

Social distance mediates the association between fear of infection and better-off-dead beliefs about people living with HIV

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Abstract

Objectives: The better-off-dead belief, the idea that death is preferable for people living with human immunodeficiency virus, is a highly devaluing attitude, but little is known about its determinants among the general population. Guided by the instrumental model of stigma, this study examined the contributive roles of fear of infection and social distance to this stigmatizing belief.

Methods: A total of 304 Chinese university students recruited in Guangzhou and Hong Kong responded to questionnaires assessing the better-off-dead belief, fear of infection and social distance. Structural equation modelling was used to test associations among the variables.

Results: Fear of infection and social distance were associated with higher levels of the better-off-dead belief. Social distance mediated the association between fear of infection and the better-off-dead belief.

Conclusions: Fear of infection and social distance are determinants of the better-off-dead belief, with social distance serving as a mediator. This study highlights the importance of addressing fear and avoidance in future public health efforts to reduce the prevalence of the better-off-dead belief.

Keywords

Better-off-dead belief, fear of infection, HIV, social distance, stigma, China, structural equation modelling

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Introduction

People living with human immunodeficiency virus (HIV) experience devaluation in both life and death. Previous studies of people



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living with HIV and their spouses have identified beliefs that the death of people living with HIV could be considered a benefit to themselves, their family and society.^{1,2} Although such devaluing thoughts reflect public stigma, the characteristics and causes of the better-off-dead belief about people living with HIV are yet to be investigated. The present study aimed to investigate the better-off-dead belief and examine its psychological roots in Chinese university students.

The better-off-dead belief is an extreme expression of HIV stigma that devalues the lives of people living with HIV by considering such lives burdensome and dispensable, and attaches positive meanings to their deaths.² Such discriminating thoughts are contingent upon the stigmatizing social construction of HIV, which blames people living with HIV for their own infection and for representing a health risk and caregiving burden to others.^{3,4} The better-off-dead belief may be particularly salient in China. The Chinese government did not begin to respond to HIV until the late 1990s; public education about HIV has a relatively low priority in China, and there are relatively strong misunderstandings and a stigma about HIV.⁵⁻⁷ Additionally, in collectivist societies such as China, stigmatized people living with HIV may attract a sense of shame and disgrace to the whole group (including uninfected individuals) because collectivistic values emphasize the homogeneity of group identity.⁸ As such, the deaths of people living with HIV may provide relief from this identity threat to the Chinese uninfected population and may therefore be considered advantageous. Although various expressions of the HIV stigma have been investigated (e.g. negative emotional feelings, employment discrimination), stigmatizing beliefs about the deaths of people living with HIV have never been examined in the general population.⁷ The better-off-dead belief may account for the

long-existing public support for coercive policies against people living with HIV (e.g. criminalization and punishment).^{9,10} The idea that the lives of people living with HIV are dispensable and that their deaths provide a solution to the suffering and burden they cause can lead to extreme and inhumane responses to them. Therefore, investigation of the better-off-dead belief may increase understanding of the hostility against people living with HIV in the general population.

The better-off-dead belief about people living with HIV may have its root in a fear of infection in the uninfected population. The instrumental model of stigma suggests that self-interest can lead to the stigmatization of individuals suspected of bringing misfortune.¹¹ Fear of infection is a major concern in the uninfected population and (given the contagious nature of HIV) is a primary determinant of public discrimination against people living with HIV.^{7,12} Fear of contagion is closely associated with misunderstandings about HIV transmission (e.g. HIV can be transmitted via casual contact), which can increase the perceived risk of infection and generate unnecessary worry and fear.¹³ Such concerns may contribute to the better-off-dead belief: people with a greater fear of infection may exaggerate the risk of people living with HIV transmitting the virus to others in daily life, and therefore overestimate the threat they present and devalue the meaning of their lives. Moreover, uninfected people may consider the deaths of people living with HIV as the best solution to the threats presented by HIV, an assumption that relieves their fear of being infected. The contribution of fear to stigmatization, dehumanization and reduced empathy has been illustrated in previous studies in different contexts.^{14,15} A link between fear of infection and the better-off-dead belief about people living with HIV was demonstrated in one study,

which showed that overestimation of contagiousness led to palliative care reluctance and neglect of people living with HIV in uninfected caregivers.¹⁶ Therefore, the contribution of fear of infection to the better-off-dead belief deserves further investigation.

Social distance, the intention to keep certain stigmatized groups away,¹⁷ may mediate the association between fear of infection and the better-off-dead belief. According to the instrumental model of stigma, the better-off-dead belief can be viewed as an extreme consequence of fear of infection among uninfected people, and represents their wish to avoid potential harm from people living with HIV.¹⁸ As such, the tendency to avoid people living with HIV may serve as a mediating mechanism between fear of infection and the better-off-dead belief. It is well-documented in the stigma literature that a desire for social distance from people living with HIV is a direct result of concerns about being infected.^{6,12} Conversely, reducing social distance is helpful in alleviating stigmatization.¹⁹ Unwillingness to interact and associate with people living with HIV (generated from exaggerated fear of infection) may develop into an extreme avoidance attitude: the better-off-dead belief.

Stigma is a major barrier to reducing HIV transmission because it is associated with various risk behaviours in people living with HIV (e.g. greater non-disclosure of HIV status or lower treatment adherence) and in uninfected or unknown-status individuals (e.g. HIV testing reluctance or lower HIV protection).^{13,20} Given the rapid increase in the prevalence of HIV among young Chinese adults in recent years,²¹ stigmatizing attitudes toward people living with HIV in this population may greatly influence the HIV epidemics in China.^{13,22} Therefore, guided by the instrumental model of stigma, which suggests that stigmatization results from avoidance of perceived risk of harm,^{11,18} this

study aimed to investigate the association between fear of infection and the better-off-dead belief as well as the mediating role of social distance in a sample of Chinese university students. We hypothesized that 1) fear of infection will contribute to the better-off-dead belief toward people living with HIV and that 2) social distance will mediate this association.

Methods

Participants and procedure

This was a cross-sectional survey. The results of a power analysis for the mediation model suggested that a sample size of 250 would provide a statistical power of over .95 with an acceptable model effect size for optimal fitness (root mean square error of approximation [RMSEA] = .05) of $\alpha = .05$, and that a further increase in sample size would not substantially enhance the statistical power.^{23,24} Considering potential practical issues such as missing data, which could increase the required sample size, we determined a sample size of approximately 300.²⁵

The target participants were undergraduate college students; there were no exclusion criteria. The first author recruited participants at a Guangzhou university campus and the second author recruited participants at a Hong Kong university campus. The first and the second author were studying at these two universities during the study period. Undergraduate students were recruited in public areas (e.g. library, canteen, sports centre). After providing their written informed consent, participants completed self-administered questionnaires. Questionnaires delivered to Guangzhou participants were in simplified Chinese and those delivered to Hong Kong participants were in traditional Chinese, with minor differences in character and wording. Data collection was conducted

from November 2015 to June 2016. Ethical approval was obtained from City University of Hong Kong.

Measures

Sociodemographic data were collected for the following variables: sex, age and study grade year (1 to 4).

Fear of infection was measured using the fear of infection subscale of the HIV/AIDS Stigma Scale, developed by Varas-Díaz and Neilands.²⁶ This eight-item subscale assesses personal fear of infection with HIV/AIDS in daily activities (e.g. 'I would not use the eating utensils of a person with HIV/AIDS'). The original English scale was translated into Chinese following translation and back-translation procedures. Cronbach's α for the fear of infection subscale was .80 in this study.

Social distance was measured with seven items used by Hunter and Ross to assess willingness to interact or associate with people living with HIV in various social situations (e.g. 'have him/her as a near neighbour').²⁷ These items were modified following the Bogardus Social Distance Scale.¹⁷ In the present study, the reversed mean score was used to represent the rejection of people living with HIV; a higher score indicated greater social distance. The Chinese version of the Social Distance Scale has demonstrated good psychometric properties.²⁸ Cronbach's α for these items in the present study was .89.

Better-off-dead belief was measured using three items developed by Yu and colleagues.² Participants indicated their agreement with the statements 'People with HIV are better off dead', 'Their families are better off when people with HIV die', and 'The community is better off when people with HIV die'. Cronbach's α for these items was .88.

Statistical analyses

Pearson correlation analyses were conducted to test the preliminary associations among the variables. Structural equation modelling (SEM) was used to further test the mediation model with latent variables. As SEM is able to account for measurement error, it increases the accuracy of modelling estimates.²⁹ To test the mediation effect, we used the Monte Carlo confidence interval method to estimate the indirect effect of fear of infection on the better-off-dead belief via social distance.³⁰ Analyses were conducted using SPSS Version 21.0 (IBM Corp., Armonk, NY, USA) and Mplus 7.0.³¹

Results

A total of 305 Chinese undergraduate students participated in this study (mean age = 20.63 years; standard deviation = 1.39 years; 38.7% male; 61.3% female; Guangzhou: $n = 204$, 66.9%; Hong Kong: $n = 101$, 33.1%) (Table 1).

The results of the correlation analyses showed that a greater fear of infection was correlated with higher levels of the better-off-dead belief ($r = .37$, $P < .01$), which supported Hypothesis 1. Social distance was positively correlated with both fear of infection ($r = .44$, $P < .01$) and the better-off-dead belief ($r = .37$, $P < .01$), which provided preliminary evidence to further test Hypothesis 2.

Preliminary analyses were performed to investigate the associations between demographic characteristics (sex, age, grade and locality), the better-off-dead belief and social distance. The results showed that social distance and the better-off-dead belief were significantly correlated with sex (0 = male, 1 = female; $r = -.14$, $P < .05$ and $r = -.12$, $P < .05$, respectively) and locality (0 = Guangzhou, 1 = Hong Kong; $r = -.21$, $P < .01$ and $r = -.20$, $P < .01$, respectively),

Table 1. Descriptive statistics for sociodemographic variables, fear of infection, social distance and the better-off-dead belief.

	Total (305 participants) Mean ± SD n (%)	Guangzhou (204 participants) Mean ± SD n (%)	Hong Kong (101 participants) Mean ± SD n (%)
Sex (proportion of males)	39.10%	41.70%	32.70%
Age	20.63 ± 1.39	20.63 ± 1.39	20.62 ± 1.41
Grade			
Year 1	8.20%	4.43%	15.84%
Year 2	31.58%	31.03%	32.67%
Year 3	24.67%	21.67%	30.69%
Year 4	35.53%	42.86%	20.79%
Fear of infection	3.67 ± .60	3.83 ± .62	3.36 ± .44
Social distance	2.63 ± .77	2.74 ± .73	2.40 ± .81
Better-off-dead belief	2.81 ± .88	2.95 ± .80	2.54 ± .97

SD: standard deviation.

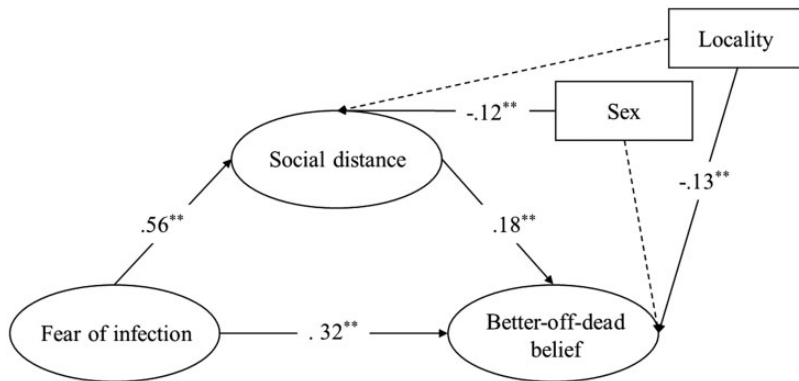


Figure 1. Mediation effect of social distance on the association between fear of infection and the better-off-dead belief.

Note. ** $P < .01$.

which were included as covariates in later analyses. None of other demographic characteristics (i.e. age and grade) showed significant correlations with the better-off-dead belief or social distance, and they were therefore excluded from later analyses. The SEM results showed that the proposed three-factor measurement model (fear of infection, social distance and the better-off-dead belief) showed a good fit to the

data ($\chi^2/df = 1.82$, $P < .01$, RMSEA = .052, comparative fit index (CFI) = .948, Tucker–Lewis index (TLI) = .940, standardised root mean square residual (SRMR) = .073). Subsequent analyses of the mediation model with latent variables including covariates also demonstrated reasonable fitness ($\chi^2/df = 2.06$, $P < .01$, RMSEA = .059, CFI = .923, TLI = .911, SRMR = .077)

(Figure 1). Sex (0 = male, 1 = female) was negatively associated with social distance, showing that female participants reported lower levels of social distance. Locality (0 = Guangzhou, 1 = Hong Kong) was negatively associated with the better-off-dead belief: Hong Kong participants had lower levels of the better-off-dead belief. Fear of infection was significantly associated with the better-off-dead belief ($\beta = .32$, $P < .01$), supporting Hypothesis 1. Social distance was positively associated with both fear of infection ($\beta = .56$, $P < .01$) and the better-off-dead belief ($\beta = .18$, $P < .05$). The results also indicated that 22.50% of the variation in the better-off-dead belief was explained by the SEM model ($R^2 = .225$, $P < .01$). Mediation analysis using the Monte Carlo confidence interval method showed a significant indirect effect of social distance as a mediator of the association between fear of infection and the better-off-dead belief; the estimated effect was .15 (95% confidence interval: .02 to .27, $P < .05$). The positive and significant mediation effect supported Hypothesis 2: that fear of infection contributes to the better-off-dead belief via enhanced social distance.

Discussion

This study focused on public devaluation of the deaths of people living with HIV, and showed that fear of infection leads to the better-off-dead belief about people living with HIV among Chinese university students. Our findings also indicate the mechanism underlying this association, by identifying the mediating role of social distance. The results expand the instrumental model of stigma to incorporate the better-off-dead belief. The clarification of the roots and mechanisms of the better-off-dead belief provides insights about how to reduce such extreme stigmatization against

people living with HIV in the general population.

This study is the first to focus on the better-off-dead belief toward people living with HIV in the general population rather than just among people living with HIV or their spouses. It demonstrates that fear of infection can generate extreme stigmatizing views that attach positive meanings to the deaths of people living with HIV. In addition to the exaggerated fear of HIV biological contagion, this uninfected Chinese sample reported a particular concern about social contagion (e.g. worries about people living with HIV morally corrupting people around them), which results from a stigmatizing view of the moral character of people living with HIV.⁷ The role of this social contagion fear in the better-off-dead belief warrants further investigation. As well as reflecting utilitarian self-interest, the stigma also has a symbolic basis.¹¹ HIV-related value-based ideological systems, such as attitudes toward homosexuality,³² may also contribute to the better-off-dead belief. The possible consequences of the better-off-dead belief for the development of extreme negative public opinions about people living with HIV also deserve attention. For example, a public that considers the lives of people living with HIV dispensable (and even a burden to families and society) may oppose supportive policies for HIV care. Such attitudes may lead to inhumane social conditions for people living with HIV, especially as advancements in treatment have made HIV a chronic disease instead of a terminal one.³³

Our finding that fear of infection contributed to the better-off-dead belief by enhancing social distance supports the instrumental model of stigma.¹¹ It suggests how avoidance of potential harm, which is often fuelled by misconceptions about HIV transmission (e.g. that HIV can be transmitted through casual social contact), leads to the stigmatization of certain

groups. The mediating role of social distance suggests that avoidance rooted in fear of contagion can lead to negative attitudes that devalue the lives of people living with HIV. As noted above, such devaluation may include the assumption that death provides the ultimate segregation between the uninfected population and people living with HIV. These results highlight the importance of reducing avoidance of people living with HIV, and preventing the development of extreme stigmatization and dehumanization fuelled by social distance.

Our findings have large implications for antistigma interventions. Previous stigma reduction programs in China and other countries have used a range of strategies, including providing education about HIV-related knowledge, building skills to reduce stigmatizing attitudes and cope effectively, offering counselling or support, increasing contact with people living with HIV, altering stigmatizing structural factors and expanding biomedical preventions.^{34,35} However, the findings of these programs have been mixed regarding their efficacy in reducing HIV stigma.^{34,36} Our findings highlight the importance of two existing antistigma strategies: providing education about HIV-related knowledge and increasing contact with people living with HIV. As the present findings show that fear of infection leads to the better-off-dead belief, and that fear of infection is associated with incorrect beliefs about HIV transmission,³⁷ education to inform people that HIV cannot be transmitted via casual contact is crucial to antistigma campaigns.¹² Moreover, as some studies (including a previous study of ours) show that increasing contact reduces avoidance of stigmatized groups,^{38–40} it may be particularly helpful if HIV stigma reduction programs can break the mediating effect of social distance.

This study also showed that sex and locality contributed to the mechanism

underlying the better-off-dead belief. Specifically, female participants reported lower levels of social distance toward people living with HIV, which could be explained by the higher levels of empathy shown by females. Sex differences in empathy are shaped by differences in neurobiological structures.⁴¹ For example, females have a greater volume of grey matter than males in brain areas associated with empathy.⁴² These differences are also cultural byproducts of gender socialization: empathetic responses are consistent with female gender stereotypes and so are reinforced more in females than in males.^{41,43,44} However, as previous studies have demonstrated mixed findings regarding sex differences in HIV stigma, future studies with more rigorous designs are needed.^{6,45} Moreover, Hong Kong students showed lower levels of the better-off-dead belief than Guangzhou students, which is consistent with previous findings, although both mainland Chinese and Hong Kong participants reported stronger stigma than American participants.⁷ There is evidence for an association between collectivistic values and stigmatization.⁸ Therefore, this difference between the students may be because Hong Kong occupies a cultural middle ground between a collectivistic (e.g. mainland China) and an individualistic society (e.g. America) owing to the British colonization of Hong Kong in the last century.⁴⁶

This study had some limitations. First, the cross-sectional design means that the associations identified are correlational in nature and there is a lack of temporal evidence for the mediating mechanism of the better-off-dead belief. However, given the current lack of research on the better-off-dead belief toward people living with HIV, these preliminary mediation findings could provide a foundation to generate useful hypotheses for future studies. Second, the self-reported measures used here are subject

to potential bias, especially as they assessed sensitive stigma issues. Third, a convenience sample of university students was used, which may limit the generalization of the findings to the whole population of university students and to other populations.

The present findings expand the understanding of HIV stigma by demonstrating the stigmatizing nature of the better-off-dead belief. The results demonstrate the contribution of fear of infection to this devaluing belief and the mediating role of social distance, and therefore highlight the importance of evidence-informed public health efforts to reduce stigmatization of people living with HIV.

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Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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