

ETHNICITY, HIV/AIDS PREVENTION AND PUBLIC HEALTH EDUCATION

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After nearly two decades of battling the HIV/AIDS epidemic, more has been learned in medical science than in public health policy particularly concerning public health education programmes. One of the main obstacles to advances in public health education is, of course, the association of the disease with intangible and controversial value-loaded issues such as privacy and the collective notions of what is permissible and what is unacceptable or even forbidden behaviour. Imaginative public health education policies often do not meet expectations due to implementation obstacles such as failure to reach the target population and lack of information on the population's attitudes and on the public image of the disease. Sociological and other social science research offer pertinent findings.

The growing body of research on the behavioral aspects of HIV/AIDS prevention over the past ten years has encompassed the application and critical analysis of various conceptual frameworks, including the Health Belief Model. Inspired by field theory and symbolic interaction, the Health Belief Model focuses on subjective perception and motivation and proposes that the main triggers of preventive action are: perceived personal susceptibility to the health problem; perceived seriousness of the problem; and the subjective perception of barriers to and benefits of a given preventive action (Rosenstock, 1974; Kirscht, 1988). This paper presents and discusses empirical findings on the application of the Health Belief Model to HIV/AIDS prevention in the context of public health education.

Main assumptions explored

The application of the Health Belief Model to the study of preventive behaviour concerning HIV/AIDS has enriched the already large body of literature on the Model and, more importantly, has highlighted several of its strengths and weaknesses. Among the most relevant findings are the positive influence of knowledge of the health problem; the impact of self-efficacy in carrying out preventive

actions; the uncertain role of perceived personal susceptibility to the disease in promoting prevention; and the importance of acknowledging cultural variations in the dynamics of preventive behaviour. There is also increasing awareness among researchers of the difficulties encountered in identifying specific preventive behaviour that would constitute the target (i.e., dependent variable) in studies on HIV/AIDS prevention.

Selected examples of these findings will suffice. Empirical tests of the Health Belief Model confirm that knowledge on the etiology of HIV infection (LeBlanc, 1993; Wulfert and Biglan, 1995; Abraham and Sheeran, 1994) and self-efficacy (Vanlandingham et.al., 1995) are part of the spectrum of factors facilitating preventive behaviour. Another conceptual consideration is “the predictive value of the components of the model” or “belief specificity”: Kirsch (1988:37) argues that “if an action is regarded as effective” preventive measure against a health problem, “then taking the action should reduce the perceived ... susceptibility” to that health problem. Yet, findings from HIV/AIDS research reveal that the dynamics of the disease from the time of HIV infection to the onset of full-blown AIDS is characterized by great uncertainty on the outcome of one’s risk-taking and preventive actions. Uncertainty increases the person’s subjective perception of personal susceptibility or risk of contracting HIV/AIDS even after ceasing risk-taking behaviour (Prohaska et.al., 1990).

The impact of cultural variations is now acknowledged. While the biomedical aspect of HIV and AIDS is characteristically uniform across geographical regions, the cultural dimension of HIV/AIDS prevention is undeniably important as more than 115 countries around the world have been affected by the epidemic (Jayasuriya, 1995). There is increasing agreement among researchers on the significance of cultural variations on health behaviour involving HIV/AIDS. Cross-cultural differences in collective and individual perception the seriousness of, and susceptibility to the disease, information on preventive measures, and responses to the HIV/AIDS threat, need to be identified and incorporated in preventive programmes. Some American studies have confirmed

cultural differences across ethnic communities within the United States (Prohaska et.al., 1990). More specific confirmation of cultural variations is shown in recent studies that have focused directly on communities outside North America and Europe, for example, domestic clients of females sex workers in Bali, Indonesia (Fajans, Ford and Wirawan, 1995); Northern Thai males (Vanlandingham et.al., 1995); Japanese and Thais in Japan (Munakata, 1994); and some communities in Latin American and African countries (Herdt and Lindenbaum, 1992).

However, the analysis of specific preventive actions is problematic (Abraham and Sheeran, 1994). The targeted preventive action in most social science studies on HIV/AIDS is sexual behaviour and, in particular, condom use. However, the collective perception of sexual activity as a fundamentally private activity in some communities compel people to deflect questions on the subject, to provide socially acceptable responses, or to avoid discussing the matter altogether. Consequently, specific questions on prevention such as condom use, and/ or asking the questions in a public setting, may not elicit reliable information (Vanlandingham et.al., 1995).

In addition to the hypotheses of the Health Belief Model, two other assumptions are explored in this study. One involves the concept of stigma which has been explored in the study of HIV/AIDS from various perspectives. The social rejection perceived by AIDS sufferers is considerable in the United States but the stigma is believed to vary depending on the phase of the disease (Alonzo and Reynolds, 1995) although according to some studies, "only a minority of the public professed to hold hostile and repressive views" (Green, 1995:563). Still, the public image of HIV/AIDS is a relevant policy aspect to explore in the planning of preventive health education programmes in specific communities. The other assumption concerns the perception of personal responsibility or blame for acquiring the disease. It is expected that the stronger a person's belief in personal responsibility or blame for acquiring HIV/AIDS, the more inclined he or she would be to take preventive measures. It is further expected that stigma and blame are related and thus may jointly influence peo-

ple's beliefs in effective preventive measures. The exploration of these attitudinal aspects will help in identifying effective motivators of preventive behaviour that may then be included in public health education programmes.

The Study Procedure

This paper discusses the application of the Health Belief Model and the concepts of stigma and blame to the analysis of preventive health behaviour towards AIDS among three Asian communities, Chinese, Malay, and Indian Singaporeans. A representative stratified random sample (N = 660) of the total population of Singapore citizens comprising those three ethnic groups was interviewed in 1992-93. The personal interviews followed a structured questionnaire and took place at the home of the respondents and in the language of their choice. The multi-ethnic Singapore population offers a very conducive setting to study cultural variations. The ethnic composition has remained stable for the past thirty years, with a Chinese majority (77.5 per cent of the total 2.87 million population in 1993) and two significant ethnic minorities, Malays (14.2 per cent) and Indians (7.1 per cent). The remaining 1.2 per cent are from other ethnic groups (Department of Statistics, 1994b).

Compared to the situation in other countries, the HIV/AIDS epidemic has not yet affected Singapore seriously. The first two cases of HIV/AIDS were discovered in 1985. By July, 1996, the total number of HIV/AIDS cases was 477, of whom 155 have died, 76 have currently full-blown AIDS, and 246 have not shown yet any symptoms. There is no indication that the disease has affected one ethnic community more than the others (*Straits Times*, 1994, 1996). Nevertheless, experts and the health authorities in Singapore agree on the importance of pursuing public preventive education efforts.

Ordinarily, the Health Belief Model is used to predict behaviour. But in this paper, the focus of discussion is the respondents' perception of effective preventive measures against HIV/AIDS. The perception of effective preventive measures is ascertained by the

questions “Is there any effective way of protecting yourself from AIDS?” and “What way is that?” The main components of the Health Belief Model brought in to elucidate the perception of effective prevention are: the belief in one’s personal susceptibility to HIV/AIDS (ascertained through a five-point Likert scale on the respondents’ level of agreement or disagreement with three statements on their personal vulnerability to HIV/AIDS); the perceived seriousness of HIV/AIDS (a scale of alternatives ranging from “not serious at all” to “causing death and having no cure”); the perception of benefits and barriers to preventive action (the availability of blood testing services and the cost of the test); and the level of knowledge on HIV/AIDS (definition and etiology). A set of twelve other variables was included to ascertain the influence of structural variables such as income, occupational prestige, level of formal education, age, gender, marital status, religion and ethnicity; as well as personality characteristics such as future-orientation, sense of control over life events, and preventive orientation; and the impact of mass media and exposure to public health campaigns. As indicated earlier, two additional variables not part of the standard Health Belief Model are introduced: the perceived image of people affected by HIV/AIDS, to detect social stigma; and the perception of possible social sanctions towards people with HIV/AIDS (the attribution of blame to HIV/AIDS victims).

Data analysis comprised two phases: the identification of significant correlation (indicated by chi-square, Spearman correlation, Correlation Coefficient, and Pearson’s *r*) and factor analysis. Both phases were applied to the data from the total sample and then separately to the three ethnic subsamples, using SPSS-PC for MS Windows 6.0. Three rounds of factor analysis were conducted to identify the factors explaining the largest proportion of variance in the perception of effective HIV/AIDS prevention.

Findings

The perception of effective preventive measures against HIV/AIDS among the three main ethnic communities in Singapore is summarized in Table 1 together with the aspect of social stigma. The

responses in this table are to the questions “What kind of people do you think are most likely to get AIDS?” and “Is there an effective way of preventing AIDS?” The first question refers to the social stigma that shapes the public image of HIV/AIDS sufferers. About one out of every four persons in the total sample (26 per cent) believed that typical HIV/AIDS sufferers were homosexuals, commercial sex workers, drug addicts, or a combination of these perceived ‘deviant’ categories. A smaller proportion of respondents (17 per cent) believed that anyone may be affected because, in their view, HIV/AIDS sufferers are victims of accidental infection. However, the majority of the respondents (57 per cent) perceived AIDS sufferers as ‘risk-takers’ that is, people who engaged in activities that put them at risk of HIV/AIDS infection such as having multiple sexual partners and procuring the services of commercial sex workers. There is no significant variation in the perception of these three images of HIV/AIDS sufferers among Chinese, Malays and Indians. Interestingly, the inclination of the majority to see HIV/AIDS sufferers as risk-takers, and of only a minority perceiving them as deviants, is similar to the findings from a recent study of a quota sample of 300 adults in Glasgow and Edinburgh (Green, 1995).

On the second question, the majority of the total sample (82.5 per cent) believe that there is an effective way of preventing HIV/AIDS. About six out of every ten respondents believe that the most effective personal protection against HIV/AIDS is for people at risk to change their sexual habits and behaviour. The second most common preventive measure is “safe sex” that is, the use of condoms, mentioned by 15.2 per cent of all respondents. There are significant ethnic variations in the perception of effective preventive measures. Malays almost unanimously (96 per cent), indicate that there is an effective preventive measure; and in contrast to Indian and Chinese, Malays emphasize that ‘changing risky sexual behavior’ is the most effective preventive measure. Indians and Chinese are more inclined than Malays to rely on condoms as an effective preventive measure. The proportion of people believing that there is no effective protection against HIV/AIDS increases from 4 per cent among

Malays to 18.5 per cent among Indians and 22.5 per cent among Chinese (Table 1).

Perceptions	Malays (174)	Indians (65)	Chinese (418)	Total (657)
“What kind of people do you think are most likely to get AIDS?” ¹				
‘Deviants’	27.6	23.1	25.8	26.0
‘Risk-takers’	62.1	52.3	55.5	56.9
‘Accidental victims’	10.3	24.6	18.7	17.0
	100.0	100.0	100.0	100.0
What is an effective way of preventing AIDS? ²				
(a) Changing sexual behaviour ³	71.8	52.3	56.0	59.8
(b) Using condoms: “safe sex”	13.8	16.9	15.6	15.2
(c) Other measures ⁴	9.8	10.8	6.0	7.5
(d) There is no effective way ⁵	4.6	20.0	22.5	17.5
Total	100.0	100.0	100.0	100.0
<p>1.The correlation between ethnicity and perceived image of HIV/AIDS sufferers is not statistically significant (p = .06). Categories explained in the preceding page.</p> <p>2.The correlation between ethnicity and the perception of specific preventive measures is statistically significant (Contingency Coefficient CC= .216; p= .00001).</p> <p>3.Excludes the use of condoms and refers to answers such as “avoiding promiscuity”; “having only monogamous relations”; “avoiding visits to prostitutes.”</p> <p>4.Other preventive measures mentioned were: “Educating people on the problem”; “avoiding contact with people with HIV/AIDS”; “seeking a doctor’s advice”; “taking a blood test”; “avoiding drug addiction” and/or “the sharing of needles”; “not donating blood”; and “being careful if you have to get a blood transfusion.”</p> <p>5.This category includes those who responded “No” to the first question and a few respondents who in their reply to the first question said that HIV/AIDS could be prevented but, after reflecting on the second question, decided that they could not see any effective way of preventing this disease.</p>				

People’s perception of HIV/AIDS sufferers appears to have a strong influence upon their beliefs on effective preventive measures

Table 2. Link between Perception of HIV/AIDS Sufferers and Beliefs about Effective Prevention of HIV/AIDS (In percentages) ¹				
Beliefs on Effective ways to prevent HIV/AIDS ²	Perception of HIV/AIDS sufferers ³			All
	'Dev- iants'	'Risk- -takers'	'Victims'	
"There is no effective way"	8.8	7.2	65.5	17.6
"Changing sexual behaviour"	54.4	73.4	23.0	59.8
"Using condoms: "safe sex"	22.8	14.9	4.4	15.2
Other measures	14.0	4.5	7.1	7.4
Total (All respondents)	100.0 (171)	100.0 (376)	100.0 (113)	100.0 (660)
<p>1. There is a significant and strong correlation between these two variables: CC = .520; Cramer's V = .431. This correlation persists in the same direction among the three ethnic communities: Malays (CC = .510; V = .420); Indians (CC = .538; V = .452); and Chinese (CC = .522; V = .433).</p> <p>2. Refers to the question and data reported in the lower part of Table 1. See footnotes 3-5 of Table 1.</p> <p>3. Refers to the question reported in the top part of Table 1 (see also footnote 1 of Table 1).</p>				

against HIV/AIDS. As suggested by the findings in Table 2, people who consider HIV/AIDS sufferers as 'deviants' are more inclined to believe that the use of condoms and other measures such as not sharing needles, are the most effective ways for commercial sex workers and drug addicts—two categories of people the respondents consider typical HIV/AIDS sufferers—to prevent the disease. About one out of every two respondents believe that the only likely people to get infected are 'risk-takers'; these respondents are the most inclined to conclude that those people could have prevented the disease by changing sexual behaviour such as multiple sexual partners and visits to commercial sex workers. A small proportion of respondents perceive HIV/AIDS sufferers as hapless victims of fate or bad luck who became infected accidentally. The data indicate that these respondents are typically poorly informed or not informed at

all about the etiology of the disease and, consequently, they tend to believe that HIV/AIDS cannot be prevented.

The link between the perception of HIV/AIDS sufferers and the beliefs on effective prevention among the total sample (Table 2) persists among each of the three ethnic communities. This finding suggests that the influence of the public image of HIV/AIDS upon the beliefs on effective prevention goes beyond the particular cultural or religious values of each community. Indeed, the association remained among Muslims, Christians and people of other religions or with no religious affiliation. This interesting similarity across ethnic groups, however, is accompanied by significant differences revealed by separate factor analyses of the data from the Malay, Indian and Chinese samples. Tables 3, 4 and 5 show the respective rotated factor matrices. Three rounds of factor analyses were used to identify the most important influences associated with the perception of effective preventive measures against HIV/AIDS.

The factor analysis findings confirm the differences among the three ethnic communities in their perception of effective preventive measures against HIV/AIDS. More importantly, it is evident that the factors shaping the perception of effective prevention also vary from one ethnic community to the next. Factor analysis permits the estimation of the proportion of variance in the dependent variable explained by each factor.

Three factors were identified among Malays (Table 3). The factor *Informed Youth* contributes only 3.2 per cent of the variance in the perception of effective HIV/AIDS prevention.¹ This factor represents the trend towards better information on the disease among young educated Malays and their inclination to see HIV/AIDS sufferers as 'risk-takers' who should change their sexual behaviour. The factor *Self-directed Future-orientation* encompasses the sense of control over one's life, the inclination to be prepared for eventualities, and the exposure to health campaigns. This factor does not contribute significantly to the perception of effective HIV/AIDS prevention among Malays. The most influential of the three factors identified among Malays is *Concerned Responsibility* which represents

Table 3. Factors Influencing the Perception of Effective Prevention Against HIV/AIDS: Rotated Factor Matrix, Malay Sample ¹ (Factor loadings)			
Variables ²	Factor 1 <i>Informed Youth</i>	Factor 2 <i>Concerned responsibility</i>	Factor 3 <i>Self-directed future- orientation</i>
Effective HIV/AIDS prevention	-.17951	.73476	-.04180
AGE	-.77100		
EDUCATION	.66504		
HIV/AIDS IMAGE.	.51836		
KNOWLEDGE	.44309		
BLAME		.76130	
SERIOUSNESS		.68122	
SELF-DIRECTION			.76939
FUTURE-ORIENTATION			.65369
CAMPAIGN			.59666
1.To increase clarity, only the highest factor loadings for each factor are included in this table. 2.The 9 variables are designated by a code name as follows: AGE: respondents' age; EDUCATION: total years of formal education completed; HIV/AIDS IMAGE: perceived image of AIDS sufferers; KNOWLEDGE: knowledge on definition and etiology of AIDS; BLAME: perception of personal responsibility for getting the disease; SERIOUSNESS: perceived severity of the disease; SELF-DIRECTION: sense of control over personal life events; FUTURE-ORIENTATION: tendency towards planning for the future; CAMPAIGN: exposure to public health campaigns.			

the combination of a strong belief in the personal responsibility of HIV/AIDS sufferers for contracting the disease together with the clear perception of the disease seriousness. This is the strongest of the three factors, contributing 54.0 per cent of the variance in the perception of effective prevention.²

Malays believe strongly in the individual's personal responsibility for contracting HIV/AIDS and in the seriousness of the disease. While these beliefs are also found in the Indian and Chinese communities, they are particularly strong among Malays.

Variables ²	Factor 1 <i>Concerned responsibility</i>	Factor 2 <i>Image of HIV/AIDS sufferers</i>	Factor 3 <i>Self-directed future- orientation</i>
Effective HIV/AIDS prevention	.70172	-.03469	-.13653
SERIOUSNESS	-.74853		
CAMPAIGN	.68587		
BLAME	.65133		
HIV/AIDS IMAGE		.76108	
AGE		-.69855	
KNOWLEDGE		.57249	
EDUCATION		.51329	
SELF-DIRECTION			.88457
FUTURE-ORIENTATION			.73276
1.To increase clarity, only the highest factor loadings for each factor are included in this table.			
2.The list of variables by code name is provided in Table 3.			

The proportion of respondents believing that a person with HIV/AIDS is responsible for contracting the disease is 93.1 per cent among Malays, 83 per cent of Indians, and 64 per cent of Chinese. This belief is consistent with the perception of effective preventive measures against HIV/AIDS reported in Table 1. In other words, people who believe that HIV/AIDS can be prevented by making a personal decision such as changing personal sexual practices, are also inclined to conclude that the disease is the consequence of wrong choices or deviant behaviour. The logic of this reasoning is apparent in all three communities but, again, it is most prominent among Malays: the correlation between the perception of blame and the belief in effective preventive measures against HIV/AIDS is strongest among Malays (Pearson's $r = .632$) compared to Indians ($r = .419$) and Chinese ($r = .390$).

The seriousness of the disease is evident to all ethnic communities as there is no significant difference in the proportion of respondents indicating that HIV/AIDS is a deadly disease that has no cure. The perceived severity of the disease is closely associated with the belief in personal responsibility and with the belief in effective preventive measures in the total population, as indicated in Tables 3, 4 and 5 where these two beliefs are found in the same dimension or factor in the Malay, Indian and Chinese samples. Still, the salience of these two aspects (blame and seriousness) is particularly evident among Malays as it is only in the Malay sample where these two variables form a single factor, and this is the factor that explains the highest proportion of variation in the perception of effective HIV/AIDS prevention.

Variables ²	Factor 1 <i>Self-directed future- orientation</i>	Factor 2 <i>Concerned responsibility</i>	Factor 3 Image of HIV/AIDS sufferers
Effective HIV/AIDS prevention	-.19087	.63342	-.42665
FUTURE-ORIENTATION	.79221		
SELF-DIRECTION	.69736		
CAMPAIGN	.65091		
EDUCATION	.64583		
BLAME		.78175	
SERIOUSNESS		.74163	
HIV/AIDS IMAGE		.56030	.83387
AGE			-.54732
1.To increase clarity, only the highest factor loadings for each factor are included in this table.			
2.The list of variables by code name is provided in Table 3.			

As in the case of Malays, three dimensions or factors were identified in the Indian sample but only one of these factors,

Concerned Responsibility, contributes substantially (49.2 per cent) to the variance in the perception of effective HIV/AIDS prevention.³ One interesting difference between the Indian and the Malay communities in the nature of this dimension is the role of health campaigns. Public health campaigns appear to play an important part in shaping the sense of concerned responsibility among Indians. Among the Malays, however, exposure to health campaigns is more likely the outcome of an inclination towards self-direction and future-orientation.

The other two factors identified in the Indian community, Factors 2 and 3, have a negligible influence on their perception of effective HIV/AIDS prevention. Factor 2 *Image of HIV/AIDS Sufferers* covers the perceived image of HIV/AIDS, age, level of knowledge on AIDS, and level of education. Factor 3, *Self-directed Future-orientation*, represents the sense of control over one's life and the inclination to be prepared for eventualities. Taken together, these factors contribute less than 2 per cent of the variance in the perception of effective HIV/AIDS prevention.

The factor analysis of data from the Chinese respondents (Table 5) reveals interesting similarities and differences compared to the other two ethnic communities. The factor with the strongest impact upon the perception of effective preventive measures against HIV/AIDS is Factor 2 *Concerned Responsibility*. This factor contributes 40.1 per cent of the variance in the perception of effective prevention.⁴ The two strongest components of this factor, that is, the combined influence of the perceived seriousness of HIV/AIDS and the belief in personal responsibility for contracting the disease, are also found in the Indian and Malay samples. However, among the Chinese, these two beliefs are more likely to be reinforced by information on the etiology and prognosis of HIV/AIDS obtained from sources other than health campaigns. As indicated earlier, it is the exposure to health campaigns among Indians that contributes more to their level of information on the disease's seriousness and on their belief in personal responsibility. Nevertheless, the strong role of infor-

mation (whether obtained from health campaigns or other sources) in determining the perception of effective prevention among Chinese and Indians is comparatively weaker among Malays. As indicated earlier, the perceived seriousness of the disease and the belief in the personal responsibility of HIV/AIDS sufferers for contracting the disease constitute, in themselves, the most substantial influence upon the Malays' perception of effective preventive measures.

The second interesting aspect of the Chinese findings is that while only one prominent factor emerges among Malays and Indians, two factors contributing substantially to the variance in perception of effective HIV/AIDS prevention are identified in the Chinese community. In addition to *Concerned Responsibility*, the other factor is *Image of HIV/AIDS Sufferers* which contributes 18.2 per cent of the variance in the perception of effective prevention⁵ among the Chinese. This factor stresses the link between age and the perception or image of HIV/AIDS sufferers found also among Malays and Indians (Tables 3 and 4) but it is only among the Chinese that these two influences are significant in shaping people's perception of effective HIV/AIDS prevention. This uniqueness notwithstanding, the combined influence of age and public image of HIV/AIDS sufferers has revealed an unexpected common feature in all the three ethnic communities: the younger the respondent is, the more inclined he or she is to perceived HIV/AIDS sufferers as deviants. In clear contrast to findings from other countries (Green, 1995), older respondents tend to lack accurate information on the definition and etiology of HIV/AIDS (the correlation between age and knowledge of HIV/AIDS is $r = -.397$ among Chinese; $r = -.384$ for Indians; and $r = -.283$ for Malays) and have no prejudice against HIV/AIDS sufferers. Instead, older respondents are more inclined to think of HIV/AIDS sufferers with sympathy as victims of accidental infection and thus are less inclined to attribute blame. Table 6 illustrates how this trend persists among people of different religious affiliations by providing figures on the combined influence of religion and age on the perception of personal responsibility for becoming infected with the HIV virus. I will return to this unexpected influence of age later on.

Personal responsibility	Muslims ¹		Christians ²		Other ³	
	> 50	50+	> 50	50+	> 50	50+
Is a person to be blamed for getting AIDS?						
Don't know	-	4.5	-	11.8	2.8	13.2
No	5.5	13.6	12.9	29.4	28.0	40.6
Yes	94.5	81.8	87.1	58.8	69.2	46.2
Total (Number)	100.0 (145)	100.0 (44)	100 (62)	100 (17)	100.0 (286)	100.0 (106)
<p>1. The correlation between age and perceived personal responsibility is significant (Spearman Sp= -.196; p = .007).</p> <p>2. Sp= -.311; p = .005.</p> <p>3. Sp= -.231; p < .00001. This category includes religions other than Islam and Christianity.</p>						

Discussion

Only the variables with significant correlations in the total sample were included in the factor analyses of the three ethnic communities. As the basic idea of factor analysis is to identify underlying dimensions in the data, variables with no statistically significant correlations ($p \leq .05$) were excluded. The separate factor analyses for each community reveal interesting aspects of the influence of cultural values and beliefs. The importance of the latter for the planning and implementation of preventive programmes is undeniable given that the most well-known aspect of the HIV/AIDS epidemic is the enhancement of the link between private choices and public health. It is now widely acknowledged that personal decisions on intrinsically private activities have serious consequences for the health of entire communities and nations (Herdt and Lindenbaum, 1995; Quah, 1992; Bayer, 1991).

How may these differences among the three ethnic communities be explained? The findings contradict expectations. The small size of the island republic, the corresponding high population density, and

the close proximity of the average Singaporean to information sources and services, would suggest a high degree of cultural homogeneity. Moreover, whatever their ethnic identity, all Singaporeans are exposed to potentially 'equalizing' factors that have been in operation for the past three decades: A national educational system covering all schools and including aspects on health education; television and radio programmes accessible to all; national health campaigns broadcasted through all mass media; and compulsory national service for men. In addition, Singapore's health authorities singly and in collaboration with non-government organizations, conduct periodic national educational campaigns specifically targeting the prevention of HIV/AIDS (Quah, 1992).

Based on these common structural conditions and equalizers, one may expect to find no significant differences in the perceptions and beliefs of Chinese, Indian and Malay Singaporeans concerning HIV/AIDS prevention. Yet, as the data indicate, the ethnic differences are clear and consistent. Two tentative explanations of the ethnic variations in the beliefs on HIV/AIDS prevention identified in this study may be found in two structural features of Singapore's society, not usually associated with health and illness matters. One feature is the characteristically Singaporean effort at strengthening, simultaneously, the citizens' belief in a common destiny or national identity and in their different ethnic roots. The other feature is the role of religion.

The first tentative explanation refers to the process of nurturing Singaporeans's national identity at the same time that they are encouraged to cultivate the values of their own ethnic communities (*Straits Times*, 1989; Quah, 1990). This process has been examined by social scientists and found to be workable and even positive (Vasil, 1995; Lai, 1995). An example of this dual identity drive is the efforts of the Malay community to become full-fledged participants in the economic development of the country without losing their own cultural and religious values (Vasil, 1995; MENDAKI, 1993). An important aspect of the dual identity drive is the impetus given to channels of expression particular to each community, most notable

among these are Malay-, Tamil- and Chinese-language newspapers, television and radio channels, and literary publications.

In sum, each ethnic community in Singapore is encouraged to inculcate among its members its own values and beliefs, to shape the community's perspective on principles guiding a person's behaviour. Central to these cultural guidelines are the meaning of privacy, the moral aspects of private choices, and the socially and morally acceptable and unacceptable ways of satisfying individual needs including those pertaining to sexuality. Members of one ethnic community may candidly give more or less significance to one aspect of conduct compared to other ethnic communities as part of the socially acceptable process of signalling (rather than concealing) cultural differences.

The second tentative explanation of ethnic differences is related to the first and it is the important role of religion. Of the three ethnic groups, Malays display a unique feature: the close overlap between their religious affiliation and their ethnic identity. As a community, Malays are the most homogenous in religious identity: 99.6 per cent profess Islam (Department of Statistics, 1994a). In contrast, one of every two persons in the Indian community is a Hindu. The Chinese display an even greater variety in religious affiliations. The religious aspect is very important in understanding the differences between the three ethnic communities, particularly between Malays on the one hand, and Chinese and non-Muslim Indians on the other hand. Islam permeates the informal everyday life of Malays (Lai, 1995) as well as their formal collective events and development plans (MENDAKI, 1993). Their keen awareness of religious precepts guiding private actions including sexual behaviour, is manifest in the emphasis they give to personal responsibility and, consequently, in the attribution of personal blame for contracting HIV/AIDS. Ninety-one per cent of Muslims believe in personal blame, compared to 81 per cent of Christians; 56 per cent of those identifying themselves with Buddhism, Taoism and Chinese syncretic religion; and 79 per cent of people with other religious affiliations, including Hinduism.

Compared to secular values and the values of other religions, the influence of Islam and Christianity appear to be stronger in shaping people's perception of effective preventive measures against HIV/AIDS. While 93.7 per cent of Muslims and 90 per cent of Christians assert that there are effective ways to prevent HIV/AIDS, this proportion drops significantly to 76 per cent among people with other religions (including Hindus) or no religious affiliation.

An additional dimension of the impact of religion is suggested by the scrutiny of the link between age and the perception of personal responsibility for contracting HIV/AIDS. It is assumed in the literature (cf., Munakata, 1994; Herdt and Lindenbaum, 1992; Bayer, 1991; Lindenbaum, 1992) that first, younger people are better informed about the disease and second, that as they are less conservative than older people, young adults are also *less* likely to "blame the victim." As shown earlier, the first assumption on the association between age and knowledge on HIV/AIDS is confirmed by this study's data ($r = -.370$); but the second assumption is not supported by the findings. On the contrary, people 50 years old or older are significantly less inclined than younger people to attribute personal responsibility to HIV/AIDS victims.

There are at least two possible reasons for this trend. The majority (93 per cent) of Singaporeans infected with the HIV virus up to October 1994 were below the age of 50 (*Straits Times*, 1995a); and people below 50 tend to be better informed on the etiology of the disease. As discussed earlier, age and religion exert a combined influence on the perception of personal responsibility. Seen from the angle of religious affiliation, the stronger inclination of people below fifty years of age to believe in personal responsibility persists among all religious groups. The influence of age, however, is weakest among Muslims and more prominent among Christians. A large majority of Muslims whether below the age of 50 (94.5 per cent) or above 50 (82 per cent), believe in personal responsibility for contracting HIV/AIDS.

The salience of cultural and religious values for people's beliefs on this disease confirmed by the findings of this study, needs to be

considered in the context of the HIV/AIDS scene in Singapore. Singapore is located in the region where the World Health Organization predicts the HIV/AIDS epidemic "is just moving into the early explosive phase" (WHO, 1994). Yet, compared to neighboring countries, the impact of the disease has been relatively benign (*Straits Times*, 1996; WHO, 1994).

The source of HIV infection has been changing rapidly: from 1985 to 1990, the main source was homosexual contact and only 26 per cent of all cases contracted the virus through heterosexual contact. The proportion of infections through heterosexual contact increased to 54.8 per cent of new cases in 1991, and it was over 70 per cent in 1995. This trend has led the Ministry of Health to emphasize in its public health campaigns "that the only way to avoid AIDS is to avoid casual sex and sex with prostitutes" (*Straits Times*, 1995c) and "Condoms, used properly, can reduce the risk of infection. But they do not guarantee complete protection" (*Sunday Times*, 1993). Another relevant aspect of the local HIV/AIDS scene is that the disease is not particular to a given community. The ethnic distribution of HIV cases at the end of 1994 showed a close resemblance to the ethnic distribution in the total population: 77.4 per cent of cases were Chinese; 11.5 per cent Malay; 7.3 per cent Indian; and 3.8 per cent from other ethnic groups (*Straits Times*, 1994).

Following the pattern in many other countries, health authorities in Singapore have confronted the threat of HIV/AIDS by setting up organizational responses, giving support to the private sector in this endeavor, and stressing the importance of public education (Quah, 1992). Preventive education programmes are addressed to the general public as well as to targeted groups. Examples of the latter include HIV/AIDS educational booklets in different languages such as the pamphlet *Kenali dan Hindari AIDS* (Know and Avoid AIDS) prepared by the Malay section of the non-governmental organization Action for AIDS, set up in May, 1992 (*The New Paper*, 1993) Another special programme is "Project Protect" geared to educate commercial sex workers about sexually transmitted diseases (STDs) including HIV/AIDS. The project began in 1992 and uses workshops,

counselling and group discussions with commercial sex workers to give them information on how STDs and HIV/AIDS are transmitted. The Ministry of Health also sells condoms to commercial sex workers as part of the same preventive efforts (*Straits Times*, 1995b).

A final illustration of the relevance of cultural differences is the content of preventive messages in the mass media. To minimize implementation obstacles, the planning of public HIV/AIDS educational campaigns need to take into consideration the attitudes and values of the people to be served or target, and to conform to Singapore's multi-ethnic and multi-religious landscape. Aiming to attract the attention of young adults to its prevention campaigns on AIDS, the Ministry of Health used television advertisements that deal with regular heterosexual encounters and the importance of monogamous relations. One of these television advertisements showed a man telling a friend that the woman he slept with last night was great and that he will sleep with her again tonight. After a pause, the man said that woman is his wife. This advertisement was criticized as "inappropriate," "awkward," "rude" and "obscene" by some members of the Malay/Muslim community in letters to a Malay-language newspaper. The Ministry of Health apologized explaining that "If the commercial has caused discomfort among certain Malay members of the public, it was entirely unintended" and that it has "taken note of the feedback from the Malay community and will take it into consideration when we plan our next anti-AIDS campaign" (*Straits Times*, 1995a).

Conclusion

Assessing the conclusions of a social science conference on HIV/AIDS, Lindenbaum (1992:330) stated that all the papers presented had "provided evidence of alternate meanings and understandings of the epidemic in different locations" and stressed the importance of continued research on both "biomedical knowledge" as well as "local knowledge" on AIDS. Lindenbaum's call for continued investigation of socio-cultural differences is shared by an increasing number of social scientists. This study addresses that

need to understand the ways in which different communities approach the worldwide HIV/AIDS epidemic by exploring a few assumptions based on the Health Belief Model among the three major ethnic communities in Singapore. Moreover, frequent information on cultural variations in the context of health contribute substantially to the design and implementation of health policy.

The study findings confirm the pervasive influence of cultural and religious values on health related behaviour in general and on HIV/AIDS prevention in particular. The findings also corroborate the usefulness of the Health Belief Model when it is used as an 'ideal type': its application to the analysis of different communities helps to identify similarities and 'deviations' that would not be detectable otherwise. The only Health Belief Model component influencing the perception of effective prevention against HIV/AIDS in all three ethnic communities is the perceived seriousness of the disease. This variable, together with the perception of personal responsibility, are very important determinants of the perception of effective prevention against HIV/AIDS. None of the other main components of the model (i.e., perceived personal susceptibility and perception of barriers to and benefits of preventive action) play a significant role in this regard. Still, I must note that although the belief in personal susceptibility does not influence a person's perception of effective HIV/AIDS prevention, it may be relevant to preventive action as found in other studies (Kirscht, 1988).

The two additional variables complementing the Health Belief Model have elucidated the spectrum of attitudes and beliefs about HIV/AIDS. These two variables are the perception of personal responsibility or blame for getting the disease, and the stigma characterizing the perception of HIV/AIDS sufferers, that is, the public image of the disease. Observing it in isolation, a person's image of HIV/AIDS sufferers appears to influence significantly his or her belief on the availability of effective preventive measures against HIV/AIDS. Yet, a person's image of HIV/AIDS sufferers is molded by the person's age and level of information on the disease. The latter

is the outcome of his or her formal educational level as well as of his or her knowledge on the etiology of HIV/AIDS.

Consequently, on the question of what determines a person's perception of effective HIV/AIDS prevention, the factor analysis findings show that the image of HIV/AIDS, per se, is less important than the joint impact of the belief in personal responsibility and the perceived seriousness of the disease. The level of knowledge on HIV/AIDS is not always influential: it does not play an important part among Malays/Muslims and Indians, and it appears to work only indirectly among the Chinese by increasing their perception of seriousness and personal responsibility.

Finally, the findings from this study confirm the importance of investigating "the local" sphere of this worldwide epidemic—as well as of any major public health threat—to be able to design and fine-tune prevention programmes that take into consideration and fit effectively the norms and beliefs of each community. In Singapore, the public discourse on HIV/AIDS as presented in public health campaigns (using television, printed media, radio, posters, and other avenues) needs to continue distributing objective information on the etiology, preventive measures and prognosis of the disease while taking into consideration the religious and cultural sensitivities of different communities. But the findings suggest that the focus on personal responsibility for one's actions and on the seriousness of the disease are likely to get the best response from the target population.

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Endnotes

1. This proportion of variance explained was calculated as the square value of .17951 which is the Factor 1 loading on the dependent variable Effective HIV/AIDS Prevention in Table 3.
2. Calculated as the square value of .73476 which is the Factor 2 loading on the dependent variable Effective HIV/AIDS Prevention in Table 3.
3. Calculated as the square value of .70172 which is the Factor 1 loading on the dependent variable "Effective HIV/AIDS prevention" in Table 4.
4. Calculated as the square value of Factor 2 loading .63342 on the dependent variable Effective AIDS Prevention in Table 5.
5. Calculated as the square value of Factor 3 loading -.42665 on the dependent variable Effective AIDS Prevention in Table 5.

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