Do stigma, blame and stereotyping contribute to unsafe sexual behaviour? A test of claims about the spread of HIV/AIDS arising from social representation theory and the AIDS risk reduction model

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A B S T R A C T

In the context of social representation theory and the AIDS risk reduction model, it has been claimed that stigmatizing, blaming and stereotyping attitudes make people feel less at risk of contracting HIV/AIDS, and that this, in turn, results in them taking fewer precautions in their sexual behaviour. Previous research has failed to provide convincing evidence to support these claims. The present study provided a test of the claims that addressed some of the methodological issues identified in the earlier research. A sample of 460 young people from Ghana, ranging in age from 15 to 28 years (mean = 18), completed a questionnaire that measured the relevant constructs. The results supported the claims in relation to stigmatizing and intended sexual risk behaviour, but not stigmatizing and actual sexual risk behaviour. Although the latter two were correlated, this was not mediated by reduced perceptions of vulnerability. Claims in relation to blaming and stereotyping were not supported. Contrary to expectation, specific blaming and stereotyping attitudes that constructed HIV/AIDS as a sexual disease were associated with safer intended sexual behaviour, and this relationship was mediated by feeling at greater risk.

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as risky. Because they fail to label their behaviour as risky, they will in turn fail to take steps to make it safer.

More recently, it has been suggested that stigmatizing attitudes can likewise increase sexual risk behaviour through the mediation of a reduction in perceived risk. The basis of this suggestion has not been elaborated in any great detail. Campbell et al. make the suggestion on the basis of an identification of stigma with the blaming attitudes that appear in the earlier social representation account (Campbell, Foulis, Maimane, & Sibiya, 2005; Campbell, Nair, Maimane, & Nicholson, 2007). Others have linked stigma with the stereotyping claim that appeared in the AIDS risk reduction model: Boer and Emons (2004) suggested that stigma underlies the tendency to hold stereotyped ideas about who catches HIV/AIDS; Burkholder et al. (1999) suggested that those who stigmatize will not empathize or identify with those who have HIV/AIDS, and so will not see themselves as belonging to the risk groups.

Evidence for the claim

Despite the popularity of these claims about the role of blaming, stereotyping and stigmatizing attitudes, the evidence in support of them is not entirely convincing. Social representation research relating to the claims has used qualitative interviews and/or information about the percentage of participants responding in a certain way. Although some of this research is supportive of the claims, not all of it is. Supportive studies have reported that their samples show both high levels of blame or stigma, and a low perception of personal vulnerability to the disease (e.g., Campbell, Foulis, Maimane, & Sibiya, 2005; Campbell, Nair, Maimane, & Nicholson, 2007). Others have linked stigma with the stereotyping claim that appeared in the AIDS risk reduction model: Boer and Emons (2004) suggested that stigma underlies the tendency to hold stereotyped ideas about who catches HIV/AIDS; Burkholder et al. (1999) suggested that those who stigmatize will not empathize or identify with those who have HIV/AIDS, and so will not see themselves as belonging to the risk groups.

Evidence for the claim

The present study

In summary, several related claims have arisen from the social representation approach and the AIDS risk reduction model which suggest that stereotyping, blaming and stigma will lead to a reduced sense of threat, which will, in turn, lead to reduced safety in sexual behaviour. The evidence for these hypotheses is not particularly convincing. Studies from the social representation tradition are generally descriptive, and, even then, not all the evidence is unequivocally supportive. Studies that have investigated correlations between individual differences have a more convincing design, but there is much inconsistency in the evidence and no study has provided evidence in support of all three implications of the claim.
The present study sought to test the claims, taking into account some of the methodological issues that have been highlighted. A questionnaire was devised that measured stigma, blame and stereotyping among young people in Ghana, along with the perception of threat, the safety of intended sexual behaviour, and actual sexual behaviour.

To increase the chances of finding evidence in favour of the claims, it was considered important to sample from a population that both faced a significant risk from HIV and that viewed itself as belonging to mainstream society (i.e., an in-group that was more likely to endorse the representations hypothesized by the social representation approach to lead to a decreased perception of vulnerability). Sampling from the secondary and tertiary education systems within Ghana seemed likely to meet these criteria. There is a significant risk of infection: In 2007, approximately a quarter of a million (from a population of 23 million) were estimated to be HIV-positive, and 30% of new infections occurred amongst those under the age of 25 (UNAIDS, 2008). Moreover, those in Ghana’s secondary and tertiary education are likely to include a significant proportion of young people from more affluent families representing the dominant in-groups within Ghanaian society. Ghana is a relatively wealthy African country with the ninth largest economy in sub-Saharan Africa (World Bank, 2009), and it has a substantial number of relatively wealthy citizens. Secondary education is not compulsory in the country and those from the wealthier strata in society are significantly over-represented (Osei, 2006). The sample also included people as young as 15 with the intention of obtaining a reasonable proportion of sexually inexperienced participants, since this would increase the chances of finding an association between perceived threat and sexual safety by reducing the influence of actual risky sexual behaviour on the assessment of perceived threat.

Method

Participants and procedure

Ethical approval for the study was granted by the ethics committees of the University of Birmingham and of the Ghana Health Service. The Ghana Education Service also gave their authorization for the study to be carried out in the schools and university. Participants received no money or other recompense for their participation.

Participants were recruited from four secondary schools and one university in Accra, the capital city of Ghana. Participants were required to be at least 15 years of age. For each school, information leaflets were distributed to 100 students meeting the age requirement in classes nominated by the school. Those interested in taking part signed a consent form and were invited to a data collection session. The questionnaires were completed in the classrooms. Each class of students completed the questionnaire at the same time and a researcher was on hand to answer any questions. University students were recruited by appealing for volunteers at the end of lectures. Questionnaires were presented in English, which is the primary language used in the secondary education system in Ghana. The data were collected over a 2-month period spanning 2006 and 2007.

Seventy university students and 390 school students took part (460 in total). This represents participation by over 97% of the school students approached. Information about the response rate from the university students was not collected. Fifty-one percent were male, and ages ranged from 15 to 28 years (mean = 18, and 92% of the sample were between 16 and 21). Just under a third of the sample (N = 146) reported that they had had sexual intercourse at least once, and 11% (N = 49) reported knowing someone with HIV. The majority of the participants were Christians (91%), with another 8% being Muslims. The three main ethnic groups represented in the sample were Akan (48%), Ewe (24%) and GaDangme (21%). Compared to the general population, Christians were over-represented and the Mole-Dagomba ethnic group under-represented. The sample was also better educated than the general population, since secondary education is not compulsory in Ghana. As expected, many also came from relatively affluent homes (e.g., 35% of participants’ fathers worked as professionals, compared to the 4% of the general population who work in professions). (Information about the general population was obtained from the 2000 population census conducted in Ghana (Ghana Statistical Service, 2005).)

Measures

A questionnaire was designed specifically for the study. This is somewhat problematic in that it meant using a measure that had not been shown to be reliable and valid in previous studies. However, relevant questionnaires with good psychometric properties are not readily available for all the constructs measured in this study. Moreover, questionnaires validated in one cultural context may be of limited reliability and validity in another context (Davidson, Jaccard, Triandis, Morales, & Diaz-Guerrero, 1976). To address these issues, the questionnaire was developed using the ‘etic–emic’ approach described by Codin et al. (2008). The ‘etic’ component involves the use of clear theoretical constructs; whilst the ‘emic’ component involves the use of qualitative methodology to gather information about how a particular theoretical construct manifests itself in a particular cultural context. These two components are used to generate a questionnaire that aims to be theoretically valid but also sensitive to the cultural context.

The questionnaire measured constructs relating to stigma; beliefs about the origins of HIV; blaming and stereotyping attitudes; perceived vulnerability to HIV; and actual and intended safe sex practices. In relation to the ‘etic’ component, Nyblade’s (2006) article was used to provide the theoretical definition of HIV-related stigma, and thus items were included that addressed negative and hostile feelings towards those with the disease, the avoidance of social contact with them, and support for punitive and discriminatory social policies. The health belief model provided the theoretical definition of perceived vulnerability, and it was defined in terms of the participant’s beliefs about the extent to which they were at risk of HIV infection (Sheeran, Abraham, & Orbell, 1999). Ideas for possible items relating to stigma and perceived vulnerability were also taken from previously-published questionnaires measuring these constructs (Boer & Emons, 2004; Burkholder et al., 1999). For the variables relating to the origins of HIV and blaming attitudes, the conceptual background and ideas about possible items for inclusion were taken from social representation studies that have focused on these constructs (Goodwin et al., 2003; Joffe & Bettega, 2003). The concept of stereotypic health beliefs is derived from the work of Weinstein (1989) and relates to the suggestion that if there is a general stereotype of a person at high risk of a disease, then people wrongly conclude that they are at low risk because they do not belong to that group (Catania et al., 1994). Items relating to safety in actual and intended sexual behaviour were partly based on previous studies that have used these as outcome measures (Burkholder et al., 1999; Sheeran et al., 1999). They included questions about the choice of sexual partners and the use of condoms. The variable relating to intentions also included items about celibacy and the likelihood of having sex without a condom in various risky situations.

To incorporate the ‘emic’ component, fourteen focus groups (each with between 6 and 9 participants) were run prior to the
main study. Participants were recruited from the schools used in the main study (though not from the same classes). The groups were facilitated by one of the researchers and discussed a range of issues concerning HIV/AIDS and sexual behaviour. Transcripts of these discussions were coded using thematic analysis (Braun & Clarke, 2006). This analysis provided information about what issues were important and relevant to the targeted population, and about the language and concepts used to express their opinions about these matters. This material was then used to devise the questionnaire with the intention of developing items that were sensitive to how the different theoretical constructs manifested themselves in this particular cultural context.

The final questionnaire contained 94 items and 11 subscales. Items were answered ‘yes/no’ or ‘true/false’, and given a score of zero or one. Items across each subscale were summed to give a total score for that subscale. Higher scores represented higher endorsement of that construct (e.g., higher ‘perceived vulnerability’ scores represented a belief that one is more vulnerable to contracting HIV). Table 1 summarizes the content of the questionnaire. Internal consistency of subscales was evaluated using Cronbach’s alpha, and the obtained values are also shown in Table 1. The alpha was poor for the ‘HIV origins’ variable, but this is not surprising given that the subscale contained a range of beliefs some of which could not be consistently held by the same person (e.g., the belief that HIV began because of people having sex with animals and the belief that it began because of gay men having sex).

The blaming and stereotyping variables were obtained by the use of factor analysis. The focus groups yielded a list of social groups that the participants believed were more vulnerable to catching the disease and/or were partly to blame for the spread of the disease. This list was included in the questionnaire and, for each group, the participant was asked to indicate whether they thought this group was important and relevant to the targeted population, and whether the group was partly to blame for the spread of the disease in Ghana (blaming). The results for the stereotyping and for the blaming items were then subjected to two separate factor analyses, using Principal Factoring for extraction and Direct Oblimin for rotation. Examination of the scree plot suggested selection of the first three factors in both analyses. These first three factors were readily interpretable (see Table 1). The ‘blaming sex groups’ and ‘stereotyping sex groups’ variables comprised items that asked about groups who practise risky sex, such as ‘people who have many sexual partners’ and ‘prostitutes and other sex workers’. It was considered that ‘blaming young people’ and ‘stereotyping young people’ merited inclusion in the analysis because they involved the perception of the ‘in-group’ as being vulnerable and blameworthy, and therefore might be expected to show the opposite relationship to those variables focusing on foreign influences and risky sex (in other words, that those who perceived young people as being vulnerable and blameworthy would feel more at risk and be safer in their intended sexual behaviour).

### Results

The data were prepared for parametric analysis using the steps recommended by Tabachnik and Fidell (2001). Where the distribution departed considerably from the normal distribution (specifically, ‘blaming sex groups’ and ‘stereotyping sex groups’ were both negatively skewed) or where the range of scores on the variable was very restricted (specifically, ‘blaming young people’ and ‘stereotyping young people’), scores were converted to dichotomous variables, with as close to 50% in each category as was possible.

### Descriptive statistics

Table 1 provides information about the mean, standard deviation and obtained range of scores for each variable. The descriptive statistics suggested that, considered as a social group, the present sample did not conform to the characterization of society’s response to HIV/AIDS suggested by some of the previous research within the social representation approach (i.e., a complacent population which blames others, feels invulnerable to the disease and

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Number of items</th>
<th>Description and sample item</th>
<th>Alpha</th>
<th>Mean</th>
<th>SD</th>
<th>Obtained range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma</td>
<td>30</td>
<td>Assessed negative and hostile feelings towards those with HIV/AIDS, the avoidance of social contact with them, and support for punitive and discriminative social policies towards them “People with HIV/AIDS are a bad influence on society”</td>
<td>.82</td>
<td>12.6</td>
<td>5.2</td>
<td>2–27</td>
</tr>
<tr>
<td>HIV origins</td>
<td>6</td>
<td>Willingness to ascribe origins of HIV/AIDS to negatively evaluated sexual practices and foreign sources “HIV/AIDS probably began in Europe or America”</td>
<td>.41</td>
<td>3.3</td>
<td>1.4</td>
<td>0–6</td>
</tr>
<tr>
<td>Blaming sex groups</td>
<td>7</td>
<td>Willingness to blame groups practising risky sex for spread of the disease “Would you partly blame this group for the spread of HIV/AIDS in Ghana?” Prostitutes and other sex workers</td>
<td>.73</td>
<td>6.3</td>
<td>1.2</td>
<td>0–7</td>
</tr>
<tr>
<td>Blaming foreign influence</td>
<td>5</td>
<td>Willingness to blame foreign influences for spread of the disease “...: Migrants who have come to Ghana from neighbouring countries”</td>
<td>.73</td>
<td>3.0</td>
<td>1.7</td>
<td>0–5</td>
</tr>
<tr>
<td>Blaming young people</td>
<td>3</td>
<td>Willingness to blame young people for spread of the disease “...: Young women”</td>
<td>.73</td>
<td>1.4</td>
<td>1.9</td>
<td>0–3</td>
</tr>
<tr>
<td>Stereotyping — sex groups</td>
<td>7</td>
<td>Perceiving those groups practising risky sex as being more vulnerable to the disease “Do you think this group is more likely to have HIV/AIDS than the average person: Prostitutes and other sex workers”</td>
<td>.67</td>
<td>6.4</td>
<td>1.1</td>
<td>0–7</td>
</tr>
<tr>
<td>Stereotyping — foreign influence</td>
<td>5</td>
<td>Perceiving foreigners within Ghana as being more vulnerable to the disease “...: Migrants who have come to Ghana from neighbouring countries”</td>
<td>.74</td>
<td>3.0</td>
<td>1.7</td>
<td>0–5</td>
</tr>
<tr>
<td>Stereotyping — young people</td>
<td>3</td>
<td>Perceiving young people as being more vulnerable to the disease “...: Young women”</td>
<td>.84</td>
<td>.9</td>
<td>.9</td>
<td>0–2</td>
</tr>
<tr>
<td>Perceived vulnerability</td>
<td>8</td>
<td>Assessed actuarial perception of own vulnerability to catching HIV/AIDS “People like me are reasonably safe from HIV/AIDS, even if we have sex without a condom”</td>
<td>.63</td>
<td>5.7</td>
<td>1.9</td>
<td>1–8</td>
</tr>
<tr>
<td>Actual safe sex</td>
<td>6</td>
<td>Degree to which actual sexual behaviour has been safe “Have you ever had sex with a prostitute or other sex worker?”</td>
<td>.65</td>
<td>3.9</td>
<td>1.7</td>
<td>0–6</td>
</tr>
<tr>
<td>Intended safe sex</td>
<td>16</td>
<td>Degree to which intended sexual behaviour is safe “In the future, do you intend to avoid having sex with someone you don’t know very well or have only just met?”</td>
<td>.73</td>
<td>12.6</td>
<td>2.8</td>
<td>0–16</td>
</tr>
</tbody>
</table>
fails to practise safe sex – Campbell et al., 2007; Joffe, 1999; Joffe & Bettega, 2003; MacPhail & Campbell, 2001). Although there was a tendency towards blaming others, this was not universal (e.g., only 67% thought ‘migrants from neighbouring countries’ were partly to blame) and was counterbalanced by a substantial recognition of the responsibility of mainstream society (e.g., 54% considered that ‘young people’ were partly to blame). There was some degree of complacency in their responses about the degree of risk they faced, but this was confined to a minority. For example, only 25% agreed with the statement that “HIV/AIDS doesn’t happen to people like me”. The data from those who were sexually active suggested that although more care could be taken, these participants were not failing to take any significant precautions against the disease. For example, although 51% of the sexually active participants reported having had sex with someone other than a steady partner, 55% of these said that they had always used a condom in such encounters.

**Mediation analysis**

Mediation analysis was used to test the claims that stigma, blame and stereotyping lead to unsafe sex through the mediation of lower perceived vulnerability. As a preliminary step, the correlations amongst the relevant variables were calculated. Because of the large sample size and number of correlations, the alpha level was set at .01. Table 2 shows the relevant correlations. Only stigma showed the hypothesized correlations with perceived vulnerability and sexual intentions/behaviour. Contrary to expectation, ‘blaming sex groups’ and ‘stereotyping sex groups’ had significant positive correlations with both perceived vulnerability and intended sexual behaviour. Because ‘blaming young people’ and ‘stereotyping young people’ involved the perception of the in-group as being vulnerable and blameworthy, it was expected that these variables might show a positive correlation with safer sex, but there was no evidence of this.

Because stigma showed the expected correlations, a mediation analysis was completed for this variable. AMOS 7 software (SPSS, 2006) was used to calculate the size and significance of the indirect mediated effect of stigma on sexual outcome (Kenny, 2009). Separate analyses were conducted for the two sexual behaviour variables. For intended safe sex, the estimated indirect effect was -.032 (95% confidence intervals, -.016 to -.054; p < .001); in other words, when stigma scores went up by one, intended safe sex went down by .032. This compared with a direct effect of -.113 (95% CI, -.057 to -.170; p < .001). Together, the indirect and direct effect explained 10% of the variance in intended safe sex scores (squared multiple correlation = .099). Thus, as hypothesized, there was a significant effect of stigma on intended safe sex that was mediated by reduced perceived vulnerability, but the significant direct effect indicated that the mediation was only partial. For actual safe sex, stigma had a significant direct effect of -.098 (95% CI, -.039 to -.151; p = .001), but this was not mediated via reduced perceived vulnerability (indirect effect = -.002; 95% CI, .015 to -.020).

Because ‘stereotyping sex groups’ and ‘blaming sex groups’ had significant positive correlations with intended safe sex and perceived vulnerability, mediation analyses were completed for these variables as well. The analysis was consistent with the idea that the positive correlation between these two variables and safer sexual intentions was partly mediated by an increase in perceived vulnerability (stereotyping sex groups: indirect effect was .334; 95% CI, .570 to .168; p < .001, and direct effect was .793; 95% CI, 1.34 to .240; p = .006) (blaming sex groups: indirect effect was .322; 95% CI, .568 to .159; p < .001, and direct effect was .811; 95% CI, 1.360 to .253; p = .005).

**Demographic analysis**

The correlation and mediation analyses were repeated for a range of demographic groups based on age, gender, source of recruitment, prior sexual intercourse, acquaintance with someone who is HIV-positive, religion and parental occupation. In general, the pattern of results observed for the whole sample was also observed in the individual groups. No group showed a significant correlation or mediation effect in the opposite direction to that shown by the whole sample. There were, though, some findings of note. First, those who reported prior sexual intercourse, the older half of the sample and the university students all showed the same results as the whole sample: Perceived vulnerability was a significant partial mediator for both the relationship between stigma and intended safe sex, and that between blaming/stereotyping sex groups and intended safe sex. Second, compared to males, females showed weaker correlations between stigma and actual safe sex (.13 vs. .28); between stigma and intended safe sex (−.20 vs. −.25); between blaming sex groups and intended safe sex (.12 vs. .23); and between stereotyping sex groups and intended safe sex (.10 vs. .22). Despite this, the female group still showed a significant mediating effect of perceived vulnerability in all three mediation analyses. Females scored significantly lower than males on the stigma variable (mean = 12.1 vs. 13.3; t = 2.5; p = .012) but significantly higher on blaming sex groups (6.5 vs. 6.1; t = 2.7; p = .008). Finally, compared to the other main ethnic groups (Akan and GaDangme), those of the Ewe group (N = 110) showed weaker correlations between stigma/blaming sex groups/stereotyping sex groups and intended safe sex; and they failed to show a significant mediating effect in any of the three mediation analyses.

**Discussion**

**Blame and stereotyping**

This study tested claims that stereotyping, blame and stigma lead to reduced caution in sexual behaviour through the mediation of lowered perceived vulnerability. The study did not provide evidence to support these claims in relation to stereotyping and blame. Most of the stereotyping and blame variables were not significantly correlated with sexual risk intentions/behaviour or perceived vulnerability. The exceptions were the ‘stereotyping sex groups’ and ‘blaming sex groups’ variables. Contrary to expectation, higher scores on these variables were associated with increased caution in sexual risk intention and the analysis was consistent.

Table 2

<table>
<thead>
<tr>
<th>HIV Origins</th>
<th>Blaming sex groups</th>
<th>Blaming foreign influence</th>
<th>Blaming young people</th>
<th>Stereotyping sex groups</th>
<th>Stereotyping foreign influence</th>
<th>Stereotyping young people</th>
<th>Stigma</th>
<th>Perceived vulnerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual safe sex</td>
<td>.089</td>
<td>.067</td>
<td>.075</td>
<td>.060</td>
<td>.141</td>
<td>.030</td>
<td>.015</td>
<td>.306**</td>
</tr>
<tr>
<td>Intended safe sex</td>
<td>.058</td>
<td>.206**</td>
<td>.045</td>
<td>.030</td>
<td>.198**</td>
<td>.060</td>
<td>.012</td>
<td>.245**</td>
</tr>
<tr>
<td>Perceived vulnerability</td>
<td>.104</td>
<td>.209**</td>
<td>.045</td>
<td>.048</td>
<td>.220**</td>
<td>.067</td>
<td>.102</td>
<td>.295**</td>
</tr>
</tbody>
</table>

*p < .01; **p < .001.
with the idea that this relationship was mediated by increased perceived vulnerability.

An interpretation of this finding is not readily available. High scores on the variables of stereotyping and blaming sex groups suggested a social representation that focused on sexual activity as a major cause of the disease's spread. The great majority of the participants presumably expected to become sexually active within the next few years of their life (if they were not already). For those who represented HIV/AIDS primarily as a disease associated with sexual activity, the combination of this expectation and this representation may have had the effect of increasing their feelings of being vulnerable to the disease. This, in turn, may have led to an increased intention to practise safe sex.

These findings about the blame and stereotyping variables are at variance with some previous research. Research within the social representation approach has reported the co-occurrence of blaming out-groups and low perceived vulnerability (e.g., Joffe, 1999); within the context of the AIDS risk reduction model, Catania et al. (1994) and Moore and Rosenthal (1991) reported significant negative correlations between stereotyping and perceived vulnerability. It may be relevant that much of this evidence dates from the earlier stages of the AIDS epidemic when the characterization of society's response to the disease typically reported in this social representation research (i.e., blaming others, feeling complacent and not altering risky sexual behaviours) may have had more application. Some of the later research, such as the series of studies conducted in Eastern Europe by Goodwin et al. (2003, 2004a, 2004b), have tended to find, as did the present study, a more complex and varied set of representations in which the denial of responsibility, complacency and feelings of invulnerability do not predominate. A more nuanced social response to the disease may have weakened earlier links between blame/stereotyping and perceived vulnerability. Differences in the conceptualization and measurement of the constructs may also be relevant. In the present study, stereotypical attitudes were measured by asking participants to rate the vulnerability of a range of named groups. In the study by Catania et al. stereotyped beliefs were measured by two items that were conceptually closer to the measure of perceived vulnerability used in this study (e.g., “I am not the kind of person who could ever get AIDS”) while in the Moore and Rosenthal study they were asked to say how clear a picture they had of the kind of person likely to catch the disease.

**Stigma**

In contrast to stereotyping and blame, stigma did show the predicted relationships: Higher stigmatizing attitudes were associated with reduced safety in intended sexual behaviour through the mediation of reduced perceptions of vulnerability. In the Introduction, it was argued that these relationships are more likely to occur if participants are asked about their intended sexual behaviour rather than their actual sexual behaviour. The results gave some support to this conjecture. Although the mediating effect of perceived vulnerability occurred for intended safe sex, it did not occur for actual safe sex, even though there was a significant correlation between stigma and actual safe sex. This may explain why Burkholder et al. (1999) and Volk and Koopman (2001) failed to find evidence to support the hypothesis about the mediating role of perceived vulnerability in relation to stigma, since both studies asked about actual sexual behaviour.

This finding in relation to actual sexual behaviour raises the question of whether perceived vulnerability has any mediating role to play in relation to actual sexual behaviour. It was argued in the Introduction that asking about actual sexual behaviour is less likely to provide evidence for a mediating role because some of those who have engaged in actual risky behaviour may accurately judge that they are at greater risk, and this trend towards a positive correlation between perceived vulnerability and sexual risk behaviour would dilute any trend towards a negative correlation due to the impact of perceived vulnerability on efforts to reduce risk. However, this argument applies only to actual sexual behaviour that has already taken place. It leaves open the possibility that perceived vulnerability may play a mediating role in relation to actual sexual behaviour in the future: Those who have engaged in risky sexual behaviour in the past may perceive themselves as more vulnerable and this perception may, in turn, lead to greater safety in actual sexual behaviour in the future. Those who have stigmatizing attitudes may be less likely to perceive themselves as vulnerable as a result of risky behaviour in the past, and thereby less likely to make efforts to ensure safety in their future sexual behaviour. In this case, perceived vulnerability would mediate the relationship between stigma and future sexual risk behaviour. Results in the present study were consistent with this idea: Those in the sample who were sexually active also showed the expected mediating role of perceived vulnerability on the relationship between stigma and intended sexual behaviour (i.e., their plans for the future). However, an adequate test of the idea would require a longitudinal study that investigated whether current stigma predicted actual risky behaviour in the future, and whether that relationship was mediated by current perceived vulnerability.

It was noted in the Introduction that, within the context of both the social representation approach and the AIDS risk reduction model, the hypothesis about stigma originally arose because of the supposed link between stigma and blame/stereotyping. It was suggested that the nature of this link was vague and poorly articulated. The results of this study cast further doubt on the idea that stigma has these connections with reduced perceived vulnerability and sexual safety because of its links with blame and stereotyping, since stigma showed the expected relationships, but stereotyping and blame did not. So why might stigma reduce perceptions of vulnerability? Stigma serves to emphasize and enhance the differences between those doing the stigmatizing and those being stigmatized (Goffman, 1990). Those with stigmatizing attitudes may perceive a greater distance and difference between themselves and those with the disease. This enhanced sense of difference may underlie their perceptions of being less vulnerable to the disease. This explanation does not require that the participants have explicit and specific ideas about which social groups are more likely to catch the disease or about which social groups are to blame for the spread of the disease. The explanation thus loosens the link between stigma and blame/stereotyping and may explain why stigma showed the expected relationships, but blame and stereotyping did not.

Stigma has frequently been highlighted as a major obstacle to dealing with HIV/AIDS, and calls have been made for it to be targeted more vigorously in intervention programmes (e.g., UNAIDS, 2007). The problems created by stigma have been well documented (e.g., Campbell et al., 2007; Ogden & Nyblade, 2005). It underlies the poor treatment often received by those with the disease, including abandonment; social exclusion and hostility; loss of livelihood and property; and inadequate health and social care. It leads to reluctance to get tested or to reveal one's HIV-status, which in turn helps the disease to spread and hinders access to treatment. Stigma may also contribute to the spread of the disease by reducing the motivation to practise safe sex. The present study suggests that, at least in some cultural contexts, stigma may lead to complacency about one's risk status that, in turn, reduces the motivation to practise safe sex. The results also indicated a direct unmediated effect of stigma on both actual and intended risky sexual behaviour. Although the present study did not investigate
the nature of these direct effects, it is possible that they are a reflection of the association that has been found between stigma and ignorance about the disease (e.g., Boer & Emons, 2004). Stigma may make people unwilling to find out or talk about the disease, or to access counselling services, and their consequent ignorance about how the disease is spread and what they can do to protect themselves may increase the risk of them engaging in unsafe sexual behaviour (Campbell et al., 2007; Ogden & Nyblade, 2005).

**Limitations**

Some limitations of the study should be noted. The cross-sectional and correlational nature of the study makes it difficult, of course, to draw any definite conclusions about the causal nature of the relationship between stigma, perceived vulnerability and sexual behaviour. It may be that the observed relationships are artefacts of the relationship between these variables and other unmeasured variables. Longitudinal and intervention studies would be more effective ways of investigating causality. A longitudinal study is required to test whether perceived vulnerability may have a mediating role in relation to actual sexual risk behaviour.

The questionnaire was designed specifically for the study, and there is no independent evidence of its reliability and validity. The restricted range of scores (and consequent restricted variance) on the ‘origins of HIV’ and on the ‘young people’ and ‘foreign influence’ blaming and stereotyping variables may have reduced the probability of obtaining significant findings on these variables, as may the low internal reliability of the ‘origins of HIV’ variable. There are also issues about how best to elicit social representations and the reliance on verbal report has been criticized (Joffe, 2003). Finally, reliance on self-report is problematic because of social desirability issues, particularly with respect to such a sensitive topic. Indeed, to Western eyes at least, the percentage of the sample who reported having had sex at least once (32%) seems very low. However, pre-marital sex is generally frowned upon in Ghanaian society, and the finding is consistent with a large survey of 1625 students in Ghanaian schools between the ages of 10 and 24 which found that only 25% reported that they had had sex (Fayorsey, 2002).

Caution should also be exercised in generalizing the findings. With its focus on younger people with less sexual experience in the mainstream of society, the sample was deliberately chosen to increase the chances of obtaining results in support of the hypothesis. Samples that include older or more marginalized social groups may yield different results. Likewise, the findings may not generalise to other social and cultural contexts. Indeed, even within the sample used in the present study, those from the Ewe ethnic group showed weaker relationships amongst the relevant variables. It was also suggested that some of the discrepancy between the findings of the present study and previous evidence about blame and stereotyping may be due to the fact that the latter was gathered in the earlier stages of the AIDS epidemic.

**Conclusions**

The present study investigated a range of related claims about the mediating role of perceived vulnerability. The results were consistent with the idea that stigmatizing attitudes may make people complacent about their own risk status, and that this, in turn, may lead to reduced intentions to protect themselves from the disease. However, further longitudinal research is needed to confirm the causal nature of these relationships, and to explore whether perceived vulnerability may mediate the relationship between stigma and actual sexual behaviour. Future work also needs to explore the relationship between stigma and unsafe sexual intentions/behaviour that was not mediated by perceived vulnerability; and to investigate the generality of the present study’s findings.

**References**


