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HIV stigmatizing attitudes among men accompanying their partners to antenatal care in Tanzania: A mixed-method study

Godfrey A. Kisigo^{1,2}, James S. Ngocho^{4,5}, Rimel N. Mwamba¹, Brandon A. Knettel^{1,3}, Michael V. Relf^{1,3}, Blandina T. Mmbaga^{1,2,4,5}, Melissa H. Watt^{1,6}

¹Duke Global Health Institute, Duke University, Durham, NC

²Kilimanjaro Clinical Research Institute, Moshi, Tanzania

³School of Nursing, Duke University, Durham, NC

⁴Kilimanjaro Christian Medical Centre, Moshi, Tanzania

⁵Kilimanjaro Christian Medical University College, Moshi Tanzania

⁶Department of Population Health Sciences, University of Utah, Salt Lake City, Utah

Abstract

This mixed-method study aimed to describe HIV stigmatizing attitudes, identify factors associated with stigmatizing attitudes, and explore the broader context of HIV stigma among men accompanying their pregnant female partners to antenatal care in Tanzania. The study recruited 480 men who were attending a first antenatal care appointment with their pregnant female partners. Participants completed a structured survey; a subset of 16 men completed in-depth interviews. The majority of participants endorsed at least one of the stigmatizing attitudes; the most common attitude endorsed was the perception that HIV is a punishment for bad behaviour. In a multivariable logistic analysis, men were more likely to endorse stigmatizing attitudes if they were younger, less educated, Muslim, did not know anyone with HIV, or reported less social support. In the qualitative interviews, men discussed how HIV was antithetical to masculine identities related to respect, strength, independence, and emotional control. Future studies should develop and test interventions to address HIV stigmatizing attitudes among men, taking advantage of settings of routine HIV testing. These programs should be tailored to reflect masculine ideals that perpetuate stigma.

Correspondence: Correspondence concerning this article should be addressed to Melissa Watt at melissa.watt@hsc.utah.edu. Address: University of Utah, Salt Lake City, Utah 84132.

Compliance with Ethical Standards

Conflict of Interest: The authors declare that they have no conflict of interest.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study protocol was reviewed and approved by the ethical review boards at Duke University (Protocol D0371), University of Utah (Protocol 00127605), Kilimanjaro Christian Medical University College (No. 915), and the Tanzanian National Institute for Medical Research (NIMR/HQ/R.8a/Vol. IX/2882). All participants provided informed consent.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Keywords

Tanzania; HIV; Stigma; Men; Masculinity

Introduction

HIV-related stigma is a barrier to the success of programs targeting the prevention and treatment of HIV [1,2]. Stigma is defined as an “attribute that is deeply discrediting” and that reduces the bearer “from a whole and usual person to a tainted, discounted one” [3]. Stigma negatively impacts outcomes across the HIV care continuum, from uptake of HIV testing to viral load suppression, virus transmission, and mortality among people living with HIV [4]. Fear of HIV-related stigma leads people to avoid testing for HIV, and individuals who are diagnosed with HIV may refrain or delay to initiate HIV care [5,6]. Stigma may also hinder HIV disclosure to sexual partners, which increases the risk of forward transmission of HIV [7]. At the same time, people living with HIV suffer from the manifestations of stigma, including social judgment and discrimination, which often leads to poor treatment adherence [8]. Collectively, these circumstances drive the persistent spread of the HIV epidemic [6]. Without addressing HIV-related stigma, the elimination of the HIV epidemic will remain an unreachable ambition.

Among individuals who are HIV negative or unaware of their status, HIV stigmatizing attitudes (i.e., personal negative attitudes towards people living with HIV) are shaped by norms and experiences at the individual and community levels [9,10]. HIV stigmatizing attitudes are expressed in two ways: through blame and moral judgment; and through social distancing from people who are known or suspected to be living with HIV. Both expressions of HIV stigmatizing attitudes have common roots: 1) the early metaphors of the HIV epidemic (e.g., HIV is equal to death), 2) individual and community knowledge on HIV transmission (e.g., the misconception that HIV can be transmitted via casual contacts), and 3) societal beliefs and religious practices (e.g., believing HIV is punishment for bad behavior) [11–13]. Among individuals and communities where stigmatizing attitudes are prominent, people living with HIV more likely to face discrimination, social rejection, abandonment, and even violence [6,14].

In many societies in Sub-Saharan Africa, where the majority of HIV cases are located [15], men are expected to assume leadership roles in the family and community, and therefore play a critical role in defining and shaping social constructs [16]. This position gives men the power to determine and influence the social, political, and economic organization of society, and to shape norms around identities such as HIV. As the men hold privilege in establishing social and gender norms, those norms also create vulnerability, contribute to toxic ideas of masculinity, and can perpetuate risky health behaviours, giving rise to reduced health-seeking behaviour among men [17–19]. Masculinity, when combined with the manifestations of HIV stigmatizing attitudes, may severely hamper HIV testing, prevention, and treatment among men and the general population. As a result, there is an urgent need to develop “gender-responsive” interventions that address the unique challenges of men and substantively engage men in HIV programming [18]. This will reduce HIV

stigma that creates barriers to HIV care, and involve men as advocates who challenge barriers associated with HIV stigma in the community and ultimately encourage uptake of HIV testing and treatment. Male engagement in HIV stigma reduction efforts can have measurable impacts for men themselves, and can also improve the outcomes for their female partners, who often note partner-related barriers to their own HIV care engagement [20,21].

Despite the importance of men in understanding and addressing HIV stigma, there is limited knowledge of how social and personal attributes influence HIV stigmatizing attitudes among men in Sub-Saharan Africa. This study was conducted among men accompanying their female partner for HIV testing in antenatal care (ANC) in Tanzania, with three aims: (1) to describe HIV stigmatizing attitudes, (2) to identify factors associated with stigmatizing attitudes, and (3) to explore the broader context of HIV stigma among men in Tanzania.

Methods

Overview

This mixed-method study involved 480 men who were enrolled in a pilot randomized control trial of Maisha, a stigma-based counselling intervention among women and their partners presenting for ANC in Moshi, Tanzania [22]. The study analysed data from baseline surveys completed by men enrolled in the trial prior to randomization, and purposively selected a subset of 16 men to complete additional in-depth interviews. Surveys were completed between April and September 2019, while in-depth interviews were conducted between June and August 2019.

Setting

The study was conducted in the ANC clinics of two public primary health care facilities in Moshi municipality, Tanzania. The two study sites together serve approximately 2500 pregnant women per year. Both clinics were following the national guidelines for prevention of mother-to-child transmission of HIV (PMTCT), which strongly encourages pregnant women to bring their male partners during the first ANC visit for pregnancy education and HIV couple testing and counselling (Tanzania Ministry of Health and Social Welfare, 2013). As a result, approximately 70% of pregnant women in our study clinics attended their first ANC appointment with their male partner.

Participants

Men accompanying their pregnant partners to a first ANC appointment were invited to participate in the study if their partner agreed to enrol in the clinical trial. Male participants were eligible to participate if they were at least 18 years of age, fluent in Swahili, and cognitively able to provide consent. Only men who self-reported on the survey to be HIV-negative or did not know their HIV status were included in the analysis of this study. The study was introduced to the couples by the nurse at the ANC before HIV counselling and testing. If a couple expressed interest in participating in the study, they were referred to the study team to receive additional information, confirm eligibility, and complete informed consent procedures.

Procedures

Upon enrolment and before attending ANC procedures, participants completed a structured survey using audio computer-assisted self-interview (ACASI) technology on tablets running Questionnaire Development System (QDS) software [23]. This technology allowed participants to simultaneously read and listen to questions and response options, and then select their preferred response. The ACASI modality was used to protect the privacy of participants and minimize social desirability bias [24]. While completing a survey or interview, participants were given snacks and drinks, and after completing study procedures, they were given 2000 Tanzanian shillings (approximately \$1 USD) for lunch. All study procedures were implemented in a private room located within health facility premises.

In-depth interviews

For the qualitative in-depth interviews, we purposively recruited men with different socio-demographic characteristics, and who could provide insights on community-level stigma. Thus, to identify suitable men for the in-depth interview, we developed a selection criteria guide to ensure an equal distribution of men with low and high stigmatizing attitudes scores on the structured survey, and to ensure some representation of diverse demographic characteristics. In addition, we consulted research assistants who had interacted with participants in administering the structured survey to identify potential candidates who they thought would be willing and able to talk on this topic.

At the outset of the study, we set a goal of interviewing 16 men, as we anticipated that 10–20 participants would be required to reach thematic saturation for our research objective [25]. After completing 14 interviews, we determined that data saturation was attained, and completed the remaining two interviews to confirm the saturation, thus ensuring the credibility, confirmability, and dependability of collected data. Participants completed the in-depth interview approximately two to four weeks after completing their baseline survey. The interviews were conducted in Swahili by the first author, a Tanzanian researcher who had graduate level training in qualitative research and previous experience in conducting qualitative interviews. Interviews took approximately one hour, were audio-recorded with the participant's consent, and an incentive of 5000 Tanzanian Shillings (approximately USD 2.50) was provided per interview. Following the completion of the interview, the audio files were transcribed verbatim and translated into English by a translator who was fluent in English and Swahili.

Qualitative interview guide

The development of the semi-structured interview guide was informed by a literature review and past observational data collected in the ANC setting [7]. The guide included open-ended questions and probes related to HIV testing and counselling experiences, stigma practices at an individual and community level, and thoughts about the unique experiences of being a man with HIV (Table 1). Each section of the guide began with a broad opening question, followed by more detailed potential probes to be used to explore the topic in greater depth, based on the participant's responses.

Measures

The structured survey included the following constructs. All measures were translated from English into Swahili and then back-translated and discussed to reach consensus on best translation.

HIV stigmatizing attitudes—To measure stigmatizing attitudes, we used a modified 18-item version of Personal Stigma Scale, referred to as the HIV Stigma Attitudes Scale (HSAS) in this study. The original scale includes two subscales: blame/judgment and interpersonal distancing [26], which are considered core components of HIV stigma in an African context [27,28]. Fourteen of the 17 items from the original scale [26] were included; the three remaining items were adapted for the local context, and one new item was identified and added based on formative research [22]. After we completed a pilot of the measure with 88 individuals, the HSAS underwent further minor edits and considered final (see Table 4 for the item list). Responses were answered on a 4-point Likert scale that ranged from 0 (strongly disagree) to 3 (strongly agree), with a possible total score range of 0–54 ($\alpha=0.922$). For analysis, we used the sample mean score of 14 as a cut-off to dichotomize men with low versus high stigma attitudes.

Perceived social support—To measure perceived social support that participants gained from their social networks, we used the Perceived Availability of Social Support Scale (PASS) [29]. The PASS includes 8 items that probe different types of support (e.g., “Is there someone who would help take care of you if you had to stay in bed for several weeks?”). Each item was answered on a 4-point Likert, from 0 (not at all) to 3 (yes, very likely). The items were summed and used as a continuous measure with a range of 0 to 24 ($\alpha=0.883$).

Contact with people living with HIV—To assess the level of contact with people living with HIV (PLWH), participants were asked to answer six yes/no questions. These questions explored contact with PLWH, ranging from a familial relationship (e.g., “Have you ever had a family member who was HIV positive?”) to the community at large (e.g., “Have you ever known anyone else who was HIV positive?”). Men were categorized into two groups; “no contact” if they answered no to all questions, and “some level of contact” if they answered yes to any question.

Demographics and HIV information—The survey included questions about age, highest level of education attained, marital status, religion, area of residence, and source of monthly income. Questions were also asked about prior experience with HIV testing, awareness of own and sexual partner’s HIV status, and willingness to test for HIV in the future.

Analysis

Quantitative analysis—Analysis was performed in multiple steps to address each of the study aims using Stata SE 15 software [30]. First, we classified participants into two groups based on their HSAS total score using 14 as a cut-off (i.e., an overall score of below 14 = low stigma; a total score of 14 and above = high stigma). We then described the distribution of stigmatizing attitudes across demographic descriptors (e.g., age categories, education,

previous HIV testing experience). To further describe the scale, each of the 18 items in the stigmatizing attitudes scale was dichotomized by combining strongly agree and agree into first level response (i.e., agreement with the statement), and the proportion of the sample who expressed agreement with each item was described. Second, we identified factors that were associated with high stigmatizing attitudes. Each factor we hypothesized to have an association with stigmatizing attitudes was first considered as a univariable predictor of high stigmatizing attitudes. Then, factors with a p-value of <0.1 from the univariable analysis were entered into multivariable backward stepwise logistic regression models to determine factors that were associated with high stigmatizing attitudes. We used mean square error (MSE) and a change of parameter estimates (i.e., odds ratios and confidence intervals) to determine the importance of each factor and the strength of its association with stigmatizing attitudes.

Qualitative analysis—In-depth interview data were analysed using applied thematic analysis [31] with an emphasis on qualitative memo writing [32]. The applied thematic approach is a rigorous set of inductive procedures designed to identify and examine themes from textual data in a way that is transparent, reproducible, and credible. After multiple readings of the transcripts, document memos were written by two individuals [GAK, RNM] to organize and summarize key information for each individual interview. Each transcript/memo pair was discussed and revised with the other analyst, in order to confirm the completeness and rigor of the memos. Memos followed an established template of a priori domains, informed by the interview guide, to extract and synthesize the core meaning from text related to the research questions and to pull out representative quotes. On average, each full transcript represented 20 pages of single-spaced text and was condensed to 5 pages of text in the memo writing process. Through memo writing process, we identified emerging themes which informed the development of a structured codebook focused on understanding the intersection of masculinity and HIV stigma. The 16 document memos were uploaded to NVivo software and coded using the final codebook. After coding, code-level queries were run, and analytic memos were written to synthesize the content, make comparisons across participant characteristics, and draw deeper meaning on each theme.

Results

Survey findings

Description of sample—Of the 480 men who completed the survey, the mean age and SD was 30 ± 7 years. Most participants were married (69%, n=334) and had no steady source of income (70%, n=339). A majority (67%, n=324) said they had tested for HIV at least once in the past, and almost all (90%, n=429) reported that they were likely to test for HIV again in the coming year. The detailed demographic characteristics of the study participants are presented in Table 2.

HIV stigmatizing attitudes—Table 3 summarizes how participants responded to the 18 items for HIV stigmatizing attitudes. The majority (72%, n=350) endorsed at least one of the stigmatizing attitudes. The most commonly endorsed items in the blame and judgement domain were: HIV is a punishment for bad behaviour (37%, n=176) and people with HIV

must have done something wrong to get it (28%, n=134). The most commonly endorsed items in the interpersonal distance attitudes domain were: not wanting someone with HIV to look after their child (28%, n=134) and not wanting their child to play with a child who has HIV or whose parents have HIV (27%, n=133).

Predictors of HIV stigmatizing attitudes—Table 4 reports the estimates of the univariable and multivariable logistic regression analyses of social and behavioural predictors of HIV stigmatizing attitudes. In univariable models, men with only primary education were twice as likely as those with secondary or high to hold high stigmatizing attitudes (OR=2.22, 95% CI [1.54, 3.20], $p<0.01$); men with no prior contact with PLWH had 1.90 times (95% [CI 1.32, 2.75], $p<0.01$) odds of having high stigmatizing attitudes than those with prior contact with PLWH; and those with Islamic religion had 1.57 times (95% [CI 1.09, 2.25], $p=0.01$) odds of endorsing high stigmatizing attitudes compared with Christian religion. An increase in perceived availability of social support was associated with a significantly lower likelihood of having stigmatizing attitudes (OR=.94, 95% [CI 0.91, 0.97], $p<0.01$).

In the final multivariable model, the factors associated with stigmatizing attitudes were: younger age (OR=1.54, 95% [CI 1.01, 2.37], $p=0.05$), primary education or less (OR=2.05, 95% CI [1.39, 3.04], $p<0.01$), Muslim religion (OR=1.49, 95% CI [1.03, 2.15], $p=0.03$), no prior contact with PLWH (OR=1.52 95% [CI 1.03, 2.23], $p=0.03$), and social support (OR=.95, 95% CI [0.92, 0.99], $p=0.01$). Marital and source of income status were not significant predictors of stigmatizing attitudes in either model.

Qualitative findings

Description of the sample—In comparison to the survey sample, the 16 participants who participated in an in-depth interview were more likely to have had previous testing experience (n=12, 75%), to have a secondary education (n=9, 56%), to have prior contact with PLWH (n=9, 56%), and to report being Christian (n=12, 75%). Individual-level details of the 16 participants who completed in-depth interviews are presented in Table 5.

Emergent themes—Three broad themes emerged in the qualitative data analysis. The first theme, named ‘living with HIV as a devastating new reality,’ represents the hypothetical experiences of men living with HIV. The second theme, named ‘PLWH as a threat,’ represents the fear-based and stigmatizing views of men towards people living with HIV. The final theme, named ‘HIV testing as a step toward behaviour change,’ represents the experiences of men with HIV testing and how receiving a negative HIV test result can influence positive behaviour change.

Living with HIV represents a devastating new reality

HIV is a threat to masculine identity. When asked about the hypothetical scenario of receiving a positive HIV test result, men spoke about how their lives and their position in society would be inevitably harmed if they were identified as living with HIV. Among the salient reactions was the anticipation of being perceived as less of a ‘real man’. This notion

was supported with speculation that HIV will limit their physical strength, will take away their respect in the society, and will create a new, less masculine identity (i.e., otherness).

Some of them will disrespect him [person living with HIV]. And even if you have a family meeting, if this person begins to speak and he says something that is a big point, still the others will regard the point as meaningless. (PID 02; High stigma)

[Living with HIV] is as if you are a different person, a photocopy of you. You know, when you make a photocopy of a paper the copy is not like the original; so it's something like that. I mean you become a somewhat different person and they will stigmatize you in many ways. (PID 07; No or low stigma)

HIV is a man's misfortune. Although participants acknowledged that HIV can be effectively managed with antiretroviral therapy (ART), the thought of living with HIV provoked a sense that dreams would be squashed, and life would be over. HIV was perceived to be a barrier towards prosperity via multiple pathways, including an inability to concentrate on work, a lack of motivation, and disconnection from income-generating peer networks.

To be frank, that was my main fear; thinking that this [HIV] would have affected my activities and when I looked at myself being a young man, having a problem like this would have meant that my dreams would be smashed because I wouldn't have been able to perform my work properly; this would have affected my mind. (PID 08; No or low stigma)

Men are more stigmatized because even at the place of work, cooperation is weak. Once they discover that he has HIV, the community around him, in the street or at the place of work, will avoid him in many areas, saying 'we should avoid this man because he's got the drum [metaphor for HIV]'. (PID 10; No or low stigma)

View of PLWH as a threat to the broader community

PLWH are incompatible with reproduction. Several men asserted that they would end their intimate relationship or marriage if a female partner were to learn she had HIV. This decision was driven by a fear of being infected with HIV or transmitting the virus to their children. Most men reported to want more children, which they saw as incompatible with protecting themselves from HIV.

You might want a second child. How are you going to do it? You would have a constant fear that if you do it [condomless sex] you will get it [HIV] ...this fear will be in your soul. (PID 01; No or low stigma)

PLWH are untrustworthy. Some men reported that PLWH are perceived by the society as deceitful and harmful. This perception appeared to be driven by anecdotes of PLWH who intentionally sought to spread HIV to others in the community. As a result, men expressed attempts to distance their loved ones from PLWH who were perceived to be emotionally unstable and willing to purposively spread HIV if triggered.

I think that it is the evil that is in the human heart. ... People like that, when they know that they are infected with HIV, they might deceive your child and sleep with her or him just to infect your child, just because he did something that made him angry. (PID 05; High stigma)

PLWH got what they deserve.: Participants described how the mode of HIV transmission and behaviour of a person determines how society reacts toward an individual living with HIV. For those individuals who are perceived to be promiscuous, participants felt it is morally acceptable to withhold empathy towards them after they are infected with HIV. Participants extended this same opinion to themselves, asserting that they would not feel sorry for themselves if they were to get HIV through sexual risky behaviour.

For example, if you used to sleep around with different people... If you contract HIV, all the people will disrespect you. They will say you got what you deserved. (PID 03; High stigma)

You would have felt badly if you did not do things that would've caused this (your HIV status). But if you were sleeping around, then it would be right to receive what comes your way. (PID 02; High stigma)

HIV testing as a step toward behaviour change

Fear of HIV testing.: The majority of men reported experiencing heightened anxiety while testing for HIV for the first time. This fear was mainly driven by their own perceived risks for HIV based on their sexual behaviours, including having multiple sexual partners and unprotected sex. Some of the men noted that they avoided testing with their partners to prevent shame if they were identified as living with HIV.

At first, it was a problem. As you well know, we young people have passed many places [multiple sex partners] and did many things [including unprotected sex]. Now you ask yourself, 'how many places have I been to, and what are the consequences?' If I take the test and the results turn out to be positive, that I am infected, I will have a very hard time. (PID 01; No or Low stigma)

HIV Negative results as a motivation for positive behaviour change.: After receiving HIV negative test results, most of the men aspired to reduce their risk behaviour in the future for the sake of their health and that of a partner. For example, a few participants acknowledged that they had engaged in infidelity after drinking alcohol, and they wanted to avoid this happening again in the future. This motivation to change was often facilitated by critical moments of reflection during the HIV testing experience and a recommitment to their role as a family leader.

[After the results came out negative] I decided to stop drinking and stand as the head of the family. (PID 12; No or Low stigma)

All men reported that after testing for HIV for the first time, they became willing to test more frequently. Several men described receiving a negative result as a good experience associated with confidence and peace of mind. Thus, each HIV test with a seronegative result was a motivation for testing in the future.

[During follow-up test] ... I was feeling good. ... And when I was in [town name] I used to test often because there the health testing is done free of charge. (PID 07; No or Low stigma)

Discussion

This study sought to describe HIV stigmatizing attitudes, to identify factors associated with stigmatizing attitudes, and to explore the broader context of HIV stigma among men undergoing HIV testing in the Kilimanjaro region in Tanzania. We found that personal attitudes that promote moral judgement and social distancing toward PLWH were common among men. Men were more likely to endorse stigmatizing attitudes if they were younger, less educated, Muslim, did not know anyone with HIV, or had less social support. These findings highlight the persistence of HIV stigmatizing attitudes among men in the community, despite several decades of campaigns to raise education and reduce stigma toward PLWH.

Our survey results demonstrated that men who have no contact with people living with HIV are more likely to hold high stigmatizing attitudes compared to those with some level of contact. Contact with PLWH has the potential to produce positive attitudes towards individuals with HIV, suggesting the need for role models of individuals living openly and confidently with HIV [33,34]. At the same time, it is imperative to support PLWH to disclose their status to trusted individuals. Previous studies [35–37] have shown that disclosure most often leads to improved social support and positive outcomes, although there are instances where disclosure contributes to harmful responses such as abandonment or violence. With these factors in mind, HIV testing and counselling should seek to provide targeted education and support for disclosure decision-making among PLWH. When PLWH feel more empowered to disclose their status, the proportion of community members who know someone living with HIV will increase, which has the potential to impact stigmatizing attitudes [38]. It should be noted, however, that context, frequency, and type of contact to people with HIV might have a differential influence on stigma attitudes [8]. This concern is essential for men who, because of gender roles, are frequently less involved in caretaking for PLWH when they are sick [39,40].

Narratives from the in-depth interviews suggest that prevailing notions of masculinity contribute to and perpetuate HIV stigmatizing attitudes. Even though most men expressed knowing that ART medications were universally available and can contribute to a long and healthy life, living with HIV was perceived to be a serious disability that hampers productivity and longevity. Participant views about the prospects of living with HIV mirrored prior research, where the virus was perceived to threaten masculine identities related to respect, strength, independence and emotional control [41,42]. In the process of protecting their masculine identities, men are predisposed to avoid HIV testing and delay care initiation if they are identified as being seropositive. It can, therefore, be assumed that men will be motivated to engage with HIV testing and treatment services if those services are designed to reflect and support positive masculine identities such as success, power, and competition [18,43]. This idea could be achieved by promoting HIV testing and treatment as a way of preserving good health that can enable a man to take care of the family.

It is interesting to note that men who had high levels of social support in this study were less likely to hold HIV stigmatizing attitudes. It can thus be suggested that a sense of feeling supported and belonging in your social network may evoke more empathy for others and reduce concerns about losing one's own status in the event of a positive HIV test. Further research is required to establish the mechanism by which perceived support influences HIV stigma attitudes. This knowledge could be used to enhance programs that leverage social networks to promote HIV prevention and treatment among men. Likewise, the association of high stigmatizing attitudes with younger age and less education observed in this study highlights the need to target the youth. Since primary education is nearly universal in Sub Saharan Africa [44], an introduction of HIV in the curriculum may help to reduce HIV stigma in young men [45]. Although our study survey did not examine a participant's level of exposure to the religious doctrine, we found that men who identified themselves as Muslims were more likely to have high stigmatizing attitudes compared to Christians. Future studies on the process of how religious identification influences HIV stigma attitudes are recommended to inform the development of stigma reduction intervention focusing on religion.

This study has several limitations that must be considered. First, all men were recruited from antenatal clinics, where they had willingly presented with their pregnant partners to undertake HIV couple testing and counselling. As noted in our results, the HIV testing experience influences men to reflect on behaviour change to reduce HIV risk. Given that we interviewed men one month after HIV testing at ANC, is likely that the recent testing experience (and their HIV negative test results) influenced their attitudes and perspectives toward PLWH. We were not able to recruit men who did not accompany their pregnant female partners to ANC. These men may have declined to attend the ANC appointment because they were hesitant to get tested for HIV, which would likely be accompanied by a different set of attitudes and perspectives about PLWH. Second, our findings are based on cross-sectional data. Therefore, associations that have been identified should not be interpreted as a causal relationship and directionality cannot be assumed. Third, men's responses to the survey and opinions reported during interviews are likely to be affected by social desirability bias given the sensitivity of HIV stigma. Although the use of ACASI technology has been shown to minimize the effect of social desirability significantly [46], men may have felt uncomfortable being honest about their attitudes toward PLWH. Lastly, we did not interview men known to be living with HIV. Therefore, we could not get their perspective on the broader context of HIV and stigmatizing attitudes. Similarly, some of the socio-demographic characteristics were not evenly represented in the sub-set of men who were interviewed. Their under- or over-representation could have introduced biases in the narratives reported by men in this study.

Conclusion

HIV stigmatizing attitudes are prevalent among men accompanying their pregnant female partners to antenatal care in Tanzania, and masculine identity contributes to these stigmatizing attitudes. In this setting, men who were younger, less educated, Muslim, did not know anyone with HIV, or reported less social support were more likely to hold stigmatizing attitudes toward PLWH. Future studies should develop and test interventions to address HIV

stigmatizing attitudes among men, taking advantage of antenatal care as a setting to reach men. These programs should be tailored to reflect masculine ideals that perpetuate stigma.

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Table 1.

Structure of the in-depth interview guide.

HIV Testing experience

Feelings about getting the HIV test

Feelings after getting HIV test results

Plan for further HIV testing in the future

Personal and community attitudes towards people living with HIV

Attitudes (self and community) toward people living with HIV

How men perceive and talk about people living with HIV

Discussion about a hypothetical neighbor who has HIV

Discussion about a hypothetical situation in which participant is diagnosed with HIV

Thoughts on HIV status disclosure

Thoughts on potential relationship between gender and stigmatizing attitudes

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Table 2.

Demographics, HIV related experiences, and psychosocial measures by the level of HIV stigma (N=480).

	Total N=480	Low stigma ^a n=245 (51.7%)	High stigma ^a n=229 (48.3%)
<i>Socio-demographics</i>			
Age			
18–25	139 (29.0%)	62 (45.6%)	74 (54.4%)
26 +	341 (71.0%)	183 (54.1%)	155 (45.9%)
Education			
Primary or less	253 (52.7%)	107 (42.8%)	143 (57.2%)
Secondary or higher	227 (47.3%)	138 (61.6%)	86 (38.4%)
Marital status ^b			
Married	334 (69.7%)	172 (52.0%)	159 (48.0%)
Unmarried	145 (30.3%)	72 (50.7%)	70 (49.3%)
Religion			
Christian	232 (48.3%)	132 (57.6%)	97 (42.4%)
Muslim	248 (51.7%)	113 (46.1%)	132 (53.9%)
Steady source of income			
No	339 (70.6%)	172 (51.7%)	161 (48.3%)
Yes	141 (29.4%)	73 (51.8%)	68 (48.2%)
<i>HIV related experience</i>			
Previously Tested for HIV			
No	156 (32.5%)	75 (48.4%)	80 (51.6%)
Yes	324 (67.5%)	170 (53.3%)	149 (46.7%)
Partner tested for HIV			
No or Don't know	183 (38.1%)	82 (45.8%)	97 (54.2%)
Yes	297 (61.9%)	163 (55.3%)	132 (44.7%)
Likelihood to test for HIV again in the next year ^b			
Not likely	47 (9.1%)	21 (44.7%)	26 (55.3%)
Likely	429 (90.1%)	223 (52.3%)	203 (47.7%)
Prior Contact with PLWH			
No contact	200 (41.7%)	82 (42.1%)	113 (57.9%)
Some level of contact	280 (58.3%)	163 (58.4%)	116 (41.6%)
<i>Social Support</i>			
PASS ^c	16.0 (5.51)	16.9 (5.46)	14.9 (5.40)

^a mean score of HSAS scale of six (6) participants could not be calculated due to non-response to more than four (4) items of HSAS^c Continuous measure mean (standard deviation)

Table 3.Agreement with items in the HIV stigmatizing attitudes scale (N = 480^{*}).

	n	%
<i>Blame and judgement</i>		
Getting HIV is a punishment for bad behaviour	176	37.0%
People with HIV must have done something wrong to get it	134	28.0%
People with HIV have only themselves to blame for getting HIV	116	24.2%
I would be ashamed if someone in my family has HIV	114	23.9%
People with HIV should feel ashamed about having HIV	87	18.2%
I would think less of someone if I found out the person has HIV	78	16.4%
<i>Interpersonal distancing</i>		
I would not want someone with HIV to look after my child	134	28.2%
I would not want my child to play with a child who has HIV or whose parents have HIV	133	27.9%
I would not want to buy food from someone I know has HIV	116	24.4%
I do not want to get too close to someone with HIV because I am afraid, I might get infected with HIV	113	23.8%
If a relative of mine became ill with HIV, I would not want to care for that person in my home	105	22.1%
I would not employ someone with HIV	101	21.2%
I would not eat together with someone I knew had HIV	101	21.2%
I feel uncomfortable around someone with HIV	88	18.5%
I would be upset if someone with HIV moved in next door to me	85	17.8%
I would not like to be friends with someone with HIV	84	17.6%
If a teacher has HIV but is not sick, she should not be allowed to continue teaching in the school	83	17.5%
If I was in public or private transport, I would not like to sit next to someone with HIV	76	16.0%

* N varies across items because of non-response/refusal

Table 4.

Factors associated with high HIV stigmatizing attitudes among men.

	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
<i>Socio-demographics</i>		
Age		
18–25	1.41 (0.95, 2.11)	1.54 (1.01, 2.37) *
[ref: 26+]	1	1
Education		
Primary or less	2.22 (1.54, 3.20) ***	2.05 (1.39, 3.04) ***
[ref: Secondary or higher]	1	1
Religion		
Muslim	1.57 (1.09, 2.25) *	1.49 (1.03, 2.15) *
[ref: Christian]	1	1
Source of income		
Steady	0.98 (0.66, 1.45)	1.15 (0.77, 1.74)
[ref: Unsteady]	1	1
Marital status		
Unmarried	1.02 (0.69, 1.50)	1.04 (0.68, 1.59)
[ref: Married]	1	1
<i>HIV-related experiences</i>		
Contact with PLWH		
No contact	1.90 (1.32, 2.75) ***	1.52 (1.03, 2.23) *
[ref: Some level of contact]	1	1
<i>Psycho-social measure</i>		
Perceived social support	0.94 (0.91, 0.97) ***	0.95 (0.92, 0.99) **

* p value <0.05

** p value <0.01

*** p value < 0.001

Table 5.

Description of the sample of men completed in-depth interview (n=16).

ID	Age	Relationship status	Highest Education	Occupation	Prior HIV testing	Contact with PLWH	HIV stigma level
01	34	Unmarried	Secondary	Self-employed	No	Some level	No or low
02	35	Married	Primary	Self-employed	Yes	Some level	High
03	24	Unmarried	Secondary	Self-employed	Yes	No	High
04	24	Unmarried	Secondary	Employed	Yes	No	High
05	45	Cohabiting	Primary	Peasant farmer	Yes	No	High
06	38	Married	Primary	Self-employed	No	No	No or low
07	31	Married	Secondary	Peasant farmer	Yes	No	No or low
08	27	Cohabiting	Primary	Self-employed	Yes	No	No or low
09	37	Married	Primary	Employed	Yes	Some level	No or low
10	26	Cohabiting	Primary	Employed	No	Some level	No or low
11	29	Married	Secondary	Peasant farmer	Yes	Some level	No or low
12	45	Married	Primary	Self-employed	Yes	Some level	No or low
13	25	Married	Secondary	Self-employed	Yes	No	High
14	33	Married	College	Self-employed	Yes	No	High
15	22	Married	Secondary	Self-employed	Yes	Some level	High
16	24	Cohabiting	Secondary	Employed	No	No	High