Is socio-economic status a determinant of HIV related stigma attitudes in Zimbabwe?: findings from Project Accept (HPTN 043)

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Abstract:

Background**:** HIV related stigma and discrimination is a known barrier for HIV prevention and care. We aimed to assess the relationship between socio-economic status (SES) and HIV related stigma in Zimbabwe.

Methods**:** This paper uses data from Project Accept, which examined the impact of community-based voluntary counselling and testing intervention on HIV incidence and stigma. Total of 2,522 eligible participants responded to a psychometric assessment tool, which assessed HIV related stigma and discrimination attitudes on 4 point Likert scale. The tool measured three components of HIV-related stigma: shame, blame and social isolation; perceived discrimination, and equity. Participants' ownership of basic assets was used to assess the socio-economic status.

Results: Shame, blame and social isolation component of HIV related stigma was found to be significantly associated with medium (OR = 1.73, p <0.01) and low SES (OR = 1.97, p <0.01), indicating more stigmatizing attitudes by participants belonging to medium and low SES in comparison to high SES.

Conclusion**:** For HIV related stigma and discrimination programmes to be effective, they should take into account the socio-economic context of target population.

Introduction:

HIV has serious implications for health from different perspectives – physical, economic and societal. HIV does not only affect the health and well-being of the HIV positive individual but it affects societies and economies at various levels. In particular, stigma can be a barrier to important HIV prevention actions, such as condom use, HIV testing, disclosure of HIV status and access to anti-retroviral treatment.[1-5]

"HIV related stigma specifically refers to the "prejudice, negative attitudes, abuse and maltreatment directed to people living with HIV and AIDS".[6] Stigma is defined as a real or perceived negative response to a person(s) by individual(s), community or society and it is said to be characterised by rejection, discrediting, disregarding, underrating and social distance.[7] Because there is no single or set of features that define an individual or group as stigmatized,[8] measuring or assessing stigma and discrimination becomes complicated.

Although stigma is considered one of the greatest challenges to addressing the HIV epidemic, data that accurately describes and quantifies stigma is often not available to program implementers and policy-makers.[3] Following Goffman's socio-cognitive conceptualization of stigma, many theoretical frameworks and methodological tools to define and assess HIV stigma and discrimination have been derived.[9-15] Genberg and colleagues developed a psychometric scale which characterised HIV stigma into 3 components: shame, blame and isolation (experienced stigma); perceived discrimination; and equity.[16]

Globally, HIV has had negative implications on the achievement of the millennium development goals resulting in poverty, poor education and development and high mortality rates in countries burdened with high HIV prevalence.[17] In 2012, approximately 25 million

people were living with HIV in Sub Saharan Africa, accounting for nearly 70% of the global burden. Zimbabwe has a history of high HIV prevalence, though incidence declined by almost 50 percent between 2001 and 2011 from 1.3% to 0.96 per year.[6] From 2012 - 2014, the prevalence of HIV declined from 15% to 13.7% which is still considered to be high.[18] Sub Saharan countries with high HIV prevalence are characterised by poor economic growth and development including unemployment thus suggesting that HIV is a disease that is embedded in social and economic status inequality.[19] This also suggests that social and structural forces in a community often play an integral role in discriminating people living with HIV.[3, 20]

Efforts to tackle HIV related stigma and discrimination have been constrained by the complexity and deep rooted nature of HIV and the related stigma.[21] Current HIV prevention interventions have spanned from individual psychological interventions to environmental or community interventions. There are other forms of interventions that have resulted in the empowerment of marginalised groups through education, counselling, provision of health services and human rights laws and policies.[3, 22] Despite all these efforts, stigma still remains a major barrier to HIV care.

Understanding HIV related stigma and discrimination is key to HIV epidemic response given that HIV related stigma and discrimination is a barrier to the positive epidemic response. Parker and Aggleton theoretically understood the relationship between pre-existing forms of stigma e.g. gender, sexuality, race , class relations and divisions as a platform for HIV related stigma and discrimination.[21] They link poverty to pre-existing stigma and discrimination to HIV related stigma and discrimination.[13] This paper seeks to further understand and quantify this relationship between socio-economic status and HIV related stigma.

Materials and Methods

Data for this study comes from NIMH Project Accept (HPTN 043), a community randomized trial conducted in two South African sites, and sites in Tanzania, Thailand, and Zimbabwe. The trial took place during 2005-2011 and was designed to measure the efficacy of a community-based model of voluntary HIV counseling and testing. The study design and methods have been desribed in detail elsewhere. [23] The Zimbabwean study site, Mutoko, is a rural community about 145 kms from the capital city of Zimbabwe. As part of the main study, a baseline and post intervention behavioral survey was conducted in 8 Mutoko communities. Households were selected at random within each selected community and one person in the 18-32 years age range was then randomly selected for behavioural assessment. The study was ethically approved by the Medical Research Council of Zimbabwe (reference: MRCZ/A/1130).

The behavioural assessment questionnaire used in this study was administered after five year intervention and it consisted of demographic questions including a psychometric assessment tool, which assessed HIV related stigma and discrimination attitudes of participants on a 4 point Likert scale (1= Agree, 2=Strongly Agree, 3=Disagree 4=Strongly Disagree). Psychometric properties of the scale quantitatively measured the 3 principal components of HIV-related stigma attitudes on subscales: Shame, blame and social isolation (factor 1); perceived discrimination (factor 2) and equity (factor 3). The tool is validated for use in developing countries and it was standardized across diverse cultures, and the methods have been described elsewhere. [16] Briefly, the items in each subscale were summed and standardized by the number of items to create individual mean and median scores, with higher scores (from 0 to 4) indicating more negative attitudes or perceived discrimination. Respondents in the top quartile were considered having high stigma for each sub scale. The 75th percentile cut point was determined based on data from all five sites to enable comparisons of individuals in the top of the distribution of scores across the five sites.

Although the data from all sites is not used in this paper, we have used the 75th percentile cut point to keep the findings comparable.

The first factor looked at stigma attitudes related to labelling, devaluing and isolation of people living with HIV, blame and responsibility of HIV infection of people living with HIV and the isolation of individuals with HIV and their families, employer or community. The second subscale, factor 2, looked at stigma attitudes relating to reported types of discrimination that the community perceive people living with HIV face in their communities. The final subscale, factor 3, focused on reported endorsement of views that people living with HIV are equal members of the society just as those who are HIV free.

The questionnaire included questions about ownership of assets, which were used to assess the socio-economic status for each household and individual respondent.[24]

Statistical Analysis

Using the components of HIV related stigma and discrimination as stated above, logistic regression models were derived for each factor of stigma with SES as the main explanatory variable.

A logistic regression model was derived for factor 1 relating reported stigma attitudes linked to "labelling, devaluing and isolation of people living with HIV, blame for responsibility HIV infection and attitudes regarding isolation of HIV positive individuals". Factor 2 regression model was related to the manifestations of stigma and the discrimination attitudes that community members perceive people living with HIV face in their communities and the regression model for factor 3 was relating to "endorsement of views that people living with HIV should be considered equal members of the community as those who are HIV-free".[16]

For SES, respondents were asked about their ownership of basic assets (refrigerator, television, stove, cell phone, car or truck in working condition, bicycle, motorcycle, livestock, wheelbarrow, scotch cart, radio, access to electricity or tap drinking water in their house) and ranked as low (one or no livestock or wheelbarrow), medium-low (two or more of livestock or wheelbarrow), medium-high (one or more of bicycle/stove) and high (two or more of motorcycle/car truck/refrigerator/cell phone/electricity/tap water). For the ease of interpretation, medium low and medium high categories were merged together as medium. For multivariate analysis, we controlled for age, gender, marital status and level of education for their confounding effects. All analyses were conducted using STATA version 13.0.[25]

Results

There were 2,522 eligible participants aged between 18-32 years who agreed to complete the interview administered post intervention. The median age was 25 years and 45% were males. Most (96%) had received more than 5 years of education and 60% were in paid employment. About a third of participants were single (34.1%), and just over half were married (53.8%). The majority of respondents belonged to high SES (47%), 33% to medium and 20% to low SES.

Shame, blame and social isolation:

Table 1 shows bivariate and multivariate associations between shame, blame and social isolation and other variables. Using bivariate regression, we modelled this stigma scale on SES, age, gender, number of years in education, marital status and whether earned money for work. Stigma was found to be positively associated with medium (OR = 1.73, p <0.01) and low SES (OR = 1.97, p <0.01) in comparison to high SES. Compared to less than 5 years of education, having more than 5 years of education was significantly associated (p <0.01) with lower stigma scores. Results indicate decrease in stigmatizing attitudes with increase in

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education. The odds of males reporting stigmatizing attitudes were 33% (OR= 0.67, p <0.01) lower than that of females. Marital status was also significantly associated with SES as married participants were less likely to report HIV stigmatizing attitudes (OR =0.59) related to shame, blame and social isolation as compared to single/never married participants.

Table 1 also presents the multivariate model, which included indicators found significant at bivariate analysis as cofactors. The results indicate that in comparison to high SES, participants belonging to medium (p <0.01) and low SES (p < 0.01) were more likely to report stigmatizing attitude, when controlling for age, gender, education, marital status and whether earned money for work.

Perceived Discrimination:

Table 2 shows the bivariate and multivariate associations between perceived discrimination and other variables. Low and medium SES were not independently associated with perceived discrimination (factor 2) as compared to participants from a High SES. Compared to participants with less than 5 years of education, participants with five or more years of education were less likely to report discriminating attitudes. Age, marital status and whether one is earning money for work were not significantly associated. When controlled for number of years in education, the multivariate model did not find any significant association between discrimination factor of stigma and SES.

Equity:

The third factor of stigma, equity, was significantly associated with medium (p < 0.05) and low SES (p <0.01) in comparison to high SES in bivariate analysis. However, inclusion of SES in multivariate model with other factors (education, marital status, age, gender and whether earned money for work) rendered the predictors statistically insignificant.

Other factors independently associated with this stigmatising attitude were: being married and earning money for work. When other variables were taken into account, no association was found between stigma and being married; however, earning money for work remained significant.

Discussion

The stigma scale used in the study measured three factors of HIV-related stigma: shame, blame, and social isolation; discrimination; and equity. Findings from this study suggest that socio-economic status is a significant predictor of shame, blame and social isolation (factor 1). This is in keeping with prior findings from resource-poor settings [26, 27] and suggests that the poorest members of society are more likely to have stigmatizing attitudes towards people living with HIV. In a study of community factors' role in shaping HIV related stigma among youth in three African countries, it was found that wealthier household was associated with more supportive attitudes toward HIV,[5] thus supporting our findings.

Findings also reveal that those with primary and less than primary education were more likely to hold stigmatizing attitude than those with higher levels of education. These results are consistent with previous studies that have demonstrated relationships between lower levels of education and HIV-related stigma.[5, 28] A study of contextual influences on HIV-related stigma in China found that respondents who had a lower level of education attainment and media exposure were more likely to hold stigmatizing attitudes towards people with HIV.[29] Similarly, in a study in Ghana, it was found that people without formal education were about three times more likely to have stigmatizing attitudes.[30] Higher level education provides greater opportunities for economic resources to individuals, but also introduces them to new sources of information and greater social-networking, resulting in the reduction of less supportive attitudes toward those with HIV.

We, however, did not find any association between SES and perceived community level discrimination of people living with HIV. The association between the equity factor of stigma was statistically significant in the bivariate model, however, when other variables were taken into account in the multivariate model, the association was not significant.

While people with different socio-economic status, at individual level, have different levels of stigmatizing attitudes towards people living with HIV, the difference in perceived stigmatizing attitudes at community level are not much pronounced. The HIV epidemic in Zimbabwe is older and generalized, and people from all walks of life have been affected by the epidemic in some or the other way. This perhaps explains the significant association between shame, blame and social isolation factor, which is more at the individual level, but not so much in case of discrimination and equity factors.

Limitations:

The data used in this study are cross-sectional in nature, and therefore no assertions can be made about causal pathways. Furthermore, self-reported measures of stigma used are subject to reporting bias since some questions are framed around hypothetical scenarios and their results may have been affected by misclassification and/or social desirability bias.

Conclusions:

SES both at individual and household level is a significant determinant of HIV related stigma and discrimination attitudes. Despite the study limitations, our findings provide critical implications for future HIV related stigma reduction research. Further research is needed to validate the role of socio-economic status in determining the dynamic and complex nature of HIV related stigma and discrimination.

For stigma and discrimination interventions to be effective and successful, they should take into account the socio-economic context of individuals and communities. Formative research on stigma in the communities should be done to help design community specific outreach programmes. Programmes that promote comprehensive HIV and sexual reproductive health should take into consideration the existing social classes if they are to successfully reduce HIV stigma and discrimination. Interventions and policies that facilitate income generating programs to help with economic development of community members and fill gaps in education and knowledge should make a tangible impact on stigma, and should be pursued by policy makers and practitioners.

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Table 1: Association between factor 1 (shame, blame and social isolation) of HIV related stigma attitudes, socio economic status and and demographic factors

Factors	Shame, Blame and Social Isolation - Factor 1 (n=666)		
	n(%)	OR[a] (CI)	AOR[b] (CI)
Age	23yrs	**0.95**** (0.93 0.96)	0.96** (0.94 0.98)
Gender (Female)	318 (47.6)	**0.67****	**0.68**** (0.54 0 .85)
Education *			
<5 years (Ref)	54 (8.1)	-	-
5-10 years	407 (61)	**0.31**** (0.20 0 .48)	**0.33**** (0.21 0.52)
11-12 years	181(27.1)	**0.13**** (0.10 0 .21)	**0.13**** (0.1 0.22)
>=12 years	25 (3.8)	**0.12**** (0.10 0.23)	**0.13**** (0.1 0.25)
Marital Status			
Single (Ref)	281(42.2)	-	-
Married	301(45.2)	**0.59**** (0.49 0.71)	**0.72**** (0.56 0.94)
Separated	22(3)	**0.61*** (0.39 0.95)	0.86 (0.51 1.42)
Divorced	46(7)	1.10(0.73 1.57)	1.13 (0.73 1.75)
Widowed	11(1.7)	0.63(0.32 1.26)	0.66 (0.31 1.42)
Earned money for work	356(54.8)	1.33** (1.12 1.6)	**1.22*** (1.01 1.5)
Household SES			
High (Ref)	240(36)	-	-
Medium	255(38.2)	**1.73**** (1.4 2.13)	**1.52**** (1.22 1.89)
Low	172(25.8)	**1.97**** (1.57 2.48)	**1.76**** (1.37 2.27)

[a] =OR: Odds Ratio; CI: Confidential interval; [b]=AOR: Adjusted Odds Ratio; *: $p < 0.05$; **: $p <0.01$; %: percentage

Table 2: Association between factor 2 (perceived discrimination) of HIV related stigma attitudes, socio economic status and demographic factors

Factors	Perceived Discrimination - Factor 2 (n=779)		
	n(%)	OR[a](CI)	AOR[b](CI)
Age	25 yrs	1.0 (1.003 1.04)	
Gender (Female)	417 (53.5)	0.91(0.77 1.1)	
Education *			
<5 years (Ref)	38 (4.9)	-	-
5-10 years	384 (49.3)	**0.60** (0.38 0.92)	0.59** (0.38 0.92)
11-12 years	300 (38.5)	**0.53** (0.34 0.83)	0.54** (0.34 0.84)
>=12 years	57 (7.3)	0.78 (0.46 1.3)	0.79 (0.46 1.4)
Marital Status			
Single (Ref)	252 (32.4)	-	
Married	425 (54.6)	1.1(0.91 1.31)	
Separated	39 (5)	1.18 (0.78 1.78)	
Divorced	48 (6)	1.33 (0.91 1.95)	
Widowed	15 (2)	1.13(0.60 2.13)	
Earned money for work	483 (62)	0.89(0.74 1.1)	
Household SES			
High (Ref)	359 (46)	-	-
Medium	258 (33)	1.03 (0.8 1.3)	1.03 (0.85 1.23)
Low	162 (21)	1.05 (0.8 1.3)	1.03 (0.8 1.29)

[a] =OR: Odds Ratio; CI: Confidential interval; [b]=AOR: Adjusted Odds Ratio; *: $p < 0.05$; **: $p < 0.01$; %: percentage

Table 3: Association between factor 3 (equity) of HIV related stigma attitudes, socio economic status and demographic factors

Factors	Equity - Factor 3 (n=685)		
	n(%)	OR[a](CI)	AOR[b](CI)
Age	23yrs	**0.95**** (0.93 0.97)	**0.95**** (0.93 0.97)
Gender (Female)	356 (52)	0.84* (0.71 1.01)	**0.76**** (0.64 0.98)
Education			
<5 years (Ref)	46 (6.7)		
5-10 years	415 (60.7)	**0.46**** (0.30 0.71)	0.48** (0.31-0.75)
11-12 years	195(28.5)	**0.21**** (0.13 0.33)	0.21** (0.13-0.33)
>=12 years	29 (4.2)	**0.21**** (0.12 0.38)	0.23** (0.12-0.41)
Marital Status			
Single (Ref)	255 (37.2)	1	
Married	330 (48.2)	**0.76*** (0.63 0.93)	1.01 (0.78 1.31)
Separated	39 (5.7)	1.16 (0.77 1.75)	**1.68*** (1.06 2.69)
Divorced	47 (7)	1.27 (0.87 1.86)	1.47 (0.96 2.27)
Widowed	13 (2)	0.91 (0.36 0.49)	1.17 (0.57 2.42)
Earned money for work	369 (54)	**1.34**** (1.17 1.67)	**1.29**** (1.08 1.57)
Household SES			
High (Ref)	285 (41.6)	1	
Medium	237 (34.6)	**1.25*** (1.03 1.53)	1.06 (0.86 1.31)
Low	163 (23.8)	**1.46**** (1.2 1.8)	1.21 (0.95 1.55)

[a] =OR: Odds Ratio; CI: Confidential interval; [b]=AOR: Adjusted Odds Ratio; *: $p < 0.05$; **: $p < 0.01$; %: percentage