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MEASURING HIV/AIDS STIGMA

Brendan Maughan-Brown

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Aids and Society Research Unit

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Measuring HIV/AIDS Stigma[1]

Abstract

This paper develops indices to measure HIV/AIDS stigma and explores potential determinants of this stigma. Indices are designed to measure the different dimensions of HIV/AIDS stigma. Findings show that levels of stigma vary depending on the measure of stigma used. Furthermore, despite stigma not being expressed consistently in each stigma index, the majority of respondents do exhibit HIV/AIDS stigma in some form. Judgemental attitudes and fear of infection are expressed with greater prevalence than intentions to discriminate against people living with HIV/AIDS (PLWHA). The respondents' understanding of HIV transmission is found to have the greatest impact on predicting levels of HIV/AIDS stigma, providing evidence for the importance of education campaigns. Racial differences are also salient in predicting both the magnitude of HIV/AIDS stigma and its determinants. This suggests that cultural and environmental aspects need to be considered when addressing HIV/AIDS stigma.

1. Introduction

The HIV pandemic has been accompanied the world over by another epidemic of fear, stigmatisation and discrimination (Mann, 1987). This epidemic has not been ameliorated with time as indicated by Peter Piot, the executive Director of UNAIDS, who placed a "renewed effort to combat stigma" as first on his list of "the five most pressing items" on its agenda for the world community in December of 2000 (cited in Parker & Aggleton, 2003: 14). The continuing pertinence of this concern was further stressed when HIV and AIDS-related stigma and discrimination was selected as the theme for the 2002-3 World AIDS Campaign.

Stigma poses not only a challenge based on a concern for human rights and the principles of social justice, but also for an effective response to the HIV/AIDS pandemic (Malcolm *et al*. 1998; Stein, 2003). Piot's prioritisation of stigma for immediate address occurred on the grounds that stigma remains the 'roadblock

[1] The author would like to thank Nicoli Nattrass for invaluable comments and suggestions on earlier drafts.

to concerted action' (cited in Parker & Aggleton, 2003: 14) as it undermines prevention efforts and is therefore counter-productive from a public health perspective. In contrast to race or disability, people living with HIV/AIDS (PLWHA) are not readily identifiable and HIV can therefore be hidden. This gives the disease the potential 'to go "underground" where it cannot be found (through voluntary testing and counselling), prevented (through safer sex) and controlled (through treatment and containment)'(Stein, 2003:12). HIV/AIDS stigma provides the motivation for PLWHA to hide the disease due to its potential for violating their human rights and denigrating their social worth. This occurs when people attach negative stereotypes to the disease - PLWHA are sexually deviant, for example - and as a result PLWHA are treated unfairly or badly by others.

An integral part of measuring stigma is defining what stigma is, and thus forming an understanding of what one is attempting to measure. Stigma has been defined as 'an attribute that is significantly discrediting' (Goffman 1963), and 'an attribute used to set the affected person or groups apart from the normalized social order, and this separation implies a devaluation' (Gilmore & Somerville 1994). Stigma is therefore 'a powerful and discrediting social label that radically changes the way individuals view themselves and are viewed as persons' (Canadian HIV/AIDS Legal Network, 2004). The social aspect of this label determines that discrediting characteristics associated with it will vary according to different cultures or environments (Aggleton & Chase, 2001). This idea is synonymous with Link & Phelan's, 2001, definition of stigma as a process, existing when a set of interrelated components converge. They apply the term 'stigma' when elements of labelling, stereotyping, separation, status loss, and discrimination co-occur. Thus, for HIV/AIDS stigma to exist, a person must be identifiable as having HIV/AIDS, negative stereotypes must be associated with the label and these stereotypes must lead to some form of social distancing, reduction in status and discrimination. Importantly, the formation of negative stereotypes occurs when the dominant cultural beliefs link labelled persons to undesirable characteristics (Link & Phelan, 2001). A recent study of HIV/AIDS stigma revealed that PLWHA in Burkina Faso, Ukraine, India and Zambia were associated with different characteristics, all of which had negative connotations. The disease was associated with religious deviance in Burkina Faso, with injecting drug use in the Ukraine, with extra-martial sexual relations in India and with prostitution and witchcraft in Zambia (Aggleton & Chase, 2001).

The discussion so far alludes to the importance of ascertaining a measurement of stigma within a particular socio-economic-political context by identifying indicators for eliciting local dimensions of stigma. It also alludes to the complexities involved in arriving at such a measurement, due to the different

dimensions involved. Many past studies have tried to address the question of stigma (see for example Bishop *et al.*, 1991; Fish & Rye, 1991; Herek & Capitanio 1993, 1994, 1997, 1999; Shisana & Simbayi, 2002; Parker *et al.*, 2002).

To date, South African research regarding HIV/AIDS stigma has been limited and has often been anecdotally based (Stein, 2003). Two recent quantitative studies, which have included measures of stigma have identified apparently low levels of HIV/AIDS stigma in the population (Shisana & Simbayi, 2002; Parker *et al.* 2002). While these findings in South Africa would be encouraging from a public health perspective, were they to be accurate, questions have been raised as to their validity (Stein, 2003). This might be premised on the basis that these studies seem to have defined stigma in a limited way. Consequently, questions used to measure stigma are incomprehensive in capturing different dimensions of stigma. Shisana & Simbayi, 2002, for example, drew their conclusion that stigma levels are relatively low from the following types of statements in the Nelson Mandela/HSRC Study of HIV/AIDS (2002):

- I will sleep in the same room as someone with HIV/AIDS.
- I will share a room with someone who is HIV positive.
- I will talk to someone with HIV/AIDS.
- I will treat a family member who has HIV/AIDS well.
- I will not get infected by being in the same room as an infected person.

The first four questions seem to probe the behavioural intentions of respondents in relation to their interaction with PLWHA and the last question probes knowledge of HIV transmission. Other dimensions, such as moralistic judgements of PLWHA, have not been probed. Stein hypothesises that the apparently low levels of stigma may well have more to do with how the stigma is measured rather than with the levels themselves (Stein, 2003). This seems to be substantiated by Herek and Capitanio (1999) who developed stigma scales that assess the extent of stigma in more complex ways than recent South African studies that use mainly behavioural intention questions (see, for example, Shisana & Simbayi, 2002; Parker *et al.* 2002), and have identified apparently higher levels of stigma in America by doing so.

The main critique of previous South African studies thus relates to the complex nature of HIV/AIDS stigma, which can manifest itself in a number of different forms. A respondent might say, for example, that he or she would sleep in the same room as a PLWHA, but still views that person as immoral. It is therefore possible that a large majority of respondents might express stigma in some form and to some degree, which might not be identified by an analysis of individual items. Individuals need only to stigmatise a PLWHA in one particular social

context for the fear of stigma to have a potentially severe impact on public health interventions, preventions and control of the pandemic. Furthermore, it may well be a loss of moral valuation that PLWHA fear more than actual acts of discrimination. The association of HIV/AIDS with moral judgements is not measured in the above survey.

To overcome this problem, this paper adapts Link & Phelan's definition of stigma as a social process existing when elements of labelling, stereotyping, separation, status loss, and discrimination co-occur. In this paper, stigma is understood as a social process which labels a PLWHA and either stereotyping, separation, status loss, or discrimination occurs. Such an approach results in the formation of multi-dimensional indicators of HIV/AIDS stigma. Each dimension comprises a number of components in an attempt to minimise the problems of measurement that has raised its head in other studies. Creating a set of indices capturing different dimensions of HIV/AIDS stigma is a potentially useful way of analysing this complex phenomenon. As part of this analysis, the relationships between these indices and other variables are explored to enhance an understanding of possible determinants of HIV/AIDS stigma.

2. Methodology

This paper uses data captured in the Cape Area Panel Study (CAPS) to form indicators of HIV/AIDS stigma. The first wave of this longitudinal survey collected demographic, behavioural and attitudinal information on 5211 young adults (aged between 14 and 22) in June, July and August of 2002. 1301 of the initial respondents were re-interviewed between June and November of 2003 in the second wave. This part of the study included a module of questions probing attitudes on HIV/AIDS (see appendix A for a full listing of these questions).

Questions from the module probing attitudes on HIV/AIDS were assigned to different indices in a two step process. Firstly, a theoretical approach was used to group questions into indices based on face validity, ie. what one would expect a question to be measuring. Secondly, the coherence of the indices so produced was assessed using factor analysis. This statistical technique identifies and clusters questions that respondents answered in a similar manner. Questions clustered together indicate that they are probably measuring the same underlying dimension of stigma. The factor analysis is therefore used to strengthen the reliability of the indices by confirming the correct allocation of questions to various indices, especially in cases where it was possible to justify a question in two different indices, and to identify items that were clearly not measuring what was initially thought.

2.1 Theoretical Approach

Previous research has measured HIV/AIDS stigma in terms of the different psychological functions that stigma serves and in terms of the behavioural intentions of the respondents in situations regarding PLWHA (Bishop *et al.*, 1991; Pryor *et al.*, 1989; Herek & Capitanio, 1998). The first index formed in this paper covers the behaviour intentions of the respondents in situations regarding PLWHA. The following three indices try and capture different kinds of stigmatising attitudes towards PLWHA. These are symbolic stigma (i.e. a negative assessment of character); instrumental stigma (i.e. fear of infection) and resource-based stigma (i.e. opinions that PLWHA should not gain preferential access to scarce social resources). Finally, all four indices are combined into a fifth index which is used as an indication of stigma in general.

The first index is formed to measure the intended behaviour of respondents in relation to interactions with PLWHA. Previous studies have used similar questions that have identified a tendency on the part of respondents to avoid individuals with HIV/AIDS (Herek & Capitanio, 1998). This index thus forms a measure of purely behavioural patterns, and incorporated no attitudinal dimensions. This enables us to analyse how different attitudes might be associated with different behavioural manifestations. It also allows a comparison between the effects that various demographic attributes have on attitudes and the effect they have on behaviour.

Symbolic stigma involves "a concern about what AIDS symbolizes" (Pryor *et al.*, 1998) and arises from a moralistic, value-based position and tends to be based on "judgemental attitudes towards those perceived to have put themselves at risk of infection through immoral and/or irresponsible behaviours" (Stein, 2003: 8). Its psychological function is to protect individuals from fear and anxiety surrounding the infectious, potentially terminal disease by distancing them from the fear of infection due to the quality of their own moral behaviour. Questions included in this index are therefore those identified to be revealing moralistic judgements, which have the potential to lead to denigration of character.

Instrumental stigma also arises from a psychological need to protect oneself, but is based on the real material risk posed by HIV/AIDS, an infectious disease which is potentially terminal in nature. Previous research has indicated that avoidance of disease victims, including persons with AIDS, primarily reflects concerns over contracting the disease (Bishop *et al.*, 1991). Questions included in this index are accordingly those revealing any actions, attitudes or beliefs that appear to be based primarily on a fear of infection.

The third type of stigma, i.e. resource-based stigma, arises from a utilitarian self-interest where people are against the allocation of limited resources to PLWHA. Previous research in this area indicates a growing resentment toward PLWHA in sub-Saharan Africa due to the resources expended on them (Moon *et al.*, 2002: cited in Stein, 2003). Questions included in this index are those showing the attitudes of respondents to policy questions concerning the allocation of resources. In view of the emphasis on policy questions this index is termed "policy stigma". This dimension of stigma could be particularly relevant in South Africa due to its resource constrained environment. It must, however, also be noted that it may be impossible to untangle this dimension of stigma from symbolic stigma. On the one hand, opinions that PLWHA should not receive government assistance might indicate resource based concerns, or, on the other hand, that PLWHA are judged not to be morally deserving of assistance.

Identifying these four main categories allows one to evaluate each question in the survey and assess its appropriateness within any index. Detailed examination of the questions revealed that some were of no practical use in measuring HIV/AIDS stigma. Such questions have been excluded from the analyses, see Appendix B for a critique of the questionnaire. Furthermore, some questions had the potential to be probing aspects unrelated to HIV/AIDS stigma and therefore new variables were created to control for this. New variables were created from questions J2-J8, those referring to respondents' opinions on government policies. These questions could be probing two separate aspects: attitudes to government policies in general, on the one hand, and discrimination against PLWHA, on the other. New variables were thus created to control for answers probing opinions about government policies, and in doing so obtain a more accurate indication of discrimination.

These variables were created on the basis of changes in opinion when respondents were asked, firstly, whether people in general should receive government assistance and then, secondly, whether PLWHA should receive the same assistance. Shifts in opinions between the two questions would reveal a favouring of one group above the other while consistent responses to the two questions were treated as opinions about government policies. Responding that the government should not assist anyone, for example, indicates an aversion to such government spending and cannot be interpreted as discrimination against anyone. Therefore variables were coded as one, to indicate no stigma present, when corresponding questions were answered in exactly the same way. The same score was given when respondents' answers indicated preferential treatment of PLWHA. A low stigma score, coded as two, was recorded when respondents were definitely in favour of giving assistance to the general population, but only probably in favour of the same assistance for PLWHA.

Moderate stigma scores, coded as three, were given to those who favoured assistance for everyone that needed it, but probably not for PLWHA. Finally, high stigma scores, coded as four, were given to those who strongly favoured support for those who needed it, but then strongly disfavoured the same support for PLWHA. The full process is shown as a Do File in Appendix C.

The respondents' answers to questions J2 and J3, J4 and J5, J6 and J7, and J7 and J8 were used to create the variables J2J3, J4J5, J6J7 and J7J8 respectively. J2J3, J4J5, J6J7 probe discrimination against PWLHA, while J7J8 probes moral dimensions of HIV. The new variables were therefore created as follows:

- J.2 Do you think the government should provide free health care for people who need it?
- J.3 Do you think the government should provide free health care for people with AIDS?
- J2J3 Discrimination of PLWHA with respect to the provision of free health care.

- J.4 Would it be a good idea for the government to give job training to unemployed young people?
- J.5 Should youth who are infected with HIV get this job training?
- J4J5 Discrimination of PLWHA with respect to the provision of job training.

- J.6 Should all people who are too sick to work get a welfare grant from the government?
- J.7 Should someone with AIDS who is too sick to work get a welfare grant from the government?
- J6J7 Discrimination of PLWHA with respect to the provision of a welfare grant.

- J.7 Should someone with AIDS who is too sick to work get a welfare grant from the government?
- J.8 Should a woman who got AIDS from sleeping around with many men get this welfare grant from the government?
- J7J8 Discrimination of a promiscuous female with AIDS with respect to the provision of a welfare grant.

Survey questions and the new variables created were allocated to different indices, according to face validity, as set out below. Question J.1 is not included in an index as answers were not recorded on a 4-point Likert Scale. It will, however, be used in conjunction with the indices to assess levels of stigma.

Behaviour Index

The following items were assessed on face value to be measuring behavioural intentions:

- J.9 Would you be willing to look after a close family member with AIDS?
- J.10 Imagine that you find out that one of your friends is HIV infected. Would you still be friends with them?
- J.12 If you knew that a shopkeeper had HIV/AIDS, would you buy fresh vegetables from him or her?
- J.15 Imagine you meet someone you really like and he/she tells you that he/she is HIV positive, would you still go out on a "date" with him/her?

Symbolic Stigma Index

The following items were included as a measurement of the respondents' value judgements regarding HIV/AIDS:

- J7J8 Discrimination of a promiscuous female with AIDS with respect to the provision of a welfare grant.
- J.21 Do you think HIV/AIDS is a punishment for sleeping around?
- J.24 Do you think that many people who get infected through sex have only themselves to blame?
- J.25 Do you think that some people with HIV/AIDS want to infect other people with the virus?

Item J25 could potentially be measuring a fear of infection rather than the propensity to attach a negative symbolic connotation to PLWHA. It remains within this index due to the evaluation that it is more likely to be measuring symbolic issues. Statistical methods will later be applied to assess whether this question was answered in a similar manner to the others in the index and is thereby indicative of symbolic stigma.

Instrumental Stigma Index

Items indicating any actions, attitudes or beliefs that appear to be based primarily on a fear of infection were incorporated in the measurement of instrumental stigma:

- J.11 Would you drink from the same bottle of water as an HIV infected friend?

- J.17 Would you prefer to know who has HIV/AIDS in your community so that you can be careful not to get infected by them?
- J.19 Would you rather not touch someone with HIV/AIDS because you are scared of infection?
- J.22 Do you think that a school pupil with HIV puts other pupils in their class at risk of infection?

Question J11 is included in this index as it is believed that fear of catching HIV from the water bottle would drive the responses. It is, however, possible that this question is measuring mainly behavioural intentions and would be more appropriately placed in the behaviour index. Question J22 has the potential not to be probing instrumental stigma in that a school pupil with HIV does put others at risk of infection, albeit a very low risk. The relevance of both these items in this index will be checked with the factor analysis.

Policy Stigma Index

Items included in this index are those that could be seen to satisfy a utilitarian self-interest via respondents' views that limited resources should not be directed towards PLWHA.

- J2J3 Discrimination of PLWHA with respect to the provision of free health care.
- J4J5 Discrimination of PLWHA with respect to the provision of job training.
- J6J7 Discrimination of PLWHA with respect to the provision of a welfare grant.

It is noted that these variables also have the potential to be picking up attitudes about who is "deserving" of assistance. This might mean that these variables are probing the moral aspects of stigma and might be found to be better placed with other items in the symbolic stigma index.

Item J23 (Do you think a school pupil with HIV should be allowed to attend school?) is the only question that has not yet been included in any index as yet because it was not obvious from a purely analytical approach where it would best be located. The factor analysis will be used to assess whether it is appropriate for any index.

2.2 Factor Analysis

Factor analysis was used to check the coherence of the indices formed in the above theoretical approach and to aid in the placement of items that had the potential to be probing different aspects of stigma than may have been initially thought. The analysis was also used to validate the decision to drop the questions listed in Appendix B. Based on how the questions were actually answered, the factor analysis groups those that were answered in a similar manner. Variables that correlate highly with one another are grouped and provide a pointer to the possibility that those variables could be measuring aspects of the same underlying dimension (Field, 2000). Using all the questions in Appendix A, except J1, and substituting the new variables created for questions J2-J8, the factor analysis identified three different factors. Table 1 displays both the allocation of questions into indices using the theoretical approach and how the factor analysis grouped the questions.

Factor 1 (Behaviour Index?)

The following items were extracted as measuring the same underlying dimension with an alpha reliability of .76 and 43% of the variance explained:

- J.9 Would you be willing to look after a close family member with AIDS?
- J.11 Would you drink from the same bottle of water as an HIV infected friend?
- J.10 Imagine that you find out that one of your friends is HIV infected. Would you still be friends with them?
- J.12 If you knew that a shopkeeper had HIV/AIDS, would you buy fresh vegetables from him or her?
- J.15 Imagine you meet someone you really like and he/she tells you that he/she is HIV positive, would you still go out on a "date" with him/her?
- J.23 Do you think a school pupil with HIV should be allowed to attend school?

This factor includes all the questions assigned to the behaviour index in the theoretical approach and is therefore taken to be measuring the intended behaviour of respondents towards PLWHA. In addition, two questions that were previously not assigned to this index grouped together with the behavioural questions. Question J.11 was previously included in the Instrumental Index due to the focus on the friend being 'HIV infected' and the assumed association with being infectious. It was thought that respondents might associate the act of sharing a water bottle with a risk of contagion. The strong correlations between responses to this question and others in the behaviour index indicate that

respondents might have perceived the situation to be one of simply sharing something with a PLWHA, not linked to contagion per se, and therefore could validate its inclusion in this (rather than the instrumental) index. Question J23 also correlated strongly with other responses in this index. The theoretical approach had previously been unable to allocate this question to any index. Factor analysis suggests it probably is tapping into the same underlying concerns as the pure behaviour questions. Both J11 and J23 are included in the final formation of this index as they increase the alpha reliability of this factor.

Table 1. The allocation of questions into indices and factors

		BI	SI	II	PI	F1	F2	F3
J2J3	Discrimination of PWHA with respect to the provision of free health care.				√			
J4J5	Discrimination of PWHA with respect to the provision of job training.				√			
J6J7	Discrimination of PWHA with respect to the provision of a welfare grant.				√			
J7J8	Discrimination of a promiscuous female with AIDS with respect to the provision of a welfare grant.		√					
J.9	Would you be willing to look after a close family member with AIDS?	√				√		
J.10	Imagine that you find out that one of your friends is HIV infected. Would you still be friends with them?	√				√		
J.11	Would you drink from the same bottle of water as an HIV infected friend?			√		√		
J.12	If you knew that a shopkeeper had HIV/AIDS, would you buy fresh vegetables from him or her?	√				√		
J.15	Imagine you meet someone you really like and he/she tells you that he/she is HIV positive, would you still go out on a "date" with him/her?	√				√		
J.17	Would you prefer to know who has HIV/AIDS in your community so that you can be careful not to get infected by them?			√			√	
J.19	Would you rather not touch someone with HIV/AIDS because you are scared of infection?			√			√	
J.21	Do you think HIV/AIDS is a punishment for sleeping around?		√					√
J.22	Do you think that a school pupil with HIV puts other pupils in their class at risk of infection?			√			√	
J.23	Do you think a school pupil with HIV should be allowed to attend school?					√		
J.24	Do you think that many people who get HIV infected through sex have only themselves to blame?		√					√
J.25	Do you think that some people with HIV/AIDS want to infect other people with the virus?		√					√

Notes:
BI: Behavioural Index
SI: Symbolic Index
II: Instrumental Index
PI: Policy Index
F1: Factor 1
F2: Factor 2
F3: Factor 3

Factor 2 (Symbolic Stigma?)

The factor analysis extracted the following questions with an alpha reliability of .59 and 55% of the variance explained:

- J.21 Do you think HIV/AIDS is a punishment for sleeping around?
- J.24 Do you think that many people who get infected through sex have only themselves to blame?
- J.25 Do you think that some people with HIV/AIDS want to infect other people with the virus?

The questions in factor 2 are all those that were previously grouped in the symbolic stigma index using the theoretical approach. J7J8, which had previously been included on the grounds of face validity, was not found to correlate significantly with the other questions. This validates the theoretical method of constructing the Symbolic Index, as these items are statistically found to be measuring one aspect. It also validates the inclusion of J25 as measuring a symbolic aspect rather than an instrumental one, a distinction we were not theoretically certain of. The exclusion of J7J8 from the index was, however, contrary to what we had initially expected. It was thought that respondents who would support a welfare grant for someone with AIDS, but not to a woman who got AIDS from sleeping with many men, would clearly be indicating stigma due to a moral devaluation. This may indeed be true, but the stigma being probed might not have been predominantly HIV/AIDS stigma. The stigma might in fact be associated more with promiscuity than with HIV/AIDS. Alternatively, it could be picking up gender biases- woman are 'supposed' to be 'good', even if men are not. Variable J7J8 did not factor with any other items in the questionnaire and is therefore excluded from the analysis.

Factor 3 (Instrumental Stigma?)

The third factor extracted combined the following variables with an alpha reliability of .55 and 52% of the variance explained:

- J.17 Would you prefer to know who has HIV/AIDS in your community so that you can be careful not to get infected by them?
- J.19 Would you rather not touch someone with HIV/AIDS because you are scared of infection?
- J.22 Do you think that a school pupil with HIV puts other pupils in their class at risk of infection?

It would appear that these questions have a consistency in a concern for infection and this factor is therefore seen to represent instrumental stigma, as

indicated in the theoretical approach. Question J.11, in fact, is the only question appearing in the previously created instrumental stigma index that is not included in this factor. This question was found to correlate more strongly with the intended behaviour questions. As previously indicated, this can be intuitively substantiated and this question is excluded from the instrumental stigma index in favour of the behaviour index. The remaining three questions form the instrumental stigma index.

The three factors extracted indicate the questions that are included in the first three indices. The factor analysis also substantiates the exclusion of the questions dropped from consideration in Appendix B. These questions were found not to correlate significantly with any of the questions in any of the indices. In addition to these questions, the variables forming the policy stigma index in the theoretical approach were found to be unrelated to each other and to other questions. Despite this finding, these three variables remain combined as a policy stigma index. This is done as the three variables theoretically group together to measure the same dimension. The factor analysis simply reveals that not all respondents answered each question consistently. The index will provide an indication of those respondents expressing some level of policy stigma.

3. Data Analysis

Responses to each question are shown as percentages in Appendix A. The questions in each index were recoded so that a score of 1 indicated no stigma and a score of 4 indicated maximum stigma. The questions were summed to form stigma scores for each index. The behaviour index comprises 6 questions and therefore scores ranged from 6 (no stigma shown on any question) to 24 (maximum stigma shown on all questions). The symbolic stigma, instrumental stigma and policy stigma indices all comprised 3 questions and thus had scores ranging from 3 (no stigma shown on any questions) to 12 (maximum stigma shown on all questions). A fifth index, general stigma, was formed by combining all four indices. This index therefore comprised 15 questions and had a range from 15 to 60.

Table 2 shows the degree of stigma within each index. Four levels of stigma are shown in the table. 'No Stigma' represents respondents who scored the lowest possible score in each index. Low, moderate and high levels of stigma record respondents scoring within the lower third, second third and upper third of the index respectively. The indices show that the majority of respondents have a relatively high tolerance towards PLWHA (behaviour index) and generally favour PLWHA equally to others in government policy decisions (policy stigma

index). A much higher percentage of respondents shows moderate-high instrumental stigma, 37%, and a significantly large percent, 40%, shows moderate-high levels of symbolic stigma. Furthermore, if one adopts the view that any level of stigma, not just moderate-high levels, is potentially damaging then the analysis indicates a greater need for concern. Summation of respondents indicating low, moderate or high levels shows that the majority of respondents will behave unfavourably towards PLWHA to some degree (64%), possess some negative moral judgements towards PLWHA (73%), and show some fear of infection (81%). When respondents are examined using all items that measure stigma, general stigma index, it is found that 96% of respondents show some levels of stigma!

Table 2. Measures of stigma shown in different indices

	Respondents (%)			
	No Stigma	*Low Levels*	*Moderate Levels*	*High Levels*
Behaviour Index	36	53	9	2
Symbolic Stigma	27	33	29	11
Instrumental Stigma	19	44	30	7
Policy Stigma	75	24	1	0
General Stigma	4	76	19	1

Policy stigma is the only index in which the majority of respondents expressed no discriminatory views towards PLWHA. The responses to item J1, see Appendix A, correlate with this finding with the vast majority of respondents (68%) allocating the remaining bed to the HIV positive person, 8% favouring the HIV negative person, 22% saying it depends/either and the remaining 2% not knowing. Whether this can be interpreted as a general level of sympathy towards PLWHA or as another aspect, such as self-reporting biases, is debatable. The lower levels of stigma in the policy stigma index and the behaviour index when compared to the symbolic stigma index and instrumental stigma index suggest that judgements and fear of infection might not necessarily culminate in direct discriminatory action.

The development of these five indices, and the wide range of scores existing within each, suggests that it would be instructive to examine what might influence respondents' levels of stigma.

4. Determinants of Stigma

Ordinary Least Square (OLS) regression will form the basis of the analysis of what factors impact on an individual's tendency to stigmatise. The regression equations will take the following form:

$$Y = c + \beta_1 X_1 + \beta_2 X_2 + \ldots \beta_i X_i + \varepsilon$$

The dependent variable (Y) will be drawn from the list developed in section 2, summarised in Table 2, and the explanatory variables (X_i) will be drawn from a list of variables as discussed in section 4.1.

4.1 Discussion of Variables

Previous research done in South Africa has shown that attitudes towards PLWHA are influenced by the respondents' demographic characteristics (Shisana & Simbayi, 2002). This research indicated that the respondents' age, race and level of education had a significant effect on their attitudes, while the effects of gender differences were negligible. Respondents aged 49 or over displayed the greatest stigma; Coloureds were the most stigmatising race group, followed by Africans, with Whites showing the least stigma; and higher levels of education were equated with lower levels of stigma. This study, The Nelson Mandela/HSRC Study of AIDS, interviewed people of all ages and hence renders direct comparisons with our sample of young adults inappropriate. Nevertheless, it does provide a good point of departure.

Our research sample comprised 53% females and 47% males, with respondents' ages ranging from 15 to 23 years. In terms of racial breakdown, only Africans, Coloureds and Whites are compared, as there are too few respondents from other race groups. The level of education of each respondent was based on the highest level of education that the respondent had successfully completed. In coding the education variable, a year of education was assigned for each year of school completed. If respondents had never attended school they were assigned 0 and if they had finished matric they were assigned 12, for 12 years of education completed. The CAPS questionnaire offers numerous post-school study options, ranging from certificates to degrees. Of the respondents, 65 indicated they had completed some form of post-school education and were grouped into one category of tertiary education which was coded as 13. The respondents' religious group was also included in the regression analysis due to the potential for different religious beliefs to influence moral aspects of stigmatisation in different ways. Respondents were broadly defined as being Christian, Muslim or 'non religious'.

Table 3, which provides mean general stigma scores across different variables, suggests that general stigma is influenced by age, gender, race, religion and education levels. Respondents between the age of 15 and 18 showed higher levels of general stigma than those between the age of 19 and 23. Males displayed higher levels of general stigma than females. Africans were the least stigmatising and Coloureds the most. In comparison to respondents indicating they have no religion, Christians were more stigmatising and Muslims the most stigmatising. Finally, respondents who had completed less than 7 years of education were more stigmatising than those who had completed more than 7 years. There was very little difference in general stigma levels between respondents who had completed between 7 and 12 years of education and those who had completed some tertiary education. These results indicate the relevance of using these variables in the regression analysis to establish a better understanding of the determinants of stigma.

Table 3. Summary statistics of general stigma for different variables

		n	*mean*	*median*
All Respondents		1071	24.38	23
Age Categories	15-18	511	25.00	24
	19-23	524	23.83	22
Gender	Male	483	25.39	24
	Female	550	23.54	22
Race	Black	567	21.60	20
	Coloured	384	28.28	27
	White	80	25.86	25
Religion	Christian	660	24.33	23
	Muslim	91	27.51	27
	None	123	23.10	21
Education	<Grade 7	111	25.73	24
	Grade 7-12	895	24.22	23
	>Grade 12	65	24.25	22

The average income of the household in which the young adult lives was included in the regression analysis as it was seen to be a potential proxy for the quality of education the young adult would receive. Richard Walker (2003) suggests that using the log of income measures, as opposed to the income itself, will produce better results and estimates of relationships that may exist, as the variation in incomes will be reduced and extreme values will have less of an impact. It was found, however, that the log of income values resulted in the exclusion of a number of respondents who had a zero value indicated for income

and that the log of incomes did not add to the explanatory power of the analyses. The scale of the income variable ranged from R0-R15000, which is substantially larger than any of the other independent variables, and resulted in small coefficients. The scale has not been adjusted due to the finding that although income plays a role in controlling for certain aspects and improving the overall explanatory power of the analyses, it is generally insignificant.

Previous research has highlighted a direct relationship between an individual's knowledge of HIV/AIDS and his/her attitudes towards PLWHA (Le Poire, 1994; Herek & Capitanio, 1994; Parker *et al.*, 1992; Triplet & Sugarman, 1987). All three studies, completed in the U.S, found that individual attitudes towards PLWHA became more positive as knowledge about HIV/AIDS improved. It was therefore hoped that negative reactions to AIDS victims would decrease as causal ambiguity decreases (Triplet & Sugarman, 1987). Our study formed an index of HIV knowledge, based on the respondents' opinion of whether HIV could be transmitted by (1) using a public toilet, (2) sharing a bath, (3) sharing a bottle of water and (4) shaking hands. Only items assessing beliefs of transmission via casual contact were included. Uncertain and incorrect answers to these questions could reveal a lack of knowledge in a way that answers to more intimate contact questions could not. An ambivalent answer to the question of whether HIV can be transmitted during sexual intercourse with a condom, for example, does not necessarily reveal a lack of knowledge as transmission could occur if the condom were used incorrectly or broke. In assigning scores to responses, it was taken that answers of 'maybe' or 'don't know' to any of the items would therefore indicate an incorrect understanding. Respondents received a score of one for answers indicating that it was not possible to contact AIDS in the scenarios given and zero if they answered otherwise. The scores for individual items were summed to obtain an index from 0-4 with 4 indicating a correct understanding on all items.

Another variable that was formed as a predictor of attitudes and behaviour towards PLWHA measured the respondents' proximity to HIV/AIDS. Goffman, 1963, indicated that the more contact a person has with a disability, the more 'normalised' the disability becomes to the person. This process of normalisation was linked to the reduction of stigma associated with the disability. This idea was corroborated in the Nelson Mandela/HSRC Study of HIV/AIDS which found that a greater acceptance of PLWHA resulted from more personal involvement with HIV/AIDS (by having an HIV test, by knowing one's partner's status, or by knowing someone who is HIV positive) (Shisana & Simbayi, 2002). Our research measured the respondents' proximity to HIV/AIDS based on whether they (1) had ever had an HIV test, (2) had heard of any HIV positive people in the area and (3) had met any HIV positive people themselves. Respondents were assigned a score of one if they answered

positively to an item and zero otherwise. Scores were summed to form an index from zero to three with three indicating the closest proximity to HIV/AIDS.

In their research on racism in America, Sniderman & Piazza (1993) found that a person's negative characterisations of blacks remain embedded in a broader tendency to derogate an array of outgroups in general. They point to the concept of ethnocentrism as a possible factor leading to reactions against blacks, which is seen as blind and irrational because it has nothing intrinsically to do with blacks and may just as well manifest itself against any of many other outgroups. In order to examine whether similar relationships exist between HIV/AIDS stigma and general tendencies to derogate outgroups, two variables were formed. The first variable, "racialprej", measures the degree to which respondents like/dislike people of other race groups. Respondents' attitudes to other races were assessed using an eleven-point Likert scale ranging from 0 = dislike very much to 10 = like very much, with 5 showing neither like nor dislike. Attitudes of Africans, Whites and Coloureds towards the other two groups were included in the index resulting in a score ranging from 0-20. The scale was reversed, for ease of interpretation, so that a higher score would indicated a greater dislike for other races.

The second variable, "bigotry", was developed to assess more general forms of prejudice based on the respondents' opinions about (1) homosexuals, (2) illegal immigrants and (3) Jews. It was noted that a lack of information regarding the respondents' sexual preferences meant that this variable might not correctly represent views towards outgroups, as some of the respondents may have been homosexuals themselves. It was believed, however, that the effect of this error would be small and minimised by the other two items, as none of the respondents were Jewish and none were illegal immigrants. The three items were assessed using similar 11-point Likert scales used to evaluate racial prejudice and scores were summed to form an index of general bigotry. Scores ranged from 0 = no dislike shown towards any outgroup to 30 = very high levels of dislike shown towards all outgroups.

The final two explanatory variables, symbolic stigma and instrumental stigma, have been described in section 2. These variables will be included in the models used as predictors of behaviour towards PLWHA. Previous research has found that both symbolic stigma and instrumental stigma add to the predictive power of models of AIDS tolerance (Le Poire, 1994; Herek & Capitanio, 1998). It was thought that it would be instructive to assess racial differences in the role that each of these variables plays in predicting behaviour towards PLWHA.

4.2 Regression Results

Initial analyses, using general stigma as the dependent variable, indicated that racial differences exist in determinates of stigma. This is shown by regression 1 in table 4 with the standardised beta coefficient being largest for Coloureds, indicated by the highlighted cell, and by the significance and size of the coefficient for Whites. The regression indicates significant differences between Africans and other races. Differences between Whites and Coloureds were found not to be significant ($p > 0.222$). Furthermore, when race variables are dropped from the analysis the predictive power of the analysis decreases substantially (see regression 2). Regression 2 shows that when race is not controlled for, income measures and Muslim respondents become significant predictors of general stigma, gender effects increase in significance, while both the effects of education and bigotry decrease in significance. Regressions 1 and 2 suggest that it would be instructive to assess the effects of the explanatory variables within each race group. In doing so, comparisons between race groups would be possible. The five regression tables (see tables 4 to 8) generated, one for each dependent variable, therefore include analyses of all respondents and separate analyses of Africans, Coloureds and Whites.

Throughout the analysis, it was found that the respondents' proximity/personal involvement with HIV/AIDS has no relevance in explaining any form of stigma. The hypothesis that the greater exposure the respondents had to HIV/AIDS the less general HIV/AIDS stigma they would display could not be supported. Table 4, predictions of general stigma, indicates two other aspects that are encountered throughout the analysis. Firstly, there are no Whites who are Muslim and only three Africans who are Muslim, thus this variable is dropped in analyses of Whites and is non-significant for Africans. Secondly, household income is often excluded in the analyses of Whites as it reduces the number of observations significantly, without adding significantly to the explanatory power of the regressions.

Analyses of general stigma reveal that the HIV/AIDS knowledge of the respondents is the most important factor in predicting general stigma for all race groups. It shows that the less knowledge a respondent has regarding the transmission of HIV the greater the tendency to stigmatise. This effect is greatest for Africans, and least pronounced for Coloureds. This has important implications for HIV/AIDS campaigns as it provides evidence that educational campaigns could have an impact in reducing levels of stigma in the population. Regression 3, table 4, also indicates that higher levels of education in general are associated with reduced levels of general stigma in the African population. This is not found to be the case in the Coloured and White populations. Furthermore, in the African population, the highest level of education achieved

and the respondents' knowledge of HIV transmission are the only variables that are significant in predicting general stigma. This suggests that general stigma for Africans might be guided more by ignorance than other more complex aspects such as racial prejudice, bigotry or religious beliefs.

Table 4. Determinants of General Stigma

	Dependent Variable: General Stigma (15-52)				
	All Respondents		*Africans*	*Coloureds*	*Whites*
	1	2	3	4	5
Intercept	33.575*** [1.837]	39.986*** [1.944]	37.131*** [2.414]	36.748*** [2.414]	37.663*** [5.562]
Age	0.047 [0.092]	-0.134 [0.099]	0.145 [0.113]	-0.024 [0.162]	0.181 [0.567]
Gender	0.805** [0.371]	1.577*** [0.400]	0.062 [0.472]	2.069*** [0.661]	0.731 [1.257]
White	5.010*** [1.056]				
Coloured	6.239*** [0.462]				
Christian	-0.671 [0.563]	0.896 [0.605]	-0.551 [0.598]	-1.19 [1.803]	-2.151 [1.826]
Muslim	-1.055 [0.884]	3.801*** [0.886]	-3.172 [3.527]	-1.684 [1.883]	
EduHigh	-0.400*** [0.109]	-0.235** [0.112]	-0.478*** [0.132]	-0.33 [0.206]	-0.537 [0.710]
HH Income	0.000 [0.000]	0.001*** [0.0001]	0.000 [0.0006]	-0.0001 [0.0004]	
HIV IQ	-2.976*** [0.252]	-3.874*** [0.268]	-3.772*** [0.422]	-2.389*** [0.355]	-3.126*** [0.803]
RacialPrej	0.1249*** [0.045]	0.166*** [0.048]	0.06 [0.495]	0.331*** [0.094]	0.042 [0.177]
Bigotry	0.065** [0.029]	-0.019 [0.032]	0.02 [0.035]	0.078 [0.059]	0.272** [0.121]
n	845	849	487	296	74
Adj. R-squared	0.4065	0.2778	0.1781	0.3004	0.2526
Prob>F	0	0	0	0	0.0004

Notes: Highlighted cells indicate the variable in each regression with the largest standardised beta coefficient.
Numbers in [ ] are the Standard Error.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.
Base for Gender = Females
Base for racial groups = Africans
Base for religions = 'nofaith'

Regression four (table 4) indicates that, in the Coloured population, 'simple' ignorance is less of a determinant of general stigma, as gender differences and prejudices against other races are also influential. It is found that Coloured

males are significantly more stigmatising than Coloured females and that the greater the levels of racial dislike the greater is the tendency to stigmatise. In the White population, general stigma is shown, regression 5, to be potentially driven by a lack of HIV transmission knowledge as well as increases in levels of dislike towards homosexuals, illegal immigrants and Jews, represented by the variable bigotry.

Table 5 examines determinates of respondents' behaviour towards PLWHA. Two additional explanatory variables are included in this analysis, symbolic and instrumental, which assess the degree to which behaviour can be predicted based on moral judgements and fear of infection respectively. Analyses show that the inclusion of these variables improves the predictive power of the models substantially. This is seen by larger adjusted R-squared values in regressions 2, 4, 6 and 8. Regressions 1 and 2 reveal that, for the population in general, the most important predictor of behaviour towards PLWHA is also the respondents' level of HIV transmission knowledge. They also indicate that racial prejudices play an important role in predicting behaviour. Regression 2 shows the effects of including the variable symbolic and the variable instrumental. Doing so indicates that racialprej is the second most powerful explanatory variable, after HIV IQ, and decreases the importance of the race variables. It is also found that the variable instrumental is a more important predictor than the variable symbolic for all respondents as one group. Dividing this group into its racial components reveals that differences in determinants of behaviour vary between the races.

Regression 3 indicates that behaviour in Africans is influenced by levels of education, HIV knowledge and racial prejudice, with HIV knowledge having the strongest influence. Regression 4 shows that in addition to these three variables, both symbolic and instrumental aspects are influential, with symbolic becoming the most powerful explanatory variable in this model. Behaviour in the Coloured group is predicted by levels of HIV knowledge and racial prejudices in regression 5, with HIV knowledge having the largest impact. This variable remains the most influential in regression 6, which shows the variable instrumental to be significant and symbolic to be insignificant. In contrast to Africans, the level of education was not a significant predictor in either the Coloured or the White population. As shown in regression 7, Whites also differed from the other races in that racialprej was non-significant while bigotry was. This regression highlights HIV knowledge as the most influential variable again. Including symbolic and instrumental variables into the model for Whites, regression 8, shows that the variable instrumental is the most influential, HIV knowledge remains significant, but bigotry is no longer significant.

Table 5. Determinants of behaviour

	Dependent Variable: Behaviour (6-24)							
	All Respondents		*Africans*		*Coloureds*		*Whites*	
	1	2	3	4	5	6	7	8
Intercept	13.267*** [0.918]	8.380*** [1.002]	14.261*** [1.200]	9.265*** [1.271]	13.929*** [1.769]	8.148** [2.041]	13.595*** [2.462]	7.617*** [3.658]
Age	0.037 [0.047]	0.0566894 [0.045]	0.034 [0.057]	0.058 [0.052]	0.044 [0.087]	0.055 [0.086]	0.181 [0.262]	-0.208 [0.284]
Gender	0.060 [0.187]	-0.028322 [0.179]	-0.098 [0.239]	-0.77 [0.216]	0.321 [0.352]	0.159 [0.357]	0.054 [0.576]	-0.015 [0.664]
White	1.490*** [0.508]	1.161** [0.517]						
Coloured	1.687*** [0.235]	0.641* [0.249]						
Christian	-0.091 [0.282]	-0.070 [0.272]	-0.063 [0.301]	-0.058 [0.274]	-0.341 [0.920]	-0.345 [0.960]	-0.359 [0.819]	0.414 [1.083]
Muslim	-0.261 [0.447]	-0.269 [0.428]	-0.873 [1.848]	-0.409 [1.621]	-0.506 [0.964]	-0.471 [1.003]		
EduHigh	-0.190*** [0.056]	-0.118** [0.053]	-0.200*** [0.067]	-0.147** [0.061]	-0.174 [0.111]	-0.078 [0.111]	-0.288 [0.329]	0.382 [0.372]
HH Income	0.000 [0.000]	0.000 [0.000]	0.000 [0.000]	0.000 [0.0002]	0 [0.0002]	0.0002 [0.0002]		0 [0.000]
HIV IQ	-1.544*** [0.124]	-1.296*** [0.127]	-1.634*** [0.201]	-1.436*** [0.202]	-1.483*** [0.191]	-1.179*** [0.196]	-1.571*** [0.331]	-1.446*** [0.438]
RacialPrej	0.115*** [0.022]	0.158*** [0.021]	0.100*** [0.024]	0.141*** [0.029]	0.189*** [0.050]	0.166*** [0.050]	-0.018 [0.086]	-0.121 [0.102]

Table 5 - continued

	Dependent Variable: Behaviour (6-24)							
	All Respondents		*Africans*		*Coloureds*		*Whites*	
	1	2	3	4	5	6	7	8
Bigotry	0.025* [0.015]	0.008 [0.015]	0.011 [0.017]	0.008 [0.016]	0.027 [0.032]	0.012 [0.032]	0.113** [0.057]	0.093 [0.066]
Symbolic		0.238*** [0.039]		0.312*** [0.045]		0.094 [0.078]		0.182 [0.169]
Instrumental		0.324*** [0.042]		0.203*** [0.051]		0.474*** [0.085]		0.779*** [0.165]
n	917	853	524	493	317	298	90	62
Adj. R-squared	0.2945	0.4053	0.1844	0.3296	0.2677	0.3489	0.2263	0.4553
Prob>F	0	0	0	0	0	0	0.0002	0

Notes: Highlighted cells indicate the variable in each regression with the largest standardised beta coefficient.
Numbers in [ ] are the Standard Error.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.
Base for Gender = Females
Base for racial groups = Africans
Base for religions = 'nofaith'

Table 6 examines the influences on symbolic stigma. The most notable aspect from this analysis is the importance of the race variable. This is indicated firstly by the adjusted R-squared which drops from 28% in the model for all respondents to 6.5% for Coloureds, 3% for Africans and less than 1% for Whites. Secondly, regression 1 shows that the variables for Coloureds and Whites are the two most important variables in that model. HIV knowledge is the next most important explanatory variable, followed by levels of education, gender and racial prejudice. In the African group, HIV knowledge is the most predictive variable and in the Coloured group, gender has the greatest explanatory power. The model for the White group is statistically insignificant.

Table 6. Determinants of symbolic stigma

	Dependent Variable: Symbolic (1-12)			
	All Respondents	*Africans*	*Coloureds*	*Whites*
	1	2	3	4
Intercept	6.636*** [0.777]	7.641*** [1.096]	8.424*** [1.335]	8.154*** [1.764]
Age	0.034 [0.389]	0.064 [0.052]	-0.017 [0.064]	0.251 [0.179]
Gender	0.331** [0.155]	0.001 [0.215]	0.823*** [0.259]	0.474 [0.391]
White	1.824*** [0.422]			
Coloured	2.73*** [0.194]			
Christian	-0.024 [0.238]	0.007 [0.277]	-0.373 [0.669]	-0.224 [0.516]
Muslim	-0.190 [0.371]	-0.704 [1.669]	-0.582 [0.703]	
EduHigh	-0.093** [0.046]	-0.133** [0.061]	0.029 [0.082]	-0.417* [0.231]
HH Income	0.000 [0.000]	0.000 [0.0002]	0 [0.000]	
HIV IQ	-0.433*** [0.105]	-0.651*** [0.185]	-0.305** [0.139]	-0.376 [0.237]
RacialPrej	0.032* [0.018]	0.054** [0.023]	-0.002 [0.036]	-0.37 [0.059]
Bigotry	-0.008 [0.012]	-0.033** [0.016]	0.041** [0.023]	0.007 [0.040]
n	913	519	316	96
Adj R-squared	0.2775	0.0323	0.065	0.0085
Prob>F	0	0.0022	0.0005	0.36

Notes: Highlighted cells indicate the variable in each regression with the largest standardised beta coefficient.
Numbers in [ ] are the Standard Error.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.
Base for Gender = Females
Base for racial groups = Africans
Base for religions = 'nofaith'

Table 7 indicates the determinants of instrumental stigma. Regression 1 shows that being Coloured has the greatest influence on instrumental stigma, and that HIV knowledge is also highly influential. Racial prejudices, bigotry and gender are also significant. Interestingly, levels of instrumental stigma are found to decrease as racial prejudice increases. Regression 2 shows that Africans account for this with racialprej being the most important determinant, within that group, with a similar negative relationship. For Africans, HIV knowledge and Bigotry are also found to have a significant effect.

Table 7. Determinants of instrumental stigma

	Dependent Variable: Instrumental (1-12)			
	All Respondents	*Africans*	*Coloureds*	*Whites*
	1	2	3	4
Intercept	9.449*** [0.700]	10.646*** [0.947]	9.145*** [1.183]	9.915*** [2.241]
Age	-0.013 [0.036]	-0.023 [0.046]	0.035 [0.058]	0.235 [0.232]
Gender	0.285** [0.142]	0.203 [0.187]	0.411* [0.232]	0.333 [0.525]
White	1.000** [0.391]			
Coloured	1.26*** [0.177]			
Christian	-0.207 [0.215]	-0.219 [0.238]	0.226 [0.615]	-2.067** [0.832]
Muslim	-0.350 [0.338]	-1.329 [1.467]	0.008 [0.647]	
EduHigh	-0.11** [0.042]	-0.071 [0.054]	-0.188** [0.074]	-0.508* [0.291]
HH Income	0.000 [0.000]	0.000 [0.000]	0 [0.000]	0 [0.000]
HIV IQ	-0.744*** [0.094]	-0.949*** [0.158]	-0.611*** [0.129]	-.579* [0.289]
RacialPrej	-0.071*** [0.017]	-0.132*** [0.019]	0.065** [0.033]	0.166** [0.082]
Bigotry	0.041*** [0.011]	0.039*** [0.014]	0.022 [0.020]	0.012 [0.050]
n	927	529	325	73
Adj R-squared	0.1702	0.1249	0.1616	0.1724
Prob>F	0	0	0	0.0085

Notes: Highlighted cells indicate the variable in each regression with the largest standardised beta coefficient.
Numbers in [ ] are the Standard Error. Base for Gender = Females
* Significant at the 10% level. Base for racial groups = Africans
** Significant at the 5% level. Base for religions = 'nofaith'
*** Significant at the 1% level.

Regression 3 (table 7) shows that, for Coloureds, HIV knowledge is the most important determinant, with level of education, racialprej and gender also

significant. For Whites, regression 4, level of education has the most influence, being a Christian as opposed to having no faith reduces their instrumental stigma, and both HIV knowledge and racial prejudices are significant.

Table 8. Determinants of policy stigma

	Dependent Variable: Policy (1-12)			
	All Respondents	*Africans*	*Coloureds*	*Whites*
	1	2	3	4
Intercept	3.73*** [0.289]	4.341*** [0.337]	4.181*** [0.611]	2.393*** [0.877]
Age	-0.006 [0.015]	-0.004 [0.016]	-0.016 [0.300]	0.082 [0.091]
Gender	0.162*** [0.059]	0.056 [0.067]	0.430*** [0.120]	-0.174 [0.201]
White	0.288* [0.154]			
Coloured	0.476*** [0.074]			
Christian	-0.087 [0.089]	-0.093 [0.085]	-0.38 [0.307]	0.086 [0.316]
Muslim	-0.012 [0.139]	-0.219 [0.522]	-0.299 [0.322]	
EduHigh	-0.032* [0.018]	-0.039** [0.019]	-0.023 [0.038]	-0.078 [0.114]
HH Income	0.000 [0.000]	0.000 [0.000]	0 [0.000]	0.0001** [0.0001]
HIV IQ	-0.120*** [0.039]	-0.222*** [0.056]	-0.048 [0.065]	-0.072 [0.111]
RacialPrej	0.011 [0.007]	0.003 [0.007]	0.041** [0.017]	-0.015 [0.031]
Bigotry	0.013*** [0.005]	0.012** [0.005]	0.003 [0.011]	0.042** [0.019]
n	945	532	328	85
Adj R-squared	0.1156	0.0695	0.0712	0.0309
Prob>F	0	0	0.0001	0.2396

Notes: Highlighted cells indicate the variable in each regression with the largest standardised beta coefficient.
Numbers in [ ] are the Standard Error.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.
Base for Gender = Females
Base for racial groups = Africans
Base for religions = 'nofaith'

Table 8 shows the results of regressions with policy as the dependent variable. It must be noted that the majority of respondents did not show any policy stigma and that therefore these regressions only explain the opinions of a small percentage of the sample. Regression 1 indicates that Coloureds add the most to

the explanatory power of the model, and other significant variables are HIV knowledge, gender, level of education and bigotry. For all races individually, the adjusted R-squared is relatively small. For Africans, HIV knowledge is the most influential variable, followed by level of education and bigotry, see regression 2. Gender is the most important variable in Coloureds, regression 3, with HIV knowledge and racial prejudices significant. The regression for Whites, regression 4, proves to be statistically insignificant (Prob>F= 0.24).

5. Conclusion

This paper has found that measures of HIV/AIDS stigma are dependent on how one goes about such measurement. Findings suggest that it is uncommon for people to be characterised by high levels of stigma, but that the vast majority of the population in this age group show some tendencies to stigmatise. It was also shown that expressions of judgement and fear of infection were found to be more pronounced than actual discrimination against PLWHA. This does not, however, suggest that symbolic and instrumental stigma can be ignored. Aggleton and Chase, 2001, refer to imposed stigma, which implies discrimination by others, and self-imposed stigma, which manifests in the devaluation of oneself and a loss of self confidence. The aspect of self-imposed stigma has an equally dangerous potential to drive the disease underground and is seen to be influenced by the judgments and fears of those around one.

The complex nature of HIV/AIDS stigma is reflected in the analysis of some of the determinants of this stigma. It is clear that the determinants of stigma vary between different races. This suggests the importance of considering cultural and environmental influences when evaluating and addressing stigma. It also points to the value of further analyses which replace the race variable with other variables in an attempt to determine what the race variable is acting as a proxy for. The analysis provides evidence that knowledge of HIV transmission has the greatest impact on general levels of HIV stigma for the population at large. It is also safe to conclude that instrumental stigma has a greater explanatory power with regard to respondents' behaviour than does symbolic stigma, and that the influence of these two variables varies considerably according to race. These findings have important implications for HIV education campaigns and provide evidence that efforts to reduce HIV stigma need to be tailored to specific audiences.

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Appendix A

Module J: Attitudes on HIV/AIDS

J.1	Imagine that a hospital has only one free bed left, and two people with pneumonia need it. The one person is infected with HIV; the other is not infected with HIV. Who should get the bed? **Interviewer: Do not read out options**	1	The HIV positive person	67%
		2	The HIV negative person	8%
		3	It depends / other	21%
		9	Don't know	2%

Interviewer read out: Please respond to the following questions by answering "Yes" or "No". If you are not sure, chose the "Probably Yes" or "Probably No" response. If you are quite sure, Choose the "Definitely Yes" or "Definitely No" response.

Interviewer: Do not read out "don't know" option

		Definitely yes 1	Probably yes 2	Probably no 3	Definitely no 4	Don't Know 9
J.2	Do you think the government should provide free health care for people who need it?	92%	6%	1%	1%	
J.3	Do you think the government should provide free health care for people with AIDS?	91%	7%	1%	1%	
J.4	Would it be a good idea for the government to give job training to unemployed young people?	89%	9%	1%	1%	
J.5	Should youth who are infected with HIV get this job training?	75%	17%	3%	4%	1%
J.6	Should all people who are too sick to work get a welfare grant from the government?	80%	15%	2%	2%	1%
J.7	Should someone with AIDS who is too sick to work get a welfare grant from the government?	80%	14%	3%	1%	1%
J.8	Should a woman who got AIDS from sleeping around with many men get this welfare grant from the government?	39%	22%	12%	24%	2%
J.9	Would you be willing to look after a close family member with AIDS?	84%	10%	2%	3%	1%
J.10	Imagine that you find out that one of your friends is HIV infected. Would you still be friends with them?	91%	6%	1%	2%	
J.11	Would you drink from the same bottle of water as an HIV infected friend?	62%	16%	6%	14%	1%

		Definitely Yes 1	Probably Yes 2	Probably No 3	Definitely No 4	Don't Know 9
J.12	If you knew that a shopkeeper had HIV/AIDS, would you buy fresh vegetables from him or her?	65%	18%	4%	11%	1%
J.13	Do you think it should be illegal for people with HIV/AIDS to put others at risk of infection through unprotected sex?	61%	8%	8%	21%	1%
J.14	Do you think people with HIV/AIDS should have to disclose their HIV status to the person they are going to have sex with *even if they use a condom*?	71%	13%	4%	11%	1%
J.15	Imagine you meet someone you really like and he/she tells you that he/she is HIV positive, would you still go out on a "date" with him/her?	57%	26%	5%	9%	2%
J.16	If you loved an HIV positive person, would you have sex with them using a condom?	37%	20%	11%	28%	1%
J.17	Would you prefer to know who has HIV/AIDS in your community so that you can be careful not to get infected by them?	52%	15%	9%	22%	1%
J.18	Do you worry that HIV is much easier to catch than we are told?	40%	13%	10%	35%	2%
J.19	Would you rather not touch someone with HIV/AIDS because you are scared of infection?	15%	6%	13%	65%	1%
J.20	Do you think the names of people with HIV/AIDS should be made public?	12%	5%	15%	67%	1%
J.21	Do you think HIV/AIDS is a punishment for sleeping around?	16%	11%	13%	58%	2%
J.22	Do you think that a school pupil with HIV puts other pupils in their class at risk of infection?	8%	9%	15%	66%	1%
J.23	Do you think a school pupil with HIV should be allowed to attend school?	85%	7%	2%	4%	1%
J.24	Do you think that many people who get HIV infected through sex have only themselves to blame?	26%	14%	12%	45%	1%
J.25	Do you think that some people with HIV/AIDS want to infect other people with the virus?	15%	22%	17%	42%	4%

Appendix B

Critique of the Questionnaire Design

The questionnaire was designed to probe HIV/AIDS stigma. However, not all items were successful in doing so. This was due to uncertainties as to whether the responses to these items would be revealing stigmatising attitudes or another variable altogether. The following questions were found to be inappropriate to be included in the analysis of stigma:

- J.13 Do you think it should be illegal for people with HIV/AIDS to put others at risk of infection through unprotected sex?
- J.14 Do you think people with HIV/AIDS should have to disclose their HIV status to the person they are going to have sex with even if they use a condom?
- J.16 If you loved an HIV positive person, would you have sex with them using a condom?
- J.18 Do you worry that HIV is much easier to catch then we are told?
- J.20 Do you think the names of people with HIV/AIDS should be made public?

Question J.13 raises a legal issue. According to Gresak & Patient, 2000, you can claim damages in a civil case if an attorney can prove causation and intent. So it is illegal. It would therefore be impossible to differentiate answers showing a fear of infection from those displaying knowledge of the law. J.14 raises an ethical question, which in terms of a personal sexual code of ethics (personal trust and respect) requires an answer in the affirmative. It would be unconvincing to interpret answers as being informed by stigmatising attitudes showing a fear of infection, rather than as indicative of respondents voicing the rights of people. J.16 does not give a clear indication of what the alternative course of action taken by the respondent could be. That is, not having sex or not using a condom. It is also questionable whether not having sex, even were using a condom to have been the alternative, could be regarded as stigmatising or simply as rational behaviour. J.18 could be interpreted as a possible explanation for instrumental stigma, rather than as being an indicator of stigma. Finally, despite its potential to reveal a negative response to PLWHA, J.20 was dropped as a result of uncertainty as to what such a response would actually be revealing.

Appendix C

```
/*This Do File creates new variables from existing policy questions, qj_2-
qj_8. Respondents receive a stigma score of 1-4 depending on the
consistency of their answers. A score of 1 represents either no stigma or
no difference in response to a policy for all and a policy for PWHA ,i.e.
opinions are all about the policy and nothing about stigma. So if someone,
for example, does not think that anyone should get a welfare grant then
this respondent scores 1. A score of 4 represents polarisation of answers
which prejudices PWHA or an answer of probably yes for the first item and
definitely no for PWHA.
Scores of 2 represent answers indicating a definitely yes for item one and
a probably yes for PWA, this is taken to show some stigma, but low levels.
A score of 3 is received for respondents saying that all people should
definitely or probably receive government assistance while PWHA should
probably not.  3 is also scored if the respondent believes that all people
should probably not get help while PWHA should definitely not receive the
same help.
All variables use the same scoring system. */

#delimit ;
gen qj2qj3 =. ;
label var qj2qj3 "Health care policy discriminating PWHA" ;
replace qj2qj3 = 1 if qj_2 == 1 & qj_3 == 1 | qj_2 == 2 & qj_3 == 2 |
                      qj_2 == 3 & qj_3 == 3 | qj_2 == 4 & qj_3 == 4 |
                      qj_2 == 2 & qj_3 == 1 | qj_2 == 3 & qj_3 == 1 |
                      qj_2 == 4 & qj_3 == 1 | qj_2 == 4 & qj_3 == 2 |
                      qj_2 == 4 & qj_3 == 3 | qj_2 == 3 & qj_3 == 2 ;

replace qj2qj3 = 2 if qj_2 == 1 & qj_3 == 2 ;

replace qj2qj3 = 3 if qj_2 == 1 & qj_3 == 3 | qj_2 == 2 & qj_3 == 3 |
                      qj_2 == 3 & qj_3 == 4 ;

replace qj2qj3 = 4 if qj_2 == 1 & qj_3 == 4 | qj_2 == 2 & qj_3 == 4 ;


gen qj4qj5 =. ;
label var qj4qj5 "Training policy discriminating PWHA" ;
replace qj4qj5 = 1 if qj_4 == 1 & qj_5 == 1 | qj_4 == 2 & qj_5 == 2 |
                      qj_4 == 3 & qj_5 == 3 | qj_4 == 4 & qj_5 == 4 |
                      qj_4 == 2 & qj_5 == 1 | qj_4 == 3 & qj_5 == 1 |
                      qj_4 == 4 & qj_5 == 1 | qj_4 == 4 & qj_5 == 2 |
                      qj_4 == 4 & qj_5 == 3 | qj_4 == 3 & qj_5 == 2 ;

replace qj4qj5 = 2 if qj_4 == 1 & qj_5 == 2 ;

replace qj4qj5 = 3 if qj_4 == 1 & qj_5 == 3 | qj_4 == 2 & qj_5 == 3 |
                      qj_4 == 3 & qj_5 == 4 ;

replace qj4qj5 = 4 if qj_4 == 1 & qj_5 == 4 | qj_4 == 2 & qj_5 == 4 ;



gen qj6qj7 =. ;
label var qj6qj7 "Welfare Grant policy discriminating PWHA" ;
replace qj6qj7 = 1 if qj_6 == 1 & qj_7 == 1 | qj_6 == 2 & qj_7 == 2 |
                      qj_6 == 3 & qj_7 == 3 | qj_6 == 4 & qj_7 == 4 |
                      qj_6 == 2 & qj_7 == 1 | qj_6 == 3 & qj_7 == 1 |
```

```
                    qj_6 == 4 & qj_7 == 1 | qj_6 == 4 & qj_7 == 2 |
                    qj_6 == 4 & qj_7 == 3 | qj_6 == 3 & qj_7 == 2 ;

replace qj6qj7 = 2 if qj_6 == 1 & qj_7 == 2 ;

replace qj6qj7 = 3 if qj_6 == 1 & qj_7 == 3 | qj_6 == 2 & qj_7 == 3 |
                    qj_6 == 3 & qj_7 == 4 ;

replace qj6qj7 = 4 if qj_6 == 1 & qj_7 == 4 | qj_6 == 2 & qj_7 == 4 ;


gen qj7qj8 =. ;
label var qj7qj8 "Stigma of welfare grant for PWHA vs for promiscuous PWHA"
;
replace qj7qj8 = 1 if qj_7 == 1 & qj_8 == 1 | qj_7 == 2 & qj_8 == 2 |
                    qj_7 == 3 & qj_8 == 3 | qj_7 == 4 & qj_8 == 4 |
                    qj_7 == 2 & qj_8 == 1 | qj_7 == 3 & qj_8 == 1 |
                    qj_7 == 4 & qj_8 == 1 | qj_7 == 4 & qj_8 == 2 |
                    qj_7 == 4 & qj_8 == 3 | qj_7 == 3 & qj_8 == 2 ;

replace qj7qj8 = 2 if qj_7 == 1 & qj_8 == 2 ;

replace qj7qj8 = 3 if qj_7 == 1 & qj_8 == 3 | qj_7 == 2 & qj_8 == 3 |
                    qj_7 == 3 & qj_8 == 4 ;

replace qj7qj8 = 4 if qj_7 == 1 & qj_8 == 4 | qj_7 == 2 & qj_8 == 4 ;
```

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