The Impact of HIV/AIDS-Related Stigma, HIV Transmission Knowledge, and Gender on Familial Support for People Living with HIV/AIDS: Implications for the "Test and Treat" Intervention in Fiji

Shazna M. Buksh

School of Law and Social Sciences, The University of the South Pacific.

shazna.buksh@usp.ac.fj

Abstract

Fiji aims to address the growing threat of HIV infections through the "test and treat" strategy which presupposes that Fijians will readily take part in testing and treatment of HIV. However, recent data indicates that uptake of testing and treatment continues to be very low within the Fijian population. This study looked at three key variables which are known to impede uptake of testing and adherence to treatment regimens; HIV knowledge, three types of HIV/AIDS-related stigma (fear-driven [FS], value-driven [VS], and anticipated secondary stigma [SS]), and familial support with 300 postsecondary students from Fiji. While knowledge of modes of transmission of HIV (KHIV) was high, participants had poor knowledge of the impact of HIV treatment on the quality of life of people living with HIV/AIDS (PLWHA). Furthermore, high KHIV was associated with low levels of FS and VS and high levels of familial support. Finally, the results indicate that in comparison to other types of HIV/AIDS-related stigma considered in this study, FS was the strongest and the only statistically significant predictor of familial support beyond what could be accounted for by KHIV and gender differences. These findings are discussed in relation to the implications for the test and treat intervention in Fiji.

Keywords: *HIV knowledge, HIV/AIDS stigma and discrimination, family support, test and treat strategy, gender differences*

Introduction

Fiji has a low prevalence of HIV/AIDS (< 0.1%); however, unlike the global HIV trend, which has stabilised in recent years, HIV is a growing problem in Fiji, with figures projected to have increased by 50% in 2020 (Fiji Centre for Communicable Diseases Control [FCDC], 2015; Ministry of Health and Medical Services, 2016; UNAIDS, 2016). This projected increase will place additional burdens on existing prevention, support, and care mechanisms employed in Fiji. Several factors increase Fiji's susceptibility to an HIV epidemic, including low and inconsistent use of condoms and barriers to condom negotiation amongst vulnerable groups such as commercial sex workers, men who have sex with men (MSM), tertiary students, seafarers and uniformed service; low knowledge on modes of transmission of HIV; high rates of multiple and casual partners; low perceived risk of HIV transmission; low rates of HIV testing; and early onset of sexual behaviour (Bavinton et al., 2011; Choudhary et al., 2020; Hammar et al., 2011; McMillan & Worth, 2010).

Fiji's National Strategic Action Plan on HIV and STIs 2016-2020, developed on the basis of the UN Sustainable Development Goals (SDG) 2030 Agenda, aimed to reduce infection rates by 75% in 2020 and by 95% in 2030 using the "test and treat" strategy. The basic premise of this strategy is that universal HIV testing will result in early detection and treatment of HIV and therefore reduce future infections due to a reduced viral load of people living with HIV/AIDS (PLWHA) (HIV and AIDS Data Hub for Asia Pacific [AIDS Data Hub], 2021a; Ministry of Health and Medical Services, 2016). With proper implementation and monitoring, this strategy has been highly successful in reducing viral loads and preventing sexual transmission of HIV across the world (Bavinton & Rodger, 2020; Mendez-Lopez et al., 2019; Stafford et al., 2019).

This predominantly biomedical approach presupposes that Fijians will readily take part in testing and treatment of HIV. However, recent data indicates that Fiji has been failing miserably at meeting its 2020 targets: Infection rates have increased by 97% since 2010; only 41% of people diagnosed with HIV are currently on antiretroviral therapy; only 29% of PLWHA are virally supressed; and testing continues to be low in vulnerable populations (AIDS Data Hub, 2021a; 2021b). Since there is overwhelming evidence that fear of HIV/AIDS-related stigma and discrimination deters individuals from getting tested, addressing HIV/AIDS-related stigma and discrimination is critical to the success of the test and treat strategy adopted by Fiji (Bavinton & Rodger, 2020; Choudhary et al., 2020; Gwadz et al., 2018; Ostermann et al., 2011; Rodriguez-Hart, 2018; Smolak & El-bassel, 2013; Stangl

et al., 2013**;** Tesfay et al., 2020; UNAIDS, 2007). Studies indicate that family support is associated with greater adherence to antiretroviral therapy, reduction in HIV-risk behaviour, and better quality of life, adjustment, and mental health of PLWHA (Campbell et al., 2020; Collins et al., 2006; Omonaiye et al., 2020; PIAF, 2009, 2011; Salter et al., 2010; Tiyou et al., 2010). On the other hand, in some cases, fear of secondary stigma also results in family members restricting disclosure of HIV status, which ultimately deprives PLWHA from healthcare and support services (Campbell et al., 2020; Ma et al., 2018; Tesfay et al., 2020). This need for secrecy due to fear of anticipated secondary stigma may be another hindrance to the success of the test and treat strategy adopted by Fiji.

Literature Review

A considerable amount of the research on HIV/AIDS-related stigma draws from the work of Ervin Goffman who describes stigma as "an attribute that is deeply discrediting within a particular social interaction," adding that the individual with the undesirable attribute is then "reduced in our minds from a whole and usual person to a tainted, discounted one" (Goffman, 1963, p. 3). At the individual level, this socio-cognitive approach is especially useful in understanding stigma as an outcome of categorisation followed by stereotyping. However, as others have pointed out, studies that adopt Goffman's definition underestimate the role of social structural forces as the source of this differentiation (Mahajan et al., 2008; Pantelic et al., 2019; Scambler, 2009). Structural forces such as inequalities on the basis of gender, ethnicity, class, fear of contagion, and sexuality have been widely identified as social forces that not only create HIV/AIDS-related stigma but also maintain and exacerbate stigmatising attitudes (e.g., Castro & Farmer, 2005; Parker & Aggleton, 2003; Parker et al., 2002). The relationship between these two perspectives (individual and structural) is offered by Link and Phelan's (2001) conceptualisation of stigma.

Drawing from Goffman's description of stigma, Link and Phelan (2001) stress that stigmatisation is largely the product of supremacy of one group over another and is a consequence of loss of status. They define stigma as the combination of four core components including labelling, stereotyping, separation, and status loss and discrimination. The first three create a distinction between the ingroup and the outgroup, eventually culminating into the fourth or last step of status loss and discrimination. According to this view, societal mechanisms such as pre-existing conceptions of stigma cause power differences between the ingroup and the outgroup and play a vital role in the creation and

maintenance of stigma and discrimination at multiple levels throughout society (Link & Phelan, 2001, p. 379). This layered nature of HIV/AIDS-related stigma is aptly captured in the manifestations of stigma identified by the International Center for Research on Women (ICRW)-led four-country study in Ethiopia, Tanzania, Vietnam, and Zambia. The study found that, unlike conventional assumptions about HIV/AIDS-related stigma being primarily culturally determined, "key causes of stigma, its impact and consequences have many more similarities than differences across contexts" (ICRW, 2006, p. 1). Consequently, a set of common causes and manifestations of stigma were identified through these studies, including fear-driven stigma and value-driven stigma.

Much of the stigma associated with HIV/AIDS arises from shame and blame, which appears to be more strongly associated with the way the disease was acquired rather than the disease itself (Cao et al., 2006, p. 519; Derose et al., 2016). Value-driven stigma is the "moral dimension of stigma that justifies stigma through judgement, shame and blame" and is fuelled by pre-existing stigma associated with sex, gender, ethnicity, and poverty (Tanzania stigma-indicators field test group, 2005, p. 3). HIV/AIDS is usually associated with deviant behaviour and especially "morally unsanctioned behaviour" such as promiscuity, sex work, homosexuality, and drug abuse. Therefore, PLWHA are seen as being responsible for the infection and deserving of their affliction (Alonzo & Reynolds, 1995; Valdiserri, 2002).

This view is also prevalent in Fiji, where HIV is commonly seen as a punishment for what is deemed as immoral and sinful behaviour such as homosexuality, pre-marital sex, prostitution (especially for women), and having many sexual partners (Labbé, 2011, p. 42). Lui et al. (2012) documented that 35% of the Fijian healthcare workers (N = 369) surveyed believed that HIV and STIs were a punishment for immoral behaviour. Stigma and discrimination on the basis of gender, sexuality, and sexual behaviour is also high and studies have consistently recorded verbal abuse, physical harm, and sexual violence with sex workers, transgender, MSM, and HIV+ women (Bavinton et al., 2011; McMillan & Worth, 2010, 2011; The Pacific Islands AIDS Foundation [PIAF], 2009, 2011).

HIV testing amongst Fijian transgender and MSM is also low, with only 33.7% of 210 participants sampled having ever been tested for HIV despite high rates of casual partners and low usage of condoms in this population. This low rate of testing was attributed to a lack of trust with testing clinics, judgmental and unfriendly clinic staff, and issues around violation

of privacy and confidentiality (Bavinton et al., 2011). The stigma associated with sex work and discriminatory behaviour of medical professionals has also resulted in poor access to sexual health services for Fijian sex workers. This was further exacerbated by the criminalisation of sex work in 2010, which led to the cessation of outreach services to sex workers by non-governmental organizations (McMillan & Worth, 2011). This pre-existing stigma related to gender and sexuality increases not only HIV/AIDS-related stigma within these groups but also their vulnerability to HIV due to the negative impacts on uptake of HIV testing and other health care services (Crowell et al., 2017; Evens et al., 2019; Krishnaratne et al., 2020; Lyons et al., 2020).

Fear-driven stigma is the irrational fear of casual transmission of HIV/AIDS through everyday contact and refusal to have contact with PLWHA because of this fear (Tanzania stigma-indicators field test group, 2005). This is another popular perception of HIV and PLWHA in Fiji; PLWHA are viewed as "contagious" and any casual contact as "risky" (Labbé, 2011, p. 40). PLWHA in Fiji have reported that when their diagnoses became known, some family and community members refused to have physical contact and stopped sharing food, utensils, toilets, and water facilities with them (PIAF, 2011, p. 53). Furthermore, in a survey, one third of Fijian healthcare workers admitted to having a "strong fear" of occupational transmission of HIV and 61% reported seeing other healthcare workers using additional precautions such as latex gloves for non-invasive procedures on a client known to have or suspected of having HIV (Lui et al., 2012, p. 325). Fourteen percent of the participants also reported seeing a client who was known to have or was suspected of having HIV receiving less care or attention than other patients. Real and anticipated HIV/AIDS-related stigma from healthcare workers affects uptake of HIV testing and can be another barrier to the success of the test and treat strategy (Okal, 2020; Tesfay et al., 2020).

Finally, secondary stigma (a combination of both fear-driven stigma and value-driven stigma) is the extension of stigma to individuals associated with PLWHA, such as family members, and determines the likelihood of familial support for PLWHA (Cree et al., 2004; Ma et al., 2018; Mahamboro et al., 2020; Ogden & Nyblade, 2005). HIV/AIDS-related stigma and discrimination have tremendous physical, emotional, social, and financial consequences for PLWHA and their families, yet it has been generally overlooked in the HIV/AIDS studies conducted in Fiji. Common forms of secondary stigma experienced by family members of PLWHA recorded elsewhere include gossiping, violation of privacy, verbal abuse, isolation,

rejection, loss of access to services, and loss of livelihood (Cao et al., 2006; Mason et al., 2014; Ogunmefun et al., 2011; Siegel et al., 2018; Wight et al., 2006).

In developing countries such as the Fiji Islands, where social welfare and healthcare systems are generally under-resourced, family members provide the crucial care-giving, financial, and emotional support required by PLWHA and their dependents (Collins et al., 2006; Gajraj-Singh, 2011; Letamo, 2003; Li et al., 2006; Ogunmefun et al., 2011; Oluwagbemiga, 2007; PIAF, 2009, 2011). Qualitative data suggests that HIV/AIDS-related stigma within family settings can be "diminished" by increasing knowledge of modes of transmission of HIV (Mahamboro et al., 2020). A number of studies have also indicated that lower levels of HIV knowledge results in higher levels of stigma, which then impacted on uptake of HIV testing (Ajayi et al., 2020; Haider et al., 2020; James & Ryan, 2018; Lifson et al. 2013; Ruan et al., 2019). HIV testing history was associated with higher knowledge of HIV, which in turn was associated with lower levels of stigmatising attitudes, indicating that HIV knowledge mediates the relationship between HIV testing history and stigma (James & Ryan, 2018). Furthermore, this negative relationship between HIV knowledge and HIV/AIDS-related stigma was found with different forms of stigma including fear of casual transmission and moral judgement (Ruan et al., 2019).

The test and treat strategy has made considerable positive impacts on the health outcomes of PLWHA and in the reduction of the spread of HIV at the individual level. However, HIV/AIDS-related stigma and discrimination continues to be one of the greatest barriers to the strategy making an impact in the national HIV statistics (Bavinton & Rodger, 2020). If vulnerable individuals are not able to seek timely testing and adhere to treatment regimens, HIV will remain undetected and continue to spread.

Studies on HIV/AIDS-related stigma and discrimination conducted in Fiji have covered considerable ground in terms of mapping expressions of stigma with PLWHA. However, there has been very little focus on understanding the drivers of HIV/AIDS-related stigma in Fiji, HIV knowledge, and willingness to provide support to HIV+ family members, all of which are key determinants for uptake of HIV testing and will be crucial for the success of the test and treat strategy adopted by Fiji. Furthermore, globally, there is paucity of literature on the impact of HIV knowledge on familial support and the relationship between HIV/AIDS-related stigma and familial support for PLWHA. To address these gaps, the present study measures HIV knowledge, levels of three types of HIV/AIDS-related stigmas

(fear-driven stigma, value-driven stigma, anticipated secondary stigma), and support for a hypothetical HIV+ family member within a sample of post-secondary students. The study also investigates the relationship between knowledge on modes of transmission of HIV and the three types of stigmas and support for an HIV+ hypothetical family member. Finally, the study aims to identify the relationship between willingness to support a hypothetical family member and the three types of stigmas. The findings included in this paper are part of a larger mixed methods study on HIV/AIDS-related stigma and discrimination and the findings of this study will assist in providing greater insights into some potential barriers that may impede the effectiveness of the test and treat strategy adopted by Fiji.

Method

Participants

Participants were drawn over the course of one year from private and government sponsored postsecondary training programmes around the Western and Central Divisions of Viti Levu, the largest island in the Fijian archipelago. Twelve clusters of the four main areas of study (trade and commerce, medicine and nursing, police officers [new recruits], and teacher training) were identified due to the important roles that these participants can play in HIV/AIDS prevention, treatment, and care in Fiji. Samples were drawn from all twelve clusters. A representative appointed by the head of the participating institutions assisted in the recruitment of participants. The representative identified the best possible locations and possible times to approach participants – for example, class times or after meal times on their campuses, or, in the case of police officers (new recruits) at the police stations where they were undertaking their practicums. Written, informed consents were gained, overseen by the institutional representative.

All eligible participants that were approached consented to take part in the in the survey (N = 348). Twelve participants (4%) were not included in the final data set because substantial data was missing (i.e., 50% of the variables were missing) or key demographics (e.g., gender, ethnicity, and area of study) were not entered. The remaining questionnaires were randomly selected to generate a subsample of 300 post-secondary students that (1) reflected the ethnic division ratio of 3:2, with 180 iTaukei and 120 Indo-Fijian participants, and (2) was gender balanced (Fiji Islands Bureau of Statistics, 2020).

The sample consisted of postsecondary students from four specialist study areas namely, trade and commerce (n = 99), medicine and nursing (n = 66), teacher training (n = 93), and

policing (n = 42). The mean age of participants of the study was 20.68 years (age range: 18 – 29). Students were enrolled at certificate, diploma, and degree levels. Ethical approval for the study was given by the National Health Research Committee – Ministry of Health, Fiji Islands before the commencement of the study.

Materials

The Likert scales used in the study were created on the basis of a companion study, which explored the dominant experiences of three types of HIV/AIDS-related stigmas (fear-driven stigma, value-driven stigma, secondary stigma) and familial support with 11 HIV+ iTaukei (n = 9) and Indo-Fijian (n = 2) participants with varied marital statuses, occupational and religious backgrounds, and levels of education (ranging from early primary to tertiary education). There is some overlap between the items developed for this study and stigma indicators for value-driven and fear-driven stigma recommended by Nyblade and MacQuarrie (2006).

A draft version of the questionnaire was piloted with 18 postsecondary students and the phrasing of some questions modified based on the feedback received. Items measuring HIV knowledge, fear-driven and value-driven stigma appeared in the first part of the questionnaire. On the next page, a short prompt asking participants to visualise that a close family member (e.g., parent, sibling, spouse, etc.) was HIV positive or had AIDS was given before statements on anticipated secondary stigma and support for a hypothetical HIV+ family member. Response options for the forced-choice Likert scales were "1= Strongly Disagree", "2 = Disagree", "3= Agree" and "4= Strongly Agree", prompting participants to express firm opinions on the statements.

Knowledge on modes of transmission of HIV/AIDS Score (KHIV)

14 statements measured KHIV, of which only four statements were correct (transmission through blood transfusion, breastfeeding, unprotected sex with an infected partner and injections). These statements were derived from the universally accepted main modes of transmission of HIV/AIDS (Avert, 2021). The remaining 10 statements focused on perceptions of casual transmission. Response options were "yes" and "no". All incorrect responses were reverse coded, and a high score (maximum of 2) represented a high level of KHIV.

Participant views on HIV treatment and its impact on the quality of life of PLWHA

Four statements assessed the views of participants on HIV treatment and its impact on the quality of life of PLWHA. The questions focused on whether treatment and cure was available for HIV and whether PLWHA can live healthy and productive lives and have HIV negative babies. Response options were “true”, “false” and “not sure”.

Fear driven stigma score (FS)

Fear driven stigma was measured with seven items pertaining to avoiding PLWHA due to fear of casual transmission of HIV/AIDS. Each item had two components: the form of avoidance and the reason for avoidance. Statements included, “I don’t want to share cooking and eating utensils with PLWHA because I can get HIV” and “I will not shake hands or hug PLWHA because I can get infected”. Cronbach’s alpha for items for the scale was 0.83 and a high score represented high levels of fear driven stigma.

Value driven stigma score (VS)

Value driven stigma was measured with seven items relating to value judgements and sexual stigmatisation of PLWHA and three stereotypical groups associated with HIV/AIDS (e.g., promiscuous people, homosexuals, and commercial sex workers). Items included “Sex workers and their clients who get infected with HIV/AIDS deserve it” and “Only people who don’t follow religious teachings get HIV/AIDS”. Cronbach’s alpha for items for VS was 0.84 and a high score represented high levels of value driven stigma.

Anticipated secondary stigma score (SS)

Five items describing instances of secondary stigma were used to measure anticipated secondary stigma. The items included accounts of different forms of discrimination extended to family members of PLWHA such as “People from my community will gossip about my family” and “People from my community will avoid contact with me”. Cronbach’s alpha for the scale was 0.73 and a high score represented high levels of anticipated secondary stigma.

Support for a hypothetical HIV+ family member score (SUP)

Seven items pertaining to different types of support rendered to a HIV+ close family member measured the support for a hypothetical HIV+ family member. The items reflected interviewee descriptions of forms of support provided by family members such as “If I have the means and ability I will support him/her financially (money-wise)” and “I will take care of him/her when he/she gets sick”. Cronbach’s alpha for this scale was 0.84 and a high score represented high levels of support for a hypothetical HIV+ family member.

Procedure

The self-completion questionnaires were administered to groups of up to 30 participants at a time. Participants were informed about the importance of the study, assured of anonymity of their responses and rights to withdrawal, and requested to be honest in their responses. They were then instructed to answer questions in the order given and were especially instructed (1) not to miss question(s) with the intention of going back to answer the question(s) and (2) not to change responses to a question once they had finalised their answer for the question. This was done to ensure that the first response of the participant towards PLWHA was recorded and that responses for statements measuring value driven stigma and fear driven stigma were not modified after the participant was given the hypothetical situation regarding a HIV+ close family member. Participants spent 10-15 minutes answering the questionnaire and once filled questionnaires were collected, voluntary debriefing sessions were conducted, which were attended by all participants.

Data analysis

Predictive Analytics Software (PASW) by SPSS was used for data analysis. All effect sizes were interpreted using Cohen's (1988) conventions. As the scales were created for the study, only data from participants who had responded to all items for a scale were included in the results (also see Appendices for items for each scale and instructions on scoring the scales).

Results

Knowledge on modes of transmission of HIV

Descriptive analyses revealed that participants high scores for KHIV (*Mean* = 1.87, *Standard Deviation* = 0.13, *Mode* = 1.93), with scores ranging from 1.29 – 2.00. Furthermore, 91% of the participants had ≥ 86% correct responses. Percentages of "yes" and "no" responses for the 14 items of this scale were graphed to identify areas with greatest misconceptions regarding transmission of HIV, and correlations with the other four variables were explored.

Figure 1 provides the response rate for the 14 statements describing modes of transmission of HIV. The three most common misconceptions regarding modes of transmission of HIV in the sample were saliva (36%), kissing (30%), and mosquito bites (21%). Other misconceptions included possible peripheral contact with blood on nail clippers and hair cutting scissors (13%), sweat (13%), and cigarettes (10%). Thirty percent of participants did not identify breastfeeding as a mode of transmission of HIV.

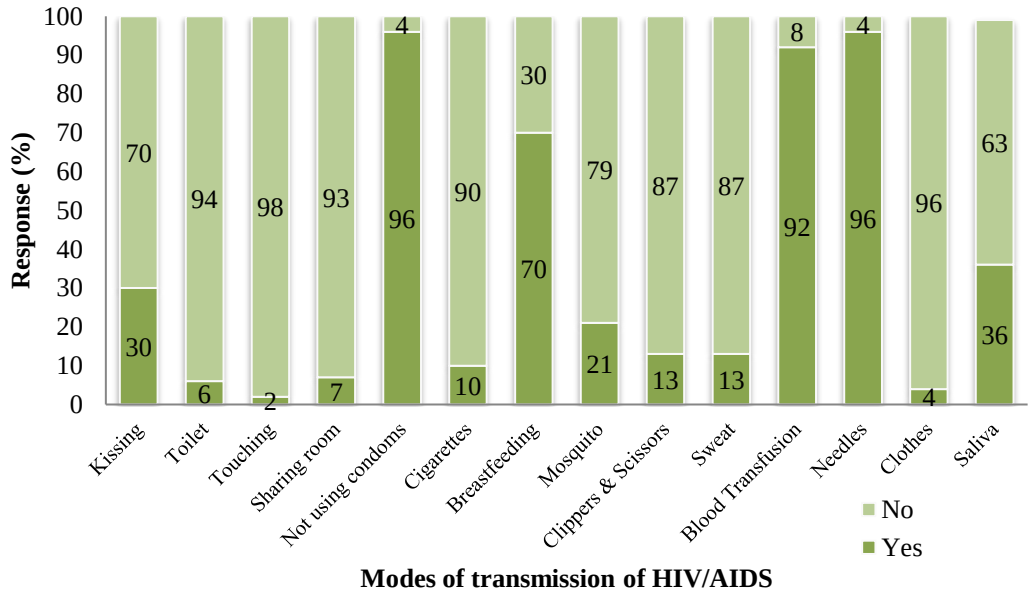

Figure 1. Perceived modes of transmission of HIV/AIDS (N = 300)

Participant views on HIV treatment and its impact on the quality of life of PLWHA

Figure 2 shows the views of participants on HIV treatment and its impact on the quality of life of PLWHA. Only 45% of the participants were aware that treatment was available for HIV and 31% knew that PLWHA can have HIV negative babies. Furthermore only 28% of the participants felt that PLWHA can lead healthy and productive lives if they were on medication. Eighty percent of participants knew there is no cure for HIV.

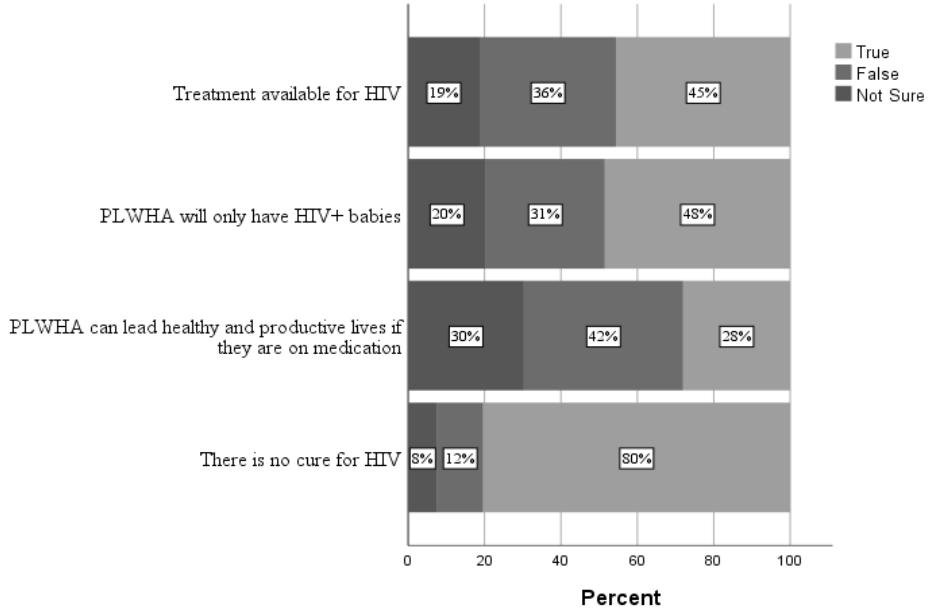

Figure 2. Participant views on HIV treatment and its impact on the quality of life of PLWHA (N = 300)

Comparisons of the Stigma Scores

A Friedman two-way ANOVA was used to compare the stigma scores, as variances of SS were not equal. The test indicated that statistically significant differences exist between the three stigma variables; FS, VS, and SS, χ^2_F =41.88 (corrected for ties), df = 2, N – Ties = 138, p < .001. Follow-up pair wise comparisons using Wilcoxon Signed Rank Test and Bonferroni adjusted α of 0.017 indicated that the VS (*Mean Rank* = 2.34) were significantly higher than FS (*Mean Rank* = 1.59), T = 1247.5, z = -7.69 (corrected for ties), N – Ties = 140, p < .001, one-tailed, r = -0.65. This can be considered a large-sized effect (Cohen, 1988). VS was rated higher than FS by 82% of the participants.

Similarly, VS was rated higher by 59% of the participants in comparison with SS (*Mean Rank* = 2.07). The differences were statistically significant, T = 4112, z = -2.8 (corrected for ties), N – Ties =149, p = .0025 one-tailed, r = -0.23; a small-sized effect (Cohen, 1988).

Finally, while FS were rated higher by 60% of the participants in comparison with their SS, there were very small differences in their mean ranks (0.48). Nonetheless, the differences were statistically significant T = 5040, z = -2.39 (corrected for ties), N – Ties =160, p = .0085 one-tailed, r = -0.19; a small sized effect (Cohen, 1988).

Comparisons of Stigma and Support Scores

A Friedman two-way ANOVA with follow-up pair wise analyses using Wilcoxon Signed Rank Test (Bonferroni adjusted α of 0.0125) were also conducted to compare SUP and the

three stigma scores (FS, VS, and SS). There were statistically significant differences between the four variables, χ^2_F =202.24 (corrected for ties), *df* = 3, *N* – Ties = 120, *p* = .001 with SUP having the highest mean rank of 3.85 in comparison with VS (*Mean Rank* = 2.41), SS (*Mean Rank* = 2.08) and, FS (*Mean Rank* = 1.65).

SUP was rated higher than VS by 90% of the participants. A Wilcoxon Signed Rank Test indicated that the differences were statistically significant, *T* = 427.5, *z* = -9.9 (corrected for ties), *N* – Ties =151, *p* = .0005 one-tailed, *r* = -0.8. Likewise, SUP was rated higher than FS by 96% of the participants and the differences in scores were also statistically significant, *T* = 88.5, *z* = -11.35 (corrected for ties), *N* – Ties =175, *p* = .0005 one-tailed, *r* = -0.86.

Finally, SUP was rated higher than SS by 99% of the participants. Differences between the two scores were also statistically significant, *T* = 5, *z* = -11.31 (corrected for ties), *N* – Ties =170, *p* = .0005 one-tailed, *r* = -0.87. These differences between SUP and the three types of stigma scores can be characterised as very large effect sizes according to Cohen's (1988) conventions.

Differences by Ethnicity and Gender

Ethnic and gender differences were explored using parametric and non-parametric tests after screening for normality and homogeneity of variances and results for the five variables have been divided according to the type of statistical test used.

Knowledge on modes of transmission of HIV/AIDS score, anticipated secondary stigma score and support for hypothetical HIV+ family member score

As KHIV and SUP were positively skewed and variances of SS were not equal, a Mann-Whitney U test was used to examine gender and ethnic differences in these three variables; the results of the test are displayed in Table 1.

Table 1. Mann-Whitney U tests by gender and ethnicity of participants

Variables	Mean Rank (*n*)		*U*	*z*	*r*
Gender					
	Female	Male			
KHIV	147.07 (149)	150.94 (148)	10738.5	-0.3	.02
SS	111.67 (106)	93.71 (99)	4327.5*	-2.18	.15
SUP	123.33 (112)	101.67 (112)	5059.5*	-2.51	.17
Ethnicity					

	Indo-Fijian	iTaukei			
KHIV	160.66 (119)	141.21 (178)	9204*	-1.96	.11
SS	116.85 (86)	92.99 (119)	3925.5*	-2.85	.19
SUP	117.11 (85)	109.68 (139)	5516	-0.83	.06

Note: KHIV = Knowledge on modes of transmission of HIV/AIDS score, SUP = support for hypothetical HIV+ family member score, and SS = anticipated secondary stigma score.
z has been corrected for ties* $p < 0.05$

Females (*Mean Rank* = 123.33) had significantly higher SUP than males (*Mean Rank* =101.67). There was also a statistically significant difference in SS between males (*Mean Rank* = 93.71) and females (*Mean Rank* = 111.67), i.e., female participants reported higher expectancies of being stigmatised if they had an HIV+ close family member. Statistically significant differences also exist in KHIV and SS for the two ethnic groups. Indo-Fijian participants had higher levels of KHIV (*Mean Rank* = 160.66) as well as higher expectancies of being subjected to secondary stigma (*Mean Rank* = 116.85). These significant gender and ethnic differences are small-sized effects (Cohen, 1988). There were no statistically significant differences in (1) ethnicity for SUP and (2) gender for KHIV.

Value-driven stigma and fear-driven stigma

A 2 (gender – male, female) x 2 (ethnicity – iTaukei, Indo-Fijian) factorial between groups ANOVA was used to compare average VS and FS, as tests for normality and homogeneity of variances indicated minor violations for normality; ANOVA is robust against these violations (Allen & Bennet, 2010). The ANOVA revealed that a statistically significant main effect existed only for ethnicity in the levels of VS, F (1, 186) = 17.19, $p < .001$, *partial* $\eta 2$ = 0.09; a medium-sized effect. There was no significant main effect for sex in the levels of VS F (1, 186) = .141, p = .708, partial $\eta 2$ = .001 and no interaction between sex and ethnicity for VS, F (1, 186) = .06, p = .806, partial $\eta 2$ = .000.

Similarly, there was no significant main effect of ethnicity, F (1, 215) = 1.5, p = .223, partial $\eta 2$ = .007 or sex, F (1, 215) = 3.84, p = .051, partial $\eta 2$ = .018 in FS. There was also no interaction between sex and ethnicity for FS, F (1, 215) = .745, p = .386, partial $\eta 2$ = .003. Mean scores for each group are given in Table 2.

Table 2. Mean scores for value-driven stigma score (VS) and fear-driven stigma score (FS)

	Value-driven stigma score (VS)	**Fear-driven stigma score (FS)**

	Female	Male	Marginal means (ethnicity)	Female	Male	Marginal means (ethnicity)
Indo-Fijian	1.81	1.82	1.82	1.5	1.72	1.62
iTaukei	2.23	2.29	2.26	1.67	1.76	1.71
Marginal means (sex)	2.02	2.06		1.59	1.74	

Correlations between Knowledge on modes of transmission of HIV/AIDS score and stigma and support scores

As assumptions of normality were not met for KHIV and SUP, a Spearman's rho (r_s) was used to examine correlation KHIV and FS, VS, SS and SUP. There is a stronger negative correlation between KHIV and FS [$r_s(219) = -.30$] as opposed to VS [$r_s(189) = -.22$] (Cohen,1988). Furthermore, KHIV shows a weak positive correlation with SUP ($r_s(222) = .23$). The correlation between SS and KHIV wasn't significant.

Table 3. Correlations between knowledge on modes of transmission of HIV/AIDS score and stigma and support variables

Variable	*N*	r_s
Value-driven stigma score (VS)	189	-.22*
Fear-driven stigma score (FS)	219	-.30*
Anticipated secondary stigma score (SS)	203	.05
Support for hypothetical HIV+ family member score (SUP)	222	.23*

Note:
* $p < 0.001$, one-tailed

Hierarchical Multiple Regression Analysis

To estimate the proportion of variance in SUP that can be accounted for by the three types of stigmas (VS, FS, and SS), while controlling for the effects of sex and KHIV, a hierarchical multiple regression analysis (MRA) was performed. Stem-and-leaf plots and box plots were used to test for normality and univariate outliers; two extreme scores for FS, one extreme

score for SUP, and two extremes scores for VS were detected and were deleted from data file. Assumptions of normality, linearity and homoscedasticity of residuals were met.

On step 1 of the hierarchical MRA, KHIV and sex accounted for 7.6% of the variance in SUP scores, $R^2 = .076$, $F = (2, 149) = 6.16$, $p = .003$, $f^2 = 0.08$. On step 2, the three forms of stigma were added. VS, FS, and SS accounted for a statistically significant 13.4% of the variability in SUP, $\Delta R^2 = .134$, $F = (3, 146) = 8.255$, $p < .001$, $f^2 = 0.15$. The combined model of KHIV, sex and the three types of stigmas accounted for 21% of the variance in SUP scores, $R^2 = .21$, $F = (5, 146) = 7.776$, $p < .001$, $f^2 = 0.27$. This approximates a large-sized effect according to Cohen's (1988) conventions. The unstandardised (B) and standardised (β) regression coefficients, and squared semi-partial correlations (sr^2) for each predictor in SUP scores are reported in Table 4. As can be seen in Table 4, the only significant predictor of SUP in the final regression model was FS.

Table 4. Summary of multiple regression analysis for stigma variables predicting variances in support for hypothetical HIV+ family member score (SUP)

Variable	B [95% CI]	β	sr^2
Step 1			
Knowledge on modes of transmission of HIV/AIDS Score (KHIV)	.909 [.254, 1.563]*	.216	0.05
Sex	-.178 [-.340, -.017]*	-.176	0.03
Step 2			
Knowledge on modes of transmission of HIV/AIDS Score (KHIV)	.263 [-.401, .928]	.063	0.003
Sex	-.127 [-.282, .027]	-.123	0.014
Value-driven Stigma Score (VS)	.000 [-.137, .138]	.000	.000
Fear-driven Stigma Score (FS)	-.374 [-.563, -.184]**	-.4	0.08
Anticipated Secondary Stigma Score (SS)	.027 [-.191, .136]	.025	.000

Note. $n = 133$. CI = confidence interval, * $p < 0.05$, ** $p < 0.001$

Discussion

This study measured HIV knowledge, three types of HIV/AIDS-related stigmas (fear-driven stigma, value-driven stigma, anticipated secondary stigma) and support for a hypothetical HIV+ family member. The participants of this study included prospective health care

workers, educators, and law reinforcement staff members, all of whom will play pivotal roles in HIV/AIDS prevention, treatment, and care in Fiji.

One positive finding of this study was that participants had generally high knowledge on modes of HIV transmission. Nonetheless, incorrect beliefs regarding modes of transmission were also identified. Contact with saliva, deep kissing, and mosquito bites were the most common inaccurate beliefs held by post-secondary students. Further, 30% of participants did not identify breast milk as a form of transmission of HIV. However, the cause of concern for this sample was that the group remained poorly informed about HIV treatment and its impact on the quality of life of PLWHA. Only 45% of the participants were aware that treatment was available for HIV and 69% did not know that PLWHA can have HIV negative babies. Furthermore, only 28% of the participants felt that PLWHA can lead healthy and productive lives if they were on medication. This finding is worrisome, as studies show that poor HIV knowledge is associated with poor uptake of HIV testing (Ajayi et al., 2020; Haider et al., 2020; James & Ryan, 2018; Ruan et al., 2019).

With regards to measures of the different forms of stigma, value-driven stigma was more common within the sample than fear-driven stigma. While evidence of all three types of stigmas were found, value-driven stigma scores were rated higher than fear-driven stigma scores by 82% of the participants and higher than anticipated secondary stigma scores by 59% of the participants. Holding value judgements of PLWHA whereby they are seen as deserving of their afflictions and associating HIV with stereotypical groups (e.g., promiscuous people, homosexuals and commercial sex workers) impacts two societal areas. Firstly, associating HIV with certain groups creates a false sense of personal immunity, which can hinder uptake of HIV tests (Lifson et al., 2013). Secondly, value judgements held by professionals expected to play important roles in HIV/AIDS prevention and the test and treat strategy could be especially problematic as vulnerable populations have identified this as a major barrier to accessing HIV testing and treatment in Fiji (Bavinton et al., 2011; McMillan & Worth, 2010, 2011).

A very promising finding of this study was that, regardless of the higher levels of value-driven stigma that the sample exhibited, participants generally held more supportive attitudes towards a hypothetical HIV+ family member. While this may not make any direct difference in their professional roles, this finding is consistent with the expectations and experiences of family support depicted by other studies in Fiji: Immediate family members such as parents

and spouses generally take on roles as primary caregivers and extended family members also provide respite care and emotional and financial support (Gajraj-Singh, 2011; PIAF, 2009, 2011). The findings of this study are also consistent with other studies in terms of gender differences in caregiving with female participants expressing greater supportive attitudes towards a hypothetical HIV+ family member (e.g., Matovu et al., 2020; Ogunmefun et al., 2011).

Another aim of this study was to identify the relationship between individual variables of knowledge of HIV transmission and the three forms of stigmas and support for a hypothetical HIV+ family member. The negative relationship between KHIV and fear-driven and value-driven stigma and the positive relationship between KHIV and support is consistent with other studies that have looked at this (e.g., Ajayi et al., 2020; Haider et al., 2020; James & Ryan, 2018; Lifson et al. 2013; Ruan et al., 2019). Furthermore, consistent with the findings of Ruan et al., (2019) in their sub-sample of medical students, this study also showed a stronger negative relationship between KHIV and fear-driven stigma than value-driven stigma. A possible explanation for this is that, with good knowledge of HIV transmission, participants were aware that HIV cannot be transmitted through casual contact leading to lower fear. However, understanding the sexual transmission route led to greater value judgements towards PLWHA, especially in a community where there is pre-existing stigma and intolerance around gender, sexuality and behaviour such as promiscuity, pre-marital sex, and prostitution (Bavinton et al., 2011; Labbé, 2011; McMillan & Worth, 2010, 2011). This may also explain the existence of higher levels of value-driven stigma within the present sample.

The main aim of this study was to show the added impact of the different drivers of HIV/AIDS-related stigma have on supportive attitudes towards a hypothetical HIV + family member beyond the impact of KHIV and gender differences. The data indicates that fear-driven stigma significantly predicts supportive attitudes towards HIV+ family members in this sample. These findings add to the current literature on HIV/AIDS-related stigma. Inaccurate beliefs about modes of transmission, especially casual transmission of HIV from everyday contact, can cause unwarranted fears of contracting HIV from HIV+ family members and decrease the likelihood of familial support (Cowgill et al., 2008; Lundberg et al., 2016).

Implications for Policy and Practice

These findings have multiple implications for the test and treat strategy adopted by Fiji, the success of which is highly dependent upon widespread uptake of the HIV testing and adherence to treatment regimens. Firstly, since HIV knowledge impacts uptake of testing, concerted efforts need to be made to increase community awareness of HIV. Specifically, the inaccurate beliefs about HIV transmission and the impact of HIV treatment on the quality of life of PLWHA need to be targeted by HIV intervention messages and the formal education curricular in Fiji. While the study sample is not representative of the Fijian population as a whole, it does raise the concern that if misconceptions around HIV knowledge exist among what could be deemed an 'elite' group with access to education, the knowledge in the general population is likely to be much worse.

Secondly, addressing HIV/AIDS-related stigma is paramount as it is a key barrier to uptake of HIV testing and adherence to treatment regimens. To effectively accomplish this, the layered nature of HIV/AIDS-related stigma needs to be acknowledged and decisive actions need to be taken to target the different drivers of stigma associated with the pandemic at all levels of society, including policy and legal, institutional, community, family, and individual. Stangl et al. (2013) assessed the effectiveness of 48 HIV/AIDS-related stigma and discrimination reduction interventions. They concluded that one of the key challenges for design of interventions was a failure to recognise all the underlying drivers of stigma: A majority of the interventions (81%) targeted only one type of stigma. Interventions also failed to address manifestations of HIV/AIDS-related stigma at different societal levels. The findings of this study corroborate the existing evidence on the layered nature of HIV/AIDS-related stigma in Fiji (e.g., Bavinton et al., 2011; Labbé, 2011; McMillan & Worth, 2010, 2011; PIAF, 2009, 2011). These need to be considered when designing stigma reduction interventions.

Finally, the findings of this study especially underscored the need to address HIV/AIDS-related stigma with family members of PLWHA. With under-resourced healthcare and social welfare systems, family members are undeniably a central component of caregiving in Fiji. Moreover, family support has been linked to greater uptake of HIV testing and engagement in therapy. The findings of this study indicate that this willingness to provide emotional, financial, and physical support to HIV+ family members diminishes with increased HIV/AIDS-related stigma within post-secondary students. Furthermore, although value judgements of PLWHA were high within this sample, it is the fear for personal safety and concerns over casual transmission of HIV that is the greatest predictor of whether a family

member will be willing to take on the role of a caregiver of PLWHA. Therefore, if family members are to continue the essential care-giving, greater investment needs to be made in this resource. Services such as post-diagnosis counselling should also be extended to potential caregivers in order to clarify misconceptions regarding HIV and PLWHA. Additional services such as healthcare, counselling, support groups, and employment and social welfare assistance need to be extended to family caregivers of PLWHA (Kalomo et al., 2018; Lekganyane & Alpaslan, 2019).

Limitations and Areas for Future Research

Several limitations need to be considered when generalising the results of this study. Participants were given a hypothetical situation of an HIV+ close family member and therefore a relationship between attitudes and behaviour cannot be established. The data was also self-reported and is open to biases including giving responses that are socially desirable. To address this issue, participants were assured of complete anonymity of their responses and were requested to be honest with their responses. The study also did not identify whether the participant knew someone who was HIV+ as interpersonal contact can influence findings (Pharris et al., 2011). The scope of this study was limited to measuring three variables that may impact uptake of HIV testing: (1) HIV knowledge, (2) different drivers of HIV/AIDS-related stigma and (3) and family support. HIV testing and its relationship with these variables could not be measured, as HIV testing is low within this sample and it would be difficult to attain a meaningful sample to examine this relationship (Ministry of Health and Medical Services, 2016). With increased testing, future research should also look at the impact of HIV knowledge, HIV/AIDS-related stigma, and family support on uptake of HIV testing. Finally, the study adopted a cross-sectional design and no assumptions of causality can be made.

The findings of this study nonetheless underscore the need for HIV/AIDS prevention, treatment, and care approaches adopted by Fiji to be responsive to local issues and needs. In order to achieve its SDG UN 2030 targets and to effectively roll out the test and treat intervention strategy, Fijian policy makers need to increase their understanding of and address salient issues such as HIV/AIDS-related stigma, familial support, and inaccurate beliefs about HIV transmission and the impact of HIV treatment, which prevent uptake of HIV testing and adherence to treatment regimens.

References

Ajayi, A. I., Awopegba, O. E., Adeagbo, O. A., & Ushie, B. A. (2020). Low coverage of HIV testing among adolescents and young adults in Nigeria: Implication for achieving the UNAIDS first 95. *PLoS ONE, 15*(5) doi:10.1371/journal.pone.0233368

Allen, P., & Bennett, K. (2010). *PASW Statistics by SPSS: A Practical Guide, Version 18.0* (1st ed.). Victoria: Australia: Cengage Learning.

Alonzo, A. A., & Reynolds, N. R. (1995). Stigma, HIV and AIDS: An exploration and elaboration of a stigma trajectory. *Social Science & Medicine*, *41*(3), 303–315. http://doi.org/10.1016/0277-9536(94)00384-6

Avert (2021). *Information on HIV.* Retrieved from https://www.avert.org/hiv-transmission-prevention/myths

Bavinton, B. R., & Rodger, A. J. (2020). Undetectable viral load and HIV transmission dynamics on an individual and population level: Where next in the global HIV response? *Current Opinion in Infectious Diseases, 33*(1), 20-27. doi:10.1097/QCO.0000000000000613

Bavinton, B., Singh, N., Naiker, D. S., Deo, M. N., Talala, M., Brown, M., Singh, R. R., et al. (2011). *Secret Lives, Other Voices: A community-based study exploring male-to-male sex, gender identity and HIV transmission risk in Fiji.* Suva: AIDS Task Force of Fiji.

Campbell, L., Masquillier, C., Thunnissen, E., Ariyo, E., Tabana, H., Sematlane, N., . . . Wouters, E. (2020). Social and structural determinants of household support for ART adherence in low- and middle-income countries: A systematic review. *International Journal of Environmental Research and Public Health, 17*(11) doi:10.3390/ijerph17113808

Cao, X., Sullivan, S. G., Xu, J., & Wu, Z. (2006). Understanding HIV–related stigma and discrimination in a "blameless" population. *AIDS Education and Prevention*, *18*(6), 518–528. doi:10.1521/aeap.2006.18.6.518

Castro, A., & Farmer, P. (2005). Understanding and addressing AIDS-related stigma: From anthropological theory to clinical practice in Haiti. *American Journal of Public Health*, *95*(1), 53–59. doi:10.2105/AJPH.2003.028563

Choudhary, I., Chakrapani, V., Kaur, M., Mittal, S., & Kumar, R. (2020). Factors influencing HIV testing uptake among priority populations in a resettlement colony of a North Indian city. *Indian Journal of Community Health, 32*(1). doi:10.47203/ijch.2020.v32i01.008

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Collins, P. Y., Holman, A. R., Freeman, M. C., & Patel, V. (2006). What is the relevance of mental health to HIV/AIDS care and treatment programs in developing countries? A systematic review. *AIDS (London, England), 20*(12), 1571–1582. http://doi.org/10.1097/01.aids.0000238402.70379.d4

Cree, V. E., Kay, H., Tisdall, K., & Wallace, J. (2004). Stigma and parental HIV. *Qualitative Social Work, 3*(1), 7–24. doi:10.1177/1473325004041129

Crowell, T. A., Keshinro, B., Baral, S. D., Schwartz, S. R., Stahlman, S., Nowak, R. G., . . . Ake, J. A. (2017). Stigma, access to healthcare, and HIV risks among men who sell sex to men in Nigeria. *Journal of the International AIDS Society, 20*(1) doi:10.7448/IAS.20.1.21489

Cowgill, B. O., Bogart, L. M., Corona, R., Ryan, G., & Schuster, M. A. (2008). Fears about HIV transmission in families with an HIV-infected parent: A qualitative analysis. *Paediatrics, 122*(5), e950-e958. doi:10.1542/peds.2008-0390

Derose, K. P., Kanouse, D. E., Bogart, L. M., Griffin, B. A., Haas, A., Stucky, B. D., . . . Flórez, K. R. (2016). Predictors of HIV-related stigmas among African American and Latino religious congregants. *Cultural Diversity and Ethnic Minority Psychology, 22*(2), 185-195. doi:10.1037/cdp0000062

Evens, E., Lanham, M., Santi, K., Cooke, J., Ridgeway, K., Morales, G., . . . Dayton, R. (2019). Experiences of gender-based violence among female sex workers, men who have sex with men, and transgender women in Latin America and the Caribbean: A qualitative study to inform HIV programming. *BMC International Health and Human Rights, 19*(1) doi:10.1186/s12914-019-0187-5

Fiji Islands Bureau of Statistics. (2020). *Relationship, Ethnicity, and Religion by Urban and Rural Enumeration, Fiji: 2007*. Retrieved from https://www.statsfiji.gov.fj/statistics/2007-census-of-population-and-housing

Fiji Centre for Communicable Disease Control. (2015). Cumulative HIV Report: Third quarters.

Gajraj-Singh, P. (2011). Psychological impact and the burden of caregiving for persons with spinal cord injury (SCI) living in the community in Fiji. *Spinal Cord, 49*(8), 928-934.

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.

Gwadz, M., Leonard, N. R., Honig, S., Freeman, R., Kutnick, A., & Ritchie, A. S. (2018). Doing battle with "the monster": How high-risk heterosexuals experience and successfully manage HIV stigma as a barrier to HIV testing. *International journal for equity in health*, *17*(1), 46.\

Haider, M. R., Brown, M. J., Karim, S., Siddiqi, K. A., Olatosi, B., & Li, X. (2020). Factors associated with self-reported HIV testing in the Dominican Republic. *International Journal of STD and AIDS, 31*(6), 560-567. doi:10.1177/0956462420913443

Hammar, L. et al. (2011). *Me, my intimate partner, and HIV : Fijian self-assessments of transmission risks*. Suva: UNDP.

HIV and AIDS Data Hub for Asia Pacific. (2021a). *Country profiles: Fiji*. Retrieved from https://www.aidsdatahub.org/country-profiles/fiji

HIV and AIDS Data Hub for Asia Pacific. (2021b). *Fiji country data 2020.* Retrieved from https://www.aidsdatahub.org/resource/fiji-country-data-2020

International Centre for Research on Women. (2006). *HIV/AIDS Stigma: Finding Solutions to Strengthen HIV/AIDS Programs*. International Centre for Research on Women. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/C3124F37CAB76FCAC125726E003BD1DC-ICRW%20Aug2006pdf.pdf

James, T. G., & Ryan, S. J. (2018). HIV knowledge mediates the relationship between HIV testing history and stigma in college students. *Journal of American College Health*, *66*(7), 561-569.

Kalomo, E. N., Lee, K. H., Lightfoot, E., & Freeman, R. (2018). Resilience among older caregivers in rural Namibia: The role of financial status, social support and health. *Journal of Gerontological Social Work, 61*(6), 605-622. doi:10.1080/01634372.2018.1467524

Krishnaratne, S., Bond, V., Stangl, A., Pliakas, T., Mathema, H., Lilleston, P., . . . Hargreaves, J. R. (2020). Stigma and judgment toward people living with HIV and key population groups among three cadres of health workers in South Africa and Zambia: Analysis of data from the HPTN 071 (PopART) trial. *AIDS Patient Care and STDs, 34*(1), 38-50. doi:10.1089/apc.2019.0131

Labbé, F. (2011). Living with HIV and AIDS: Perspectives of women and men in Fiji. *Unpublished PhD thesis. School for Advanced Studies in Social Sciences, Centre for Research and Documentation on Oceania*.

Lekganyane, M. R., & Alpaslan, N. (2019). Suggestions by home-based caregivers caring for people living with HIV and AIDS on how social workers could support them in managing their work-related challenges. *Social Work (South Africa), 55*(2), 141-157. doi:10.15270/55-2-712

Letamo, G. (2003). Prevalence of, and factors associated with, HIV/AIDS-related stigma and discriminatory attitudes in Botswana. *Journal of Health, Population and Nutrition*, 347-357. Retrieved from http://ezproxy.uws.edu.au/login?url=https://www-proquest-com.ezproxy.uws.edu.au/scholarly-journals/prevalence-factors-associated-with-hiv-aids/docview/202993717/se-2?accountid=36155

Li, L., Wu, S., Wu, Z., Sun, S., Cui, H., & Jia, M. (2006). Understanding family support for people living with HIV/AIDS in Yunnan, China. *AIDS and Behavior, 10*(5), 509–517. http://doi.org/10.1007/s10461-006-9071-0

Lifson, A. R., Demisse, W., Ketema, K., Tadesse, A., May, R., Yakob, B., ... & Shenie, T. (2013). Failure to test for HIV in rural Ethiopia: knowledge and belief correlates and implications for universal test and treat strategies. *Journal of the International Association of Providers of AIDS Care (JIAPAC), 12*(5), 306-311. https://doi.org/10.1177/2325957413488199

Lui, P. S., Sarangapany, J., Begley, K., Musson, R., Ram, S., & Kishore, K. (2012). Knowledge, attitudes and behaviours of health care workers towards clients of sexual health services in Fiji. *Sexual Health, 9*(4), 323–327. http://doi.org/10.1071/SH11118

Lundberg, P. C., Doan, T. T. K., Dinh, T. T. X., Oach, N. K., & Le, P. H. (2016). Caregiving to persons living with HIV/AIDS: Experiences of Vietnamese family members. *Journal of Clinical Nursing, 25*(5-6), 788-798. doi:10.1111/jocn.13099

Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology, 27*, 363–385. https://doi.org/10.1146/annurev.soc.27.1.363

Lyons, C. E., Schwartz, S. R., Murray, S. M., Shannon, K., Diouf, D., Mothopeng, T., . . . Baral, S. (2020). The role of sex work laws and stigmas in increasing HIV risks among sex workers. *Nature Communications, 11*(1) doi:10.1038/s41467-020-14593-6

Ma, P. H. X., Chan, Z. C. Y., & Loke, A. Y. (2019). Self-stigma reduction interventions for people living with HIV/AIDS and their families: A systematic review. *AIDS and Behavior, 23*(3), 707-741. doi:10.1007/s10461-018-2304-1

Mahajan, A. P., Sayles, J. N., Patel, V. A., Remien, R. H., Ortiz, D., Szekeres, G., & Coates, T. J. (2008). Stigma in the HIV/AIDS epidemic: A review of the literature and

recommendations for the way forward. *AIDS (London, England), 22*(2), S67–S79. doi:10.1097/01.aids.0000327438.13291.62

Mahamboro, D. B., Fauk, N. K., Ward, P. R., Merry, M. S., Siri, T. A., & Mwanri, L. (2020). HIV stigma and moral judgement: Qualitative exploration of the experiences of HIV stigma and discrimination among married men living with HIV in Yogyakarta. *International Journal of Environmental Research and Public Health*, *17*(2), 636. doi:10.3390/ijerph17020636

Mason, S., Sultzman, V., & Berger, B. (2014). "Like being in a cage": Stigma as experienced by adolescents whose mothers are living with HIV. *Vulnerable Children and Youth Studies, 9*(4), 323-331. doi:10.1080/17450128.2014.933941

Matovu, S., Rankin, S., & Wallhagen, M. (2020). Ugandan Jajjas: Antecedents and rewards of caring for grandchildren in the context of HIV. *International Journal of Older People Nursing, 15*(2) doi:10.1111/opn.12304

Mendez-Lopez, A., McKee, M., Stuckler, D., Granich, R., Gupta, S., Noori, T., & Semenza, J. C. (2019). Population uptake and effectiveness of test-and-treat antiretroviral therapy guidelines for preventing the global spread of HIV: An ecological cross-national analysis. *HIV Medicine, 20*(8), 501-512. doi:10.1111/hiv.12750

Ministry of Health and Medical Services. (2016). *Republic of Fiji national strategic action plan on HIV and STIs 2016-2020.* Retrieved from https://hivhealthclearinghouse.unesco.org/library/documents/republic-fiji-national-strategic-action-plan-hiv-and-stis-2016-2020

McMillan, K., & Worth, H. (2010). *Risky business: sex work and HIV prevention in Fiji*. University of New South Wales, School of Public Health and Community Medicine.

McMillan, K., & Worth, H. (2011). *Sex workers and HIV prevention in Fiji-after the Fiji Crimes Decree 2009*. International HIV Research Group, School of Public Health and Community Medicine, the University of New South Wales. Retrieved from https://www.aidsdatahub.org/sites/default/files/resource/sex-workers-and-hiv-prevention-fiji-2009.pdf

Nyblade, L., & MacQuarrie, K. (2006). *Can we measure HIV/AIDS-related stigma and discrimination? Current knowledge about quantifying stigma in developing countries.* Washington DC: USAID. Retrieved from http://www.policyproject.com/pubs/generalreport/measure%20hiv%20stigma.pdf

Ogden, J., & Nyblade, L. (2005). *Common at its core: Across contexts*. Washington DC: International Center for Research on Women. Retrieved from

https://www.icrw.org/wp-content/uploads/2016/10/Common-at-its-Core-HIV-Related-Stigma-Across-Contexts.pdf

Ogunmefun, C., Gilbert, L., & Schatz, E. (2011). Older female caregivers and HIV/AIDS-related secondary stigma in rural South Africa. *Journal of Cross-Cultural Gerontology*, *26*(1), 85-102. doi:10.1007/s10823-010-9129-3

Okal, J., Lango, D., Matheka, J., Obare, F., Ngunu-Gituathi, C., Mugambi, M., & Sarna, A. (2020). "It is always better for a man to know his HIV status" - A qualitative study exploring the context, barriers and facilitators of HIV testing among men in Nairobi, Kenya. *PLoS ONE, 15*(4) doi:10.1371/journal.pone.0231645

Oluwagbemiga, A. E. (2007). HIV/AIDS and family support systems: A situation analysis of people living with HIV/AIDS in Lagos State. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*, *4*(3), 668-677. doi: 10.1080/17290376.2007.9724890

Omonaiye, O., Nicholson, P., Kusljic, S., & Manias, E. (2020). Perspectives of pregnant women, family members and health professionals on medication adherence in nigeria. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV,* doi:10.1080/09540121.2020.1776823

Ostermann, J., Reddy, E. A., Shorter, M. M., Muiruri, C., Mtalo, A., Itemba, D. K., ... & Thielman, N. M. (2011). Who tests, who doesn't, and why? Uptake of mobile HIV counseling and testing in the Kilimanjaro Region of Tanzania. *PLoS One*, *6*(1), e16488. https://doi.org/10.1371/journal.pone.0016488

Pacific Islands AIDS Foundation. (2009). *HIV/AIDS-related Stigma and Discrimination: Perspectives of HIV-Positive People in the Pacific*. Rarotonga: Pacific Islands AIDS Foundation.

Pacific Islands AIDS Foundation. (2011). *Experiences and Perspectives of Women living with HIV in Fiji and Papua New Guinea*. Rarotonga: Pacific Islands AIDS Foundation.

Pantelic, M., Sprague, L., & Stangl, A. L. (2019). It's not "all in your head": critical knowledge gaps on internalized HIV stigma and a call for integrating social and structural conceptualizations. *BMC Infectious Diseases*, *19*(1), 1-8. https://doi.org/10.1186/s12879-019-3704-1

Parker, R., & Aggleton, P. (2003). HIV and AIDS-related stigma and discrimination: a conceptual framework and implications for action. *Social Science & Medicine*, *57*(1), 13-24. https://doi.org/10.1016/S0277-9536(02)00304-0

Parker, R. G., Aggleton, P., & Horizons, P. C. (2002). *HIV/AIDS-related stigma and discrimination: A conceptual framework and an agenda for action*. Population Council New York. Retrieved from https://d1wqtxts1xzle7.cloudfront.net/46788549/HIV_and_AIDS-Related_Stigma_and_Discrimi20160625-22177-pjeh9s.pdf

Pharris, A., Hoa, N. P., Tishelman, C., Marrone, G., Chuc, N. T. K., Brugha, R., & Thorson, A. (2011). Community patterns of stigma towards persons living with HIV: A population-based latent class analysis from rural Vietnam. *BMC public health*, *11*(1), 705. https://doi.org/10.1186/1471-2458-11-705

Rodriguez-Hart, C., Bradley, C., German, D., Musci, R., Orazulike, I., Baral, S., . . . Nowak, R. G. (2018). The synergistic impact of sexual stigma and psychosocial well-being on HIV testing: A mixed-methods study among Nigerian men who have sex with men. *AIDS and Behavior, 22*(12), 3905-3915. doi:http://dx.doi.org.ezproxy.uws.edu.au/10.1007/s10461-018-2191-5

Ruan, F., Fu, G., Zhou, M., Luo, L., Chen, J., Hua, W., . . . Wang, J. (2019). Application of the Chinese version of Zelaya's HIV-related stigma scale to undergraduates in mainland China. *BMC Public Health, 19*(1) doi:10.1186/s12889-019-8054-9

Scambler, G. (2009). Health-related stigma. *Sociology of health & illness*, *31*(3), 441–455. doi: 10.1111/j.1467-9566.2009.01161.x

Siegel, K., Meunier, É., & Lekas, H-M. (2018). The experience and management of HIV stigma among HIV-negative adults in heterosexual serodiscordant relationships in New York city. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV, 30*(7), 871-878. doi:10.1080/09540121.2018.1441971

Salter, M. L., Go, V. F., Minh, N. L., Gregowski, A., Ha, T. V., Rudolph, A., . . . Quan, V. M. (2010). Influence of perceived secondary stigma and family on the response to HIV infection among injection drug users in Vietnam. *AIDS Education and Prevention, 22*(6), 558-70. doi:http://dx.doi.org/10.1521/aeap.2010.22.6.558

Smolak, A., & El-bassel, N. (2013). Multilevel stigma as a barrier to HIV testing in Central Asia: A context quantified. *AIDS and Behavior, 17*(8), 2742-55. doi:http://dx.doi.org.ezproxy.uws.edu.au/10.1007/s10461-013-0571-4

Stangl, A. L., Lloyd, J. K., Brady, L. M., Holland, C. E., & Baral, S. (2013). A systematic review of interventions to reduce HIV-related stigma and discrimination from 2002 to 2013: how far have we come? *Journal of the International AIDS Society*, *16*, 18734. https://doi.org/10.7448/IAS.16.3.18734

Stafford, K. A., Odafe, S. F., Lo, J., Ibrahim, R., Ehoche, A., Niyang, M., . . . Swaminathan, M. (2019). Evaluation of the clinical outcomes of the test and treat strategy to implement treat all in Nigeria: Results from the Nigeria multi-center ARt study. *PLoS ONE, 14*(7) doi:10.1371/journal.pone.0218555

Tanzania stigma-indicators field test group. (2005). *Measuring HIV stigma: Results of a field-test in Tanzania*. Washington, DC: Synergy.

Tesfay, F., Javanparast, S., Mwanri, L., & Ziersch, A. (2020). Stigma and discrimination: Barriers to the utilisation of a nutritional program in HIV care services in the Tigray region, Ethiopia. *BMC Public Health, 20*(1) doi:10.1186/s12889-020-09040-6

Tiyou, A., Belachew, T., Alemseged, F., & Biadgilign, S. (2010). Predictors of adherence to antiretroviral therapy among people living with HIV/AIDS in resource-limited setting of southwest ethiopia. *AIDS Research and Therapy, 7*, 39. http://doi.org/10.1186/1742-6405-7-39

UNAIDS. (2007). *Reducing HIV Stigma and Discrimination: a critical part of national AIDS programmes*. Geneva: Joint United Nations Programme on HIV/AIDS.

UNAIDS. (2016). *Fact sheet 2016*. Retrieved from http://www.unaids.org/en/resources/fact-sheet

Valdiserri, R. O. (2002). HIV/AIDS stigma: An impediment to public health. *American Journal of Public Health, 92*(3), 341–342. http://doi.org/10.2105/AJPH.92.3.341

Wight, R. G., Aneshensel, C. S., Murphy, D. A., Miller-Martinez, D., & Beals, K. P. (2006). Perceived HIV stigma in AIDS caregiving dyads. *Social Science and Medicine, 62*(2), 444-456. doi:10.1016/j.socscimed.2005.06.004