HIV, malaria and others, and level of education (Vandemoortele and Delamonica, 2000).

Education and Teachers as Tools for Change – Assumptions and Key Findings

The focus on education makes sense objectively and intuitively when one considers that the education system reaches the majority of people in most countries and that almost every prevention effort depends on education and communication in some way or another (Kelly, 2003; UNAIDS, 1997; UNESCO 2002). Education is also necessary to combat the culture of silence, the stigmatization, and the discrimination that is associated with HIV/AIDS (UNESCO 2002). From a gender specific perspective, there is an additional benefit to be gained, since research has shown that girls who stay in school longer will start sexual activity later, as well as being more likely to require male partners to use condoms later on in life (World Bank, 2002).

The responsibility of promoting change through the education system falls on the shoulders of teachers. Policy and program documents analyzed for the purpose of this study consistently suggest that the role of teachers in combating HIV/AIDS should involve at least the following three key elements:

- Creating preventive awareness of the disease by generating knowledge/understanding;
- Promoting attitude development and change; and,
- Ensuring that children develop skills that will allow them to be competent and assertive in managing relationships and sexual issues (UNESCO, 2002).

Knowledge about HIV and AIDS is centered on disseminating information about the modes of transmission, means of prevention, and behaviors that enhance susceptibility. Attitudes typically concern not only the overall attitude toward the disease, but also encourage tolerance and understanding of those that have been affected by HIV. The skills that children will need are frequently formulated very broadly (and are therefore often termed life skills) in terms of communication, critical thinking, self-efficacy, among others. In practice, however, a lot of the teaching about HIV/AIDS in schools still focuses only on the knowledge dimension of HIV/AIDS (Action Aid, 2003).

The task for teachers is, however, daunting from various perspectives. Teachers often lack the curricular time and orientation to adequately address the issue within schools (Kelly, 2002). In addition, studies have also shown that most teachers routinely do not even get the information, training or support that they need in order to be able to implement their work (Malambo, 2000; Kelly, 2003; Action Aid 2003). Teachers often rely on rote learning, which promotes an academic/overly scientific interpretation of the subject (Kelly 2003; UNESCO 2002; Action Aid 2003) without ensuring that students have a true understanding of the factors that

affect transmission of the disease and which still leaves them relatively unequipped to prevent becoming infected. An additional complicating factor is that teaching children about HIV/AIDS goes against the predominant view in most societies in which sex is a taboo topic that should not be discussed at any cost. Kelly notes that although educators are usually aware of the knowledge and information gap that exists between the home and the school, they are very often - because of the reasons mentioned above –unable to make provision for it. A tension arises between how disease is interpreted in terms of values attitudes and beliefs in the home environment and the scientific way in which it is presented in the schools (Kelly, 2003). At the same time, the nature of the disease is such that open discussion is tremendously important (Kelly, 2003; Macintyre, Brown, Sosler, 2001) since it is the silence about the disease and its effects that facilitates its spread and leads to stigmatization. Some researchers therefore argue that education about HIV/AIDS and related areas should therefore not be seen as an "optional extra ... (but as) …a matter of life and death" (Kelly, 2002, p. 11).

An additional complicating factor is that teachers are feeling the strain of the pandemic too, and according to some sources are being disproportionately affected by it (Coombe & Kelly, 2001). The World Bank (2002) sums up the current situation by stressing that HIV/AIDS has a heavy impact on the education system from three perspectives. The first of these is the demand for education, since children are getting sick, leading to absenteeism and dropping out of school. The second impact is on supply of education as a result of sickness, death and psychological and economic strain on teachers. And finally, the combined effect of the impact on supply and demand is having a considerable impact on the costs of education, as sick days go up and new teachers have to be trained to substitute for those that are falling sick and dying. In many countries teachers seem to be dying at a much higher rate than similar age groups – quite possibly as a result of contracting HIV[8]. As a result, Kelly (2003) notes that the education system will need to establish programs and activities that run on a continuum from prevention to care, so as to be able to prevent the spread of the pandemic among both children and teachers, and to provide effective care and support for those among these two groups that are already affected by the pandemic. The World Bank estimates that an additional 550 million dollars per year will be needed for the low income countries to achieve the objectives of Education for All.

There is some (gradually increasing) recognition for the fact that teachers probably lack many of the key 'ingredients' that they need (because of the constraints mentioned above) to effectively address the three vertices of an integrated education approach to combating HIV/AIDS

[8] Teachers in Africa often spend large periods of time away from their family which makes it more difficult for them to maintain a monogamous relationship. Also, in many countries there is simply not a culture of monogamy (Kesby, 2000).

(UNESCO, 2002, Kelly 2003). Yet, governments and strategic plans in Eastern and Southern Africa generally continue to ignore or fail to address the need to focus on HIV/AIDS education and support for teachers in pre- and in-service training as well as in schools (Coombe, 2002) even though there is evidence that such training can contribute to better understanding and more positive attitudes toward that disease by teachers (Chifunyse, Benoy, Mukiibi, 2002). There is a serious concern about the capacity or willingness of many teachers to engage in life skills programs or to provide the complementary care and counseling support (Coombe 2002). So, as Coombe notes: "it is assumed that teachers will be at the HIV/AIDS battlefront, but they are generally unarmed" (2002, p.30).

Figure 3 – Primary school children filling out a questionnaire about HIV/AIDS

In addition, most of the research on HIV/AIDS education in schools has focused on assessing the change in the target group (i.e. the children in the schools) in terms of knowledge, attitudes, and intended or actual behavior (cf. Horizons, 2001; Venier, Ross & Akande, 1997; Nwokocha & Nwakoby, 2002; Brook, 1999, Sikand, Fisher & Friedman, 1996, Davis, Noel, Chan & Wing, 1998; Mkumba & Edwards, 1992). Far fewer studies have specifically and systematically examined: i) teachers' knowledge, attitudes and behavior with regard to HIV/AIDS education; 2) how teachers are juggling this complicated task of contributing towards the fight against HIV and AIDS in their schools and communities; and 3) how they are perceiving the impact of the disease (or how the disease will have an impact on them). As is noted in a recent report by Action Aid: "very limited research has been devoted to the implementation of HIV/AIDS in the classroom" (2003, p. 31), and most of what is known about what happens in school is based on anecdotal evidence (Kelly, 2000). There appears to be an implicit assumption that once teachers are given the right training and support (curriculum and materials), they will necessarily become effective vehicles for contributing to promoting the envisioned change in the "window of hope" target group.

The limited research that has looked at teachers in the context of HIV/AIDS has thus focused heavily on determining what teachers know, and on identifying possible misconceptions, and on whether they have been teaching the content that they are required to teach. A brief

overview of a selection of studies is interesting for the present inquiry, not only because it illustrates the point that was just made, but also because these studies reveal something of the complexity that characterizes the situation under which teachers have to carry out their role of teachers and facilitators of HIV/AIDS knowledge, skills and awareness.

Two separate qualitative studies by Chiwela and Mwape (1999) and Molambwe (2000) of Zambian teachers and HIV/AIDS clearly reveal that most teachers in that country have neither been trained to deal with HIV/AIDS nor have they been provided with teaching/learning materials. As a result, teachers are not sufficiently knowledgeable on the topic to be able to pass on correct and complete information to students. Teachers were also not aware of the need to use extra-curricular activities to teach HIV/AIDS instruction and when questioned about this they generally indicated that they did not see extra-curricular activities as a viable channel for teaching about HIV. The study also highlighted a lack of openness towards communicating about HIV and AIDS, with teachers declaring they felt uncomfortable talking about matters related to sex with their pupils, and thus engaging in selective teaching of topics. Chiwela and Siamwiza (1999) reported that teachers believe that young people who are exposed to sexual information will be more likely to engage in sexually permissive behavior later on in life and thus argued against providing this information.

A study of science teacher's intentions to teach about HIV/AIDS in the United States (Lin & Wilson, 1998) found that teachers' attitudes toward teaching about HIV/AIDS was the most significant of various factors examined in predicting intentions. Other important predictors were teachers' knowledge of HIV/AIDS, more positive attitudes towards teaching about HIV/AIDS, less negative social influence from principals and other managers, and availability of resources. Teachers with higher intentions were also found to be less embarrassed talking about sexual subject matter.

A qualitative study in India (Verma, Sureender, and Guruswamy, 1997) which examined children and teachers' perceptions of AIDS and sex found a similar relationship between science teachers and less inhibition in talking about HIV and AIDS. This perception was shared by non-science teachers who declared that this was a topic that should be dealt with in science class rather than throughout the curriculum. A study in Massachusetts, United States, demonstrated a clear ink between knowledge and subject taught (Dawson et al., 2001) with health teachers having a significantly better knowledge of HIV/AIDS. The same study also found a direct relationship between teachers' knowledge of HIV/AIDS and positive or supportive attitudes toward HIV, and also found that female teachers hold more positive attitudes toward teaching about HIV/AIDS than male teachers.

One of the most relevant of these studies is a recent study by Action Aid (2003) on the difficulties of communicating about HIV/AIDS in schools in Kenya and India. This study established that many teachers engage in selective teaching of HIV/AIDS topics, leaving out sensitive and sexually explicit material and presenting the content in an overly-scientific manner. Selective teaching appeared to be a particular problem in rural areas with teachers appearing to be "teaching some lessons on HIV, but exercising their own judgment in which messages should be taught or not" (p. 32). The report highlights as possible reasons for this situation lack of training, lack of confidence and responsibility, gender issues, low priority in the curriculum to these lessons, and the wider crises in education which is perpetuated by poor conditions in schools, low salaries and other factors. The study concluded that this selective and abstract teaching approach was contributing to the culture of silence and to the perception that HIV/AIDS is linked to immorality and perpetuating the belief that HIV/AIDS is a "them, not us" (Action Aid, 2003, p.7) issue which, as has been well documented, perpetuates the culture of silence, and leads to further stigmatization and denial. In addition, a significant number of students (23 percent in Kenya and 13% in India) reported that they felt teachers were probably not the best role models for teaching about HIV/AIDS since their own sexual behavior contradicted with what they were supposed to advocate. The study argues for a focus on developing locally-driven materials in teaching about HIV and AIDS, and that these materials should include local testimonies, statistics and case studies. It also emphasizes the importance of training teachers to use the life skills that they are supposed to convey to their students.

To this I add my own study (Visser, 2002) which examined teachers' perceptions of the impact of HIV/AIDS on schools and communities in Mozambique. This qualitative study clearly highlighted the multidimensional interpretation that teachers have of the factors that influence the continued propagation of the disease – factors which lie very much beyond the boundaries of that which is the responsibility of the school system, to include issues such as poverty, human rights, the after effects of the war, cultural and social norms, among other issues. In this study, teachers clearly emerge as individuals, with their own experience and personal stories about the manner in which the HIV/AIDS pandemic is affecting their schools and communities. The findings of this study also underscored the potentially significant impact that knowing someone who is affected by HIV/AIDS can have. The findings of this study concur with those of Action Aid (2003) and of Chiwela and Mwape (1999) and Molambwe (2000), in highlighting the very narrow and academic interpretation that many teachers appear to have of their role by focusing on the scientific dimensions of the disease, in detriment of the holistic approach that, as was seen above, is being advocated by health communication experts and development workers.

What lessons can we learn from this brief overview? In the first place there is an obvious inconsistency between the level of responsibility that is being given to teachers and the amount of

research that is being devoted to teachers as key players in the fight against HIV and AIDS. In the second place, the review clearly shows that very few of the studies examined teachers as individuals, as distinct personalities, within their teaching context. Specifically, there appears to have been very little consideration of how individual difference variables which in other HIV/AIDS related studies have shown to be crucial - such as knowledge about HIV/AIDS, knowing someone who is affected by HIV/AIDS, perceived self-efficacy, and attitudes toward particular aspects of the disease - impact on teachers' approach to dealing with this pandemic. Finally, most of the quantitative studies have used convenience samples and can therefore not be generalized beyond the group of teachers studied.

Given the pervasive impact of HIV and AIDS on communities in Africa and the dire predictions of what is still to come there is no doubt that all resources, human and otherwise, will need to be mobilized to fight the disease. With respect to teachers, the present study will seeks to identify whether such specific individual difference variables affect their teaching intentions and actual behavior, and provide in-depth accounts of how teachers are being affected by HIV/AIDS and how they are addressing the pandemic in their schools and communities.

Before turning to the details of the present inquiry it will be necessary to consider two further issues. The first will be a succinct review of variables that in other studies have been shown to influence HIV/AIDS related behavior and which are relevant to the present study. The second necessary detour will argue for the pertinence of using both the Theory of Planned Behavior and Attitude Functions as the basis for understanding teachers' intentions.

Variables Associated with HIV/AIDS Behavior

Quantitative and qualitative studies over the past decade and a half have contributed to our understanding of factors that influence HIV/AIDS related behavior and it is important, for the purpose of this study, to briefly review here some of the variables for which strong and persistent links have been found. The results of these studies clearly highlight how behavior is an outcome of a complex interaction of a variety of factors including knowledge, perceived threat, perceived self-efficacy, proximity to people who have been affected by HIV/AIDS, among other factors.

A first important aspect is the strong and consistent link that has been found in a number of studies between the *level of knowledge of HIV/AIDS* and sexual activity (Magnani, 2002). People with a higher level of knowledge appear to be more likely to abstain from high-risk sexual activity and to consistently use a condom (Magnani, 2002, Volk 2001). A second important dimension appears to be the link between level of sexual activity and school attendance as well

as knowledge of HIV. Those who attended school to a later age are more likely to initiate sex later and to use a condom than those who dropped out (Mangnani, 2002).

A further important aspect of the pandemic is the potential implications of the silence that surrounds the disease. Various studies have pointed out the important relationship between *talking about HIV/AIDS* and strategies for coping and addressing the consequences of the virus. In a study of the effectiveness of peer education and sexuality in Germany, Appel and Kleiber (1997) found that communication skills were an important intervening variable in adolescents' capacity to manage personal relations. Communication also extends to people with HIV/AIDS. The results of a study by Simon-Meyer and Dellalo (2002), in South Africa, highlighted the importance of involving people with HIV/AIDS in creating awareness in the workplace since it makes others more willing to discuss the problem. Similarly, Macintyre et al. (2001) found that *knowing someone who died of AIDS* was consistently associated with lower levels of denial and a more consistent pattern of condom use among men in three African countries. Denial was also found to be relevant in a study of Israeli adolescents which found that high levels of denial and low perception of personal relevance were associated with irregular condom use by adolescents in that country (Ben-Zur, Breznitz, Wardi, & Blerzon, 2000). *Disclosure of HIV status* is a further aspect of communication which may also have a very important influence on the quality of life in the context of HIV infection in India (Chandra, Deepthivarma, Jairam, & Thomas, 2003).

Figure 4 - Women waiting to do an HIV/AIDS test at a hospital in Gaza Province

Related to communication is the aspect of *emotional expression and depth of processing* which appears to have a distinct relationship with overall well-being of people with HIV/AIDS and is also related to their long term survival (O'Cleirigh, 2003). A study in Nigeria, Kenya and Zimbabwe, found that social anxiety about HIV/AIDS is a multi-dimensional concept which is related to condom interactions, refusal of risk, confiding in significant others, contact with people with HIV/AIDS and general assertiveness (Venier, Ross, & Akande, 1997).

There is some support also for a relationship between *fatalism* and HIV/AIDS attitude and knowledge variables and subsequent behavior. This link has not been very consistently studied,

and should be seen as an open area for further research, but the limited studies done in this field do indicate that that fatalism can be strongly associated with negative attitudes towards the disease and with negative perceptions of other groups such as people living with HIV/AIDS (Ramirez, Crano, Quist, Burgoon, Alvaro and Grandpre, 2002).

Mass media exposure has also been linked to behavioral intent and behavior. MacIntyre et al. (2001), in their study of condom use among men in Uganda, Kenya and Zambia, found that men in Kenya and Uganda who listened to the radio on a daily basis were significantly more likely to report behavior change than those who did not listen (this relationship was not significant, however, for Zambia). Karlyn (2001) found a similar relationship in a study of radio exposure in Mozambique, where adults who recalled the campaign messages were almost twice as likely (odds ration 1.9) to try to change their behavior as those who did not recall these same messages. Interestingly, this study included a measure of self-efficacy to measure intent to carry out the targeted behavior after exposure to a certain message.

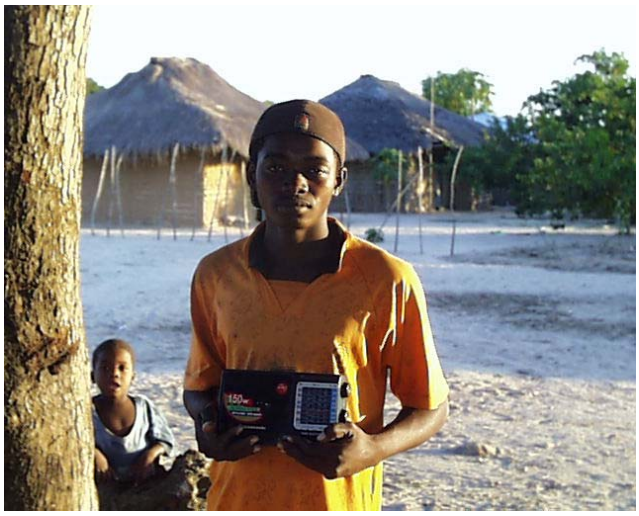

Figure 4 - The radio is a popular means of mass communication in Mozambique

The Theory of Planned Behavior

Prevention efforts have with some frequency included an element of how attitudes may affect the perceptions of this disease and how these attitudes influence behavior or behavioral intent (Bruce & Walker, 2001). However, as was noted above, very few studies have examined teachers' attitudes in the context of HIV/AIDS.

Not all prevention efforts are based on theory, but those that are theoretically based and that focus on individuals and their behavior (King, 1999) have commonly been based on one or more of the following theories/models: the health belief model (Rosenstock et al., 1994), the AIDS risk reduction model (Catania et al., 1990), stages of change model (Prochaska, DiClemente, 1992), protection motivation theory (Rogers, 1983), the theory of reasoned action (Fishbein &

Middlestadt, 1989) and the theory of planned behavior (Azjen, 1985). As Bruce and Walker (2001) note, these models generally have certain constructs in common, including saliency of the problem, perceived threat or personal susceptibility, and often some element of social norm and beliefs about severity of the disease.

Recognizing the Factors that Influence Planned Behavior

The theoretical basis for present inquiry lies for a significant part in the various dimensions of decision making that are inherent to the Theory of Planned Behavior (TPB) which was developed by Azjen in 1985. This theory is a modification of Azjen and Fishbein's 1975 Theory of Reasoned Action (TRA). The TRA assumes that a person's behavior is a function of his/her attitudes toward the behavior as well as subjective norms. The TPB extends this idea and takes into account performance of behaviors which are not entirely under the individual's control, by including the concept of perceived behavioral control. In the specific case of HIV/AIDS therefore, the TPB would argue that an individual's behavioral intent is a function of that individual's attitude, which reflects his/her evaluation of the HIV/AIDS associated behavior (in this case disclosure about HIV), of the subjective norm, which refers to the social pressure that the individual perceives is being exercised by important referents in favor or against this behavior, and finally perceived behavioral control which reflects the perceived ease or difficulty of actually engaging in this behavior.

The TPB thus applies in situations where a person can rationally weigh different alternative actions but where there may be external factors influencing the final outcome of the behavior. I will argue that this typically applies to teachers in schools for the following reasons. Firstly, in general it has been shown that teachers' decision making is the result of both intrapersonal and interpersonal processes (Lin & Wilson, 1998). Secondly, although curricula outline general content to be taught, they still allow sufficient room for teachers to decide on how they will present and address the material. At the same time, it would appear logical that the extent to which they do this will be a function of conditions that are at their disposal in terms of materials, policy, support by other teachers, etc. And finally, because in the Mozambican context very little specific instruction and training has been given to teachers as to how to address the issue of HIV/AIDS, there is therefore considerable room for teachers to contemplate a multitude of different routes.

It is the contention of this study that in line with what is foreseen by the Theory of Planned Behavior, this process of contemplation and decision-making regarding teaching of HIV/AIDS content will be guided by the attitudes that teachers hold, by their assessment of social

norms and by perceived behavioral control (or barriers to implementation). As was discussed above, various studies have provided individual pointers to the importance of each of these variables. In a comparative study of teachers in India and Kenya (Action Aid, 2003), it was found that teachers have specific perceptions of how communities perceive their role, which do not necessarily coincide with what communities themselves say about teachers' roles. This same study also found that the teachers actually made a more negative assessment of the community reaction (fearing that the community was against their role) than was really the case (Action Aid, 2003). In the same study teachers highlighted various barriers to implementation, citing especially lack of materials, and lack of supportive environment from superiors as a limiting factor.

Support for the Theory of Planned Behavior

The TPB has been used as a frame of reference either by itself, or in combination with other behavioral theories in various studies related to HIV/AIDS. The most relevant study in the context of the present inquiry was done by Lin & Wilson (1998). This study used the TRA to examine the intentions of science teachers in the United States to teach their students about HIV/AIDS. This study found that the three variables in the TRA explained science teachers' intentions to teach this subject. It was also found that teachers with higher intentions scored better on the HIV/AIDS knowledge scale, generally had prior experience in teaching the topic, and expressed more positive feelings toward teaching about HIV/AIDS. Godin, Gagon, Alary, Noel and Morisette (2001) used the TPB in a slightly different HIV/AIDS related context to explain correctional officers' intentions to accept or refuse to make available HIV/AIDS preventive tools such as condoms, bleach, and syringes to inmates in prisons and also found support for all three elements of the model. The TPB has also been used to predict intended condom use in a variety of studies, most of which took place in western countries. A study among Tanzanian students by Lugoe and Rise (1999) is the only African study in this field. In this study again all three of the variables were significant in predicting behavioral intent. Appel and Kleiber (1997) used the TPB to examine a peer education program in Germany. Their findings are interesting in particular, because they included a variable of communication skills in their research. Their findings supported only the perceived barriers component of the model and found in particular that the lack of communication skills can be a barrier to action.

There is thus considerable support for the relevance and pertinence of using the TPB when examining deliberate individual actions in the field of HIV/AIDS in general, and in the teaching of HIV/AIDS content in particular. However, none of these studies considered attitude function theory, preferring rather to consider attitudes in a far more general and abstract manner. In fact, Ressler and Toledo (1997) are the only researchers who appear to have linked the Theory

of Reasoned Action (a predecessor of the TPB) with attitude functions in a study that examined Israel's bicycle helmet campaign. At the same time, the present literature review has highlighted that in addition to attitudes, perceived social norms and perceived barriers and behavioral intent, there are a number of other variables that may influence behavior and which could possibly improve the predictive capacity of the model (a similar approach was the basis of a study of adolescents' intent to consume alcohol - Laster & Heald, 1996).

In addition, and as will be argued below, attitude functions may also provide a useful and very specific handle on the individual reasons why people think about a behavior or object in a particular manner.

Attitudes and Their Link to Behavior

One of the aspects that this study will examine is whether attitudes, and specifically attitude functions, influence teachers' willingness to communicate about HIV/AIDS. Research on attitudes dates almost 100 years back and continues to be a widely debated and somewhat contested topic in the literature (cf. Greenwald, 1989), with researchers variously finding strong support the assertion that attitudes guide behavior, and others arguing that no such link can be found.

The persistent question has thus been: "Do attitudes guide behavior?" This apparently simple question generated a significant and increasing volume of research starting in the early 1920's. And, in parallel with the growth in the volume of research, the answer to what is now seen as a deceptively simple question, has grown in complexity.

The first generation of researchers to examine the link between attitudes and behavior departed from the assumption that attitudes had a "directive or dynamic influence on individual response to all objects and situations" (Allport, 1935). According to Fazio (1989) the question of whether there really was a link between attitudes and behavior was initially considered only by few researchers, there was simply the assumption that the link existed. A first landmark study that looked at the relationship between attitudes and behavior was done by La Piere. In 1934, he examined whether there was a link between the behavior of restaurant personnel when asked to serve a Chinese couple and the attitude as expressed in the response to a later mailed out survey to the same restaurants. La Piere found that whilst the large majority of restaurants across the US were willing to seat the Chinese couple, very few respondents to the survey expressed a similarly favorable attitude. He concluded therefore that attitudes had very little to do with behavior.

The study by La Piere stimulated a great deal of response and led to various other studies over the next three decades. These studies, however, found inconsistent support for attitudes as predictors of behavior, and generated disillusionment with this type of questioning and research which was reflected in pessimistic reviews of the state of attitude research by Festinger in 1964 and by Wicker in 1969. The reason, it is now known, that many of these studies failed to find consistent finding is because they were plagued by many of the problems that also characterized the study that was done by La Piere. In this study, the people who attended to the Chinese couple and those that responded to the questionnaire were not necessarily the same. In addition, the couple was accompanied by the researcher who was white. Also the questionnaire did not address behavior, but rather behavioral intent but the study purported to report on the behavior itself.

Aided by improved measurement techniques, the research into attitudes and their link with behavior entered a second generation from the 1960's onward. The question turned from "is there a link?" to "when and under what conditions is there a link?" in recognition of the fact that it was not always possible to find a clear relationship between attitudes and behavior. Guided by the pessimistic reviews of Wicker and Festinger, researchers critically examined both the manner in which attitudes had been defined and the methodologies by which they were being operationalized.

The second generation of research yielded a wealth of information in answer to the "when and under what conditions question?" Taken together, it was found that the attitude-behavior relationship is influenced by situational issues (Warner & DeFleur, 1969), individual differences (Snyder & DeBono, 1985), and classes of attitudes (Fazio, 1990).

With regard to situational issues, it was found that roles, norms and the desire for acceptance moderate the relationship. Warner and DeFleur (1969) conducted revealing research with white college students and found that only highly prejudiced individuals were willing to disclose their opinion. Less prejudiced individuals were only willing to do so if they were guaranteed anonymity. It was Abelson in 1982 who summarized the results of the various studies into situational conditions into a categorization of situational factors. In a nutshell he concluded that attitudes will only guide behavior in highly individuated situations where individuals are in a heightened state of self-awareness and turn inwards to consider their attitudes. In situations that are de-individuated – where the individual can, as it were, hide behind the group – attitudes and behaviors are highly inconsistent, one only has to look at the behavior of cults and other out-groups to see a real-life example of this. In scripted situations, the third category developed by Abelson, attitude-behavior consistency is also low because individuals behave according to what is "scripted" for them in the situation and do not reflect on their attitudes. Differences exist,

however, even within these categories, and so low self-monitors (Snyder & DeBono, 1985) are more likely to show a high A-B consistency because they do not define their perception of self on the basis of others, are more consistent in their link between attitudes and behavior, and therefore have more accessible attitudes.

Individual differences were also found to moderate the attitude-behavior relationship. As was mentioned previously low self-monitors are more likely to be consistent. Snyder and DeBono (1985) developed a scale for measuring self-monitoring which has shown a high degree of validity and reliability in numerous research studies and has had good predictive power. As Zanna, Olson and Fazio (1980) have pointed out, however, there is not always the guarantee that low self monitors will be consistent, it will depend on the amount of previous experience and on the extent to which previous behavior has been consistent. A second individual difference variable that has been found to be important is the degree of direct experience that the individual has with the situation at hand. Fazio and Zanna (1981) through a study with college students who either had or did not have previous experience with psychological experiments, found that attitudes that are based on direct experience are more stable, more clearly defined, more resistant to change and more durable. The college students that had previous experience with psychological experiments were more likely to show a high degree of attitude behavior consistency than those who did not. In contrast, attitudes that are based on indirect experience will rarely predict behavior. Further research has found other personality variables that are important including level of moral reasoning (Rholes & Bailey, 1983) and autonomous-control behavioral self-regulation (Sheier, Buss & Buss, 1978).

Classes of attitudes also influence the attitude-behavior relationship. Thus various attitudinal qualities such as the manner in which the attitude is formed (Fazio, 1990), its stability, and how clearly it is defined in terms of latitude of rejection and acceptance will reflect itself in the consistency between attitudes and behavior.

Although it is impossible to do justice in this short overview to all the research that took place during the three decades since the Wicker and Festinger reviews, it will be clear from the above that this second generation of research yielded a wealth of information about when and under what conditions attitudes may predict behavior. At the same time, however, as Fazio (1989) points out, this research was mainly empirical in nature, with very little theory development. Theory development is what has, to some extent, characterized recent developments (although at the same time research into the when and under what conditions question still continues) and it is to this third generation, the one that is currently on-going, that this reflection will now turn. As the title above indicates, the central question for these researchers has been: “how do attitudes guide behavior?”

A first answer to how attitudes guide behavior was given by the Theory of Reasoned Action or TRA (Fishbein &Azjen, 1975). This theory assumes that people rationally calculate the costs and benefits of engaging in action and that behavioral intention is a better predictor of behavior than attitudes. The theory assumes that behavioral intent is influenced by the attitude that the individual holds toward the behavior and the subjective norm. Attitude toward the behavior is, in turn, a function of the belief that the behavior will lead to a specific outcome and the evaluation of these outcomes. The subjective norm, on the other hand, is a function of the evaluation and normative beliefs of what others will think about this behavior and the motivation to comply with what others think. This theory provides a good explanation why under some conditions people show behavior that is not consistent with their attitude, for example, when the subjective norm component weighs more heavily. This theory has been substantiated by a lot of research, a considerable amount of which by Fishbein and Azjen themselves. The model has held up well in much of this research, especially when the behavioral intention is formulated in very specific terms. A refinement of this theory was later developed by Azjen through the Theory of Planned Behavior or the TPB (Azjen,1988) which in addition to the attitude towards the behavior and the subjective norm component also includes the concept of perceived behavioral control, i.e. the extent to which the individual believes that the presence of certain factors may hinder or promote the performance of the behavior in terms of the resources and opportunities that are available for implementing the behavior. These two theories together have spurred the development of theories in areas such as the health sciences and the findings of these studies will serve as a basis for the present study.

Some criticism has been leveled, however, against this conception of how the link between attitudes and behavior works since it only accounts for the rational decision-making. It is, as Fazio (1989) has pointed out, a “data driven” theory, which expects people to rationally and consistently engage in a thinking and reflection process. Many day-to-day decisions are not taken in this manner, and life would be very complicated if for every decision such an amount of computation had to be done.

Fazio (1990) therefore proposed a model that takes into account how such a spontaneous process may work. This spontaneous processing model is “theory driven” and accessibility of the attitude is a key component of the theory. In short, it is assumed that attitudes guide behavior through a process of attitude activation. Once that attitude is activated this will lead to a process of selective perception (a type of biasing) where the immediate perception of the attitude object is a function of the attitude that was activated and may therefore have a predominantly positive or negative valence depending on the attitude. The immediate perception of the attitude object will, together with a definition of the situation in normative terms (this is seen as a separate process), lead to the definition of the event and determine what behavior to

undertake. Various steps must occur before the behavior towards the object is influenced automatically by the attitude. Firstly the attitude must be activated. The likelihood of activation will depend on the chronic accessibility of the attitude (which in turn is a function of the strength of the attitude). In a series of experiments Fazio found that if the attitude is not accessible then the definition of the event will follow not from the attitude but rather from other salient features of the situation. Once the attitude is activated it will, as was already mentioned above, act as a filter. The attitude may still not be consistent with the behavior, however, if the normative component is not congruent with the attitude. In this case, attitudinally incongruent behavior will result.

One current perspective is therefore that the relationship of how attitudes guides behaviors needs to take into account that processing between the attitude and behavior may be spontaneous or deliberate. At the same time, however, it is now also recognized that, in fact, it is possible to envision that the link between attitudes and behaviors is a combination of spontaneous and deliberate processing with each carrying a different weight depending on the situation. Fazio (1990) has conceptualized this in terms of the MODE model, which basically asserts that the conditions of the situation will determine whether an individual will have the **M**otivation and the **O**pportunity to engage in deliberative or spontaneous processing. Fazio relates motivation to Kruglansky & Thompson's (1999) concept of fear of invalidity, i.e. an individual will engage in cognitive processing when he/she has a high fear of failure or when there are consequences attached to the failure. So in these situations individuals will carefully consider the consequence of their actions and rely on deliberate rather than heuristic processing. Opportunity refers to whether the context makes it possible to engage in deliberative thinking. For example, in a situation in which an immediate decision is required this will not be possibly. Therefore, the MODE model suggests that the deliberate process of retrieving and construction attitudes towards a behavior and deciding on the behavioral intent will only take place when both the motivation and opportunity exist to do so.

As can be seen, the simple initial assumption by researchers at the beginning of the twentieth century that attitudes guide behavior has evolved into a much more complex matrix of questions which has yielded complex and not always complete responses. Nevertheless, research has supported that for certain types of attitudes and under certain conditions, there is a link between attitudes and behavioral intent/behavior. Given that the literature on HIV/AIDS in general, and on teachers and HIV/AIDS in particular suggest that attitudes are a relevant factor in determining behavioral intent/behavior, it seems plausible that a more detailed understanding of the attitudes of teachers can enhance the understanding of factors that guide their decision to discuss this issue with their students. This study used functional theory as a basis for examining the attitudes of teachers. The background to functional theory is explained in the next section of this chapter.

The Contribution of Functional Theory to the Understanding of Attitudes

Functional theory addresses the motivations that underlie attitudes that people hold (Katz, 1960). The main assumption of functional theory is that people hold attitudes for a reason, i.e. that they serve a specific psychological function.

One of the main appeals of understanding different attitude functions is that if messages and interventions are tailored to the specific attitude functions that people hold, then it becomes much easier to address and manipulate those attitudes. By the same token, gaining insight into the attitude functions that teachers hold toward addressing HIV/AIDS offers an intuitive and practical appeal. Assuming that there is some support for a link between at least certain attitude functions and teacher behavior, it then becomes possible to tailor training, communication messages and support interventions to specific attitude functions and to possibly select from among the pool of teachers those who are more likely to effectively implement their role as teachers. The functional approach to attitudes therefore allows us to consider teachers as individuals, many of whom are probably profoundly marked in their thinking by what they know and have experienced in life, rather than as a homogenous group of people who will blindly follow central instructions on what content to teach and will do so effectively if they have the right conditions.

A number of issues associated with attitude functions need to be highlighted here. A first step in the use of attitude functions consists of distinguishing between the different motivations that underlie those attitudes. Various forms of categorization continue to exist in the literature and research in this field and a definitive catalog will probably never be drawn up. For the purpose of this study I will distinguish between the diversified approach to attitude functions and the dichotomous approach – also termed the “neo-functional approach” in Ressler and Toledo (1997). The diversified approach acknowledges the existence of a larger set of attitude functions, including: *utilitarian* attitudes that help people organize perceptions of environment in a manner that allows them to obtain rewards and avoid punishment; *social-adjustive* attitudes that help mediate interpersonal relations; *value-expressive* attitudes that express values important to the self-concept; *ego-defensive* attitudes that protect the self from anxiety and attacks on self-esteem; and finally attitudes that serve a *knowledge* function by satisfying the individual’s need for cognitive learning (Herek, 2000).

The dichotomous approach, on the other hand, emphasizes two broad categories of attitude functions, namely the evaluative and expressive function (Herek, 1986; Herek & Capitanio, 1998; Herek, 2000). Expressive functions are served by symbolic attitudes and are “broadly defined as being related to affirmation of identify and enhancement of self esteem”

(Herek & Capitanio, 1998, p.231). In this case the object of the attitude serves primarily as a symbol. The evaluative functions, on the other hand, are seen as "reflecting an underlying need to understand the social world and are based primarily on self-interested appraisals of the attitude object" (Herek & Capitanio, 1998, p.231).

Applications of Attitude Function Research

Although attitude function theory enjoyed popularity in the 1960's, it is only in the last ten years or so that the development of precise measurement techniques has led to the exploration of the usefulness of this concept in a variety of contexts. More recently attitude functions have been used in the study of a variety of social issues. Wyman and Snyder (1997), for example, examined attitudes towards the lifting of the ban on homosexuals in the military and found that respondents who felt the ban should be lifted, rejected ego-defensive reasons for keeping it and endorsed value-expressive reasons to eliminate the ban.

A central argument for the functional approach to attitudes – which also forms the basis for the present study - is that a better understanding of attitude functions may make it possible to tailor communication campaigns to the specific attitude functions of the audience. From the perspective of the present study that would mean treating teachers not as a homogenous group, but taking into account that different attitude functions may require different approaches in terms of training and support, much as would be the case for a communication campaign.

A key concept in attitude research is that of the attitude object. Greenwald (1989) points out that the concept of an attitude object has been widely interpreted in the realm of attitude research, relating to such aspects as "sensory qualities" (colors, texture), "concrete objects", "abstract concepts" (such as personality traits), "verbal statements", "systems of thought" (such as ideologies), and "actions" (1989, p.4). In the realm of communication, various studies (Petty, Wheeler, & Bizer; 2000) have found support for the fact that if a message has a strong link with the function an attitude serves for a particular segment of the audience, then the message will be more persuasive and, therefore, more likely to influence behavior or behavioral intent (cf: Snyder & DeBono, 1985).

Figure 4 - Attitudes toward sexuality make it difficult, for women in particular, to talk about HIV/AIDS

Not only does functional matching appear to increase the persuasiveness of a message, it also affects perceptions of its validity, as attitude functions may determine for individuals which types of evidence they consider relevant when they are exposed to persuasive information (Thompson, Kruglanski, & Spiegel, 2000). The theoretical underpinnings for this process of linking attitude functions and cognitive/message processing have been based on the Elaboration Likelihood Model (ELM). Indeed, functional matching of a message with relevant attitude functions can enhance message processing through both the peripheral or central route - in the former case by serving as a cue and in the latter case by serving as a motivation for biased processing (Petty, Wheeler, & Bizer; 2000).

Experiments conducted by various researchers (cf: Petty & Wegener; 1998; Marsh & Julka, 2000) have shown that messages that have a strong match with the attitude function, even on sensitive issues such as, for instance, organ donation, will receive more scrutiny, and that the manner in which the message is manipulated is important. For example, it appears motivational inductions lead to stronger matching effects and stronger changes in attitudes than do priming manipulations (Marsh & Julka, 2000). In this manner, for example, people who are provided with a strong value-based and tailored message about organ donation followed by an exercise in which they have to rank these values, will shower stronger value expressive attitudes than those who received a simple priming message (Marsh & Julka, 200). Further research (Petty, Wheeler, & Bizer; 2000) has found preliminary support for a link between certain attitude functions (e.g. social-adjustive) and personality types (high self-monitors).

The attitude function approach has provided interesting insights into other areas of social interest and in health promotion. In the realm of smoking a number of recent studies have looked at attitudes as important predictors of smoking (Piko, 2001; Ragon, 1999; Visser, Arpan & Heald, 2003). The field of HIV/AIDS has also provided interesting insights. At least two studies have found support for the fact that individuals hold attitudes towards persons with AIDS for a variety of reasons (Reeder & Pryor, 2000; Herek, 2000). Herek and Capitanio (1998) examined

stigmatization of individuals with HIV/AIDS from the perspective of the dominant psychological function served by the attitude – i.e. either an evaluative attitude based on concerns for personal risk, or an expressive attitude based on the need to affirm one's self concept by expressing personal values – and discuss the implications of these findings for AIDS education. Consumer marketing too, has made use of attitude functions, for example in examining attitudes towards cars (Ennis & Zanna, 1993) and in advertising (Shavitt, 1990).

Relevance of these Findings to the Present Study

The nature of the findings with regard to teachers that were reviewed above suggests that attitude functions may constitute a relevant route to understanding teachers' attitude toward HIV/AIDS and toward communicating about this topic. In the Action Aid study (2003) teachers' arguments for how they deal with the disease could be interpreted as reflecting a variety of attitude functions. Arguments of morality and religion were used which reflect value-expressive functions, i.e. functions that allow people to express their underlying beliefs and values (Katz, 1960). Teachers' arguments were also related to perceptions about that which is permissible within the context of the community and these could be argued to be indicative of a socio-adjustive attitude, where the individual defines his/her identity on the basis of identification or pressure from reference groups. Similarly arguments related to the knowledge and utilitarian functions could be found in these teachers' accounts. Given the evidence of the utility of using attitude functions to examine various constructs and behaviors related to social issues in general and to HIV/AIDS in particular, and in view of these accounts by teachers, it would appear that a functional approach to teachers' attitudes toward talking about HIV/AIDS and the relationship of these attitudes to their interpretation of their role as teachers, can offer potentially revealing insights that may guide future interventions which seek to use teachers as pivotal points in addressing HIV/AIDS within the classroom and the community.

Rationale and Summary

The above literature review outlined the main strengths and limitations of the research that has been conducted to date. The Theory of Planned Behavior and Attitude Functions were identified as theoretical models that could possibly provide insight into teachers' willingness to communicate about HIV/AIDS.

The following characteristics of this study aim at addressing some of the concerns of the research to date:

- The study will focus on a target group that has been given an enormous responsibility in the field of HIV/AIDS awareness, but concerning which very little research has been done. In this manner, the study will highlight teachers as individuals, who make rational decisions on the basis of individual and contextual difference, rather than as a homogenous group.
- The study will apply an existing theoretical framework (the TPB) to teachers' willingness to communicate about HIV/AIDS, to attempt to verify whether variables that are traditionally believed to impact on behavioral intent and behavior contribute to teachers' decisions about addressing HIV/AIDS.
- The study will integrate the TPB and attitude function theory in an effort to examine whether attitude functions provide a logical explanation for teaches' willingness to communicate about HIV/AIDS.
- The study will also seek to establish whether additional variables that are not typically included in the TPB framework, and that have not been addressed with respect to this target group, improve the explanatory value of the model. Such variables include HIV/AIDS knowledge, personal behavior, experience with HIV/AIDS and certain demographic variables.
- The study will control for two key demographic variables (age and sex) which in medical research are frequently used when examining the link between the predictor and predicted variables.
- The study will use a predominantly quantitative technique (supplemented by qualitative findings) to gain a comprehensive understanding of the factors that influence teachers' reported practice, and to highlight issues that may have been neglected to date. By involving a relatively large number of teachers, the study aims to get some insight into causality between the different variables. Furthermore, the design aims at gaining access to teachers' direct experience with HIV/AIDS in their personal and professional lives. Analyzing this material will not only serve as a means of confirming (or refuting) the quantitative findings, but is also expected to highlight the diversity of interpretations and experience that these teachers have.
- The study will examine differences among teachers at different levels of the education system, something which other studies have not looked at.

Figure 4 - A meeting about health education and HIV/AIDS in a rural school in northern Mozambique

Research Questions and Hypotheses

The central question that this study seeks to address is:

What factors predict teachers' willingness to communicate about HIV/AIDS in school and community settings?

The specific elements of the research question will be explored through component research questions and accompanying research hypotheses. These are presented below and are also summarized in Table 1.

Research question # 1

To what extent do personal characteristics of teachers affect their willingness to communicate about HIV/AIDS in school and community settings?

Hypothesis 1: Younger teachers and female teachers will be more willing to communicate about HIV/AIDS in school and community settings.

Hypothesis 2: Controlling for age and sex, teachers with a high level of personal experience with HIV/AIDS and a high level of knowledge about the disease will be more willing to communicate about HIV/AIDS in school and community settings.

Hypothesis 3: Controlling for age and sex, teachers with a personal conviction that they can do more to address the threat of HIV/AIDS and teachers who consistently protect themselves against HIV/AIDS will be more willing to communicate about HIV/AIDS in school and community settings.

Research question #2

To what extent do "traditional predictors" of the Theory of Planned Behavior explain teachers' willingness to communicate about HIV/AIDS in school and community settings?

Hypothesis 4: Controlling for age and sex, attitudes, social norms and perceived behavioral control will all be significant positive predictors of teachers' willingness to communicate about HIV/AIDS in school and community settings.

Research question #3

To what extent does the level at which teachers teach influence their willingness to communicate about HIV/AIDS in school and community settings?

Hypothesis 5: Controlling for age and sex, teachers lecturing in upper primary (Grades 6 and 7) and secondary (Grades 8 through 12) will be more willing to communicate about HIV/AIDS in school and community settings than teachers in lower primary (Grades 1 through 5).

Research question # 4

To what extent do attitude functions affect teachers' willingness to communicate about HIV/AIDS in school and community settings?

Hypothesis 6: Controlling for age and sex, teachers who hold weak value-expressive attitudes toward addressing HIV/AIDS will be more willing to communicate HIV/AIDS in school and community settings.

Table 1: Overview of Research Questions and Hypotheses

Predicted Variables	Predictor Variables	Research Question(s)	Research Hypotheses
Teachers willingness to communicate about HIV/AIDS in school and community settings	Age and Sex	**Research question 1:** To what extent do personal characteristics of teachers affect their willingness to communicate about HIV/AIDS in school and community settings?	**Hypothesis 1:** Younger teachers and female teachers will be more willing to communicate about HIV/AIDS in school and community settings. **Hypothesis 2:** Controlling for age and sex, teachers with a high level of personal experience with HIV/AIDS and a high level of knowledge about the disease will be more willing to communicate about HIV/AIDS in school and community settings. **Hypothesis 3:** Controlling for age and sex, teachers with a personal conviction that they can do more to address the threat of HIV/AIDS and teachers who consistently protect themselves against HIV/AIDS will be more willing to communicate about HIV/AIDS in school and community settings.
Teachers willingness to communicate about HIV/AIDS in school and community settings	Attitude towards talking about HIV/AIDS, social norms and perceived behavioral control	**Research question 2:** To what extent do "traditional predictors" of the Theory of Planned Behavior explain teachers' willingness to communicate about HIV/AIDS in school and community settings?	**Hypothesis 4:** Controlling for age and sex, attitudes, social norms and perceived behavioral control will all be significant positive predictors of teachers' willingness to communicate about HIV/AIDS in school and community settings.
Teachers willingness to communicate about HIV/AIDS in school and community settings	Level taught	**Research question 3:** To what extent does the level at which teachers teach influence their willingness to communicate about HIV/AIDS in school and community settings?	**Hypothesis 5:** Controlling for age and sex, teachers lecturing in upper primary (Grades 6 and 7) and secondary (Grades 8 through 12) will be more willing to communicate about HIV/AIDS in school and community settings than teachers in lower primary (Grades 1 through 5).
Teachers willingness to communicate about HIV/AIDS in school and community settings	Value expressive attitude function	**Research question 4:** To what extent do attitude functions affect teachers' willingness to communicate about HIV/AIDS in school and community settings?	**Hypothesis 6:** Controlling for age and sex, teachers who hold weak value-expressive attitudes toward addressing HIV/AIDS will be more willing to communicate HIV/AIDS in school and community settings.