

Factors Contributing to HIV Related Stigma among Healthcare Providers in Public Health Institutions in Zambia

Article by Cecilia Chitambala¹, Peter Jay Chipimo², Brian Chanda Chiluba³, Brian Muyunda⁴

¹Department of Public health, Texila American University

²Zambia National Public Health Institute, Surveillance and Disease Intelligence Cluster

³School of Health Sciences, University of Zambia

⁴School of Public Health, University of Zambia

E-mail: cecilia_chitambala@yahoo.com¹, peterjchipimo@gmail.com²,

brian.chiluba@unza.zm³, muyundamwinanu@ymail.com⁴

Abstract

Background: One of the barriers to effective HIV response is the HIV-related stigma and discrimination among Healthcare providers towards patients receiving diagnostic procedure or treatment.

In Zambia, there are minimal research that have applied health behavioral models to evaluate the predictors of stigmatizing behavior associated with HIV among healthcare providers. Reducing HIV-related stigma may enhance the quality of HIV prevention and care. Hence reducing HIV related stigma should be a national prevention goal.

Methodology: This study used an analytic cross-sectional research design to investigate predictors of stigmatizing and discriminatory behavior among Healthcare providers in Lusaka urban, Zambia. Questionnaire data was collected and analyzed using SPSS and described using regression analysis to estimate the relationship between HIV related stigmatizing behavior, discriminatory acts, and personal attributes, job, environmental and demographic factors.

Results: 370 health care providers were included in the sample. Levels of stigma were reported by all groups included in the study. This included willingness to prohibit women living with HIV from having children (43%), wearing double gloves (64.5%), using special infection control measures (50%) and avoided physical contact (36.5%) when caring for HIV infected clients.

Conclusion: The study revealed that the stigma and discrimination associated with HIV by Healthcare providers in urban Lusaka was not unusual. Potential care and support for HIV patients should therefore concentrate more on strengthening the cognitions and behaviors of Healthcare providers toward People Living with HIV to ensure that they receive prompt and effective treatment and assistance.

Keywords: Stigma; Discrimination; Healthcare provider; People living with HIV, HIV.

Background

Zambia is geographically located in Southern Africa surrounded by quite a few countries. despite falling infection rates, prevalence among adults in Zambia has changed little over the last decade^[3]. Life expectancy among people living with HIV has significantly improved in recent years as a result of scaled-up treatment programmes. 75 per cent of people who have had access to antiretroviral therapy (ART) are now virally suppressed. HIV continues to fuel the country's tuberculosis epidemic^[3]. Women suffer

overwhelmingly from HIV, with the prevalence of young men and young women more than twice as high (Avert, 2020). As of 2018 there have been 1 200 000 people living with HIV in Zambia^[46]. New HIV infections among a vulnerable group during a certain time were 2.97 percent among all people of all ages, contributing to 48 000 newly infected with HIV in 2018 alone. While HIV prevalence was 11.3 percent among adults (15–49 years of age). 17 000 people died from AIDS-related diseases in 2018. The number of AIDS-related deaths has decreased since 2010, from 26 000 deaths to 17 000 deaths. The number of new

HIV infections has also been declining, from 56 000 to 48 000 over the same period. Human immunodeficiency virus (HIV) prevalence in Zambia continued to decline. Following almost three decades of public education on HIV and AIDS and new breakthroughs in disease management, it would have been predicted that history would have been stigma and prejudice. This was however not the HIV-related stigma story. Great progress has been made in managing HIV globally. It's recognized that we can stop HIV by continuing to promote routine testing and safe sex practices ¹. Stigma, though, can be detrimental to those efforts. Despite advances in HIV and AIDS prevention, HIV related stigma among Healthcare providers continues to be of public health concern. It persists, despite various initiatives formed to tackle this issue.

HIV-related stigma may lead to isolation which may affect the quality of life of people living with HIV. Stigma and prejudice can also make people at risk less likely to get tested for HIV and those with HIV less able to seek treatment, care and support. Blaming or abusing people living with or affected by HIV for their plight allows the underground epidemic to establish the ideal conditions for the spread of HIV. Studies have linked HIV related stigma to partners being unable to reveal HIV status and negative health outcomes ^[20].

HIV related stigma among Healthcare providers still remains a major barrier to an effective response to the HIV pandemic as it undermines diagnosis, treatment, and successful health outcomes. Addressing stigma among Healthcare providers is key to delivering quality health care and achieving optimal health care^[30].

In this study, demographic factors, personal attributes, environmental factors, job related factors were assessed to determine if they are predictors of HIV-related stigma.

The primary objective of this study was to identify factors contributing to HIV stigma and discrimination among Healthcare providers in order to recommend evidence-based interventions.

There is a population of 2,698 health care providers in Lusaka urban district. The sample size was derived by computing the minimum sample size required for accuracy in estimating proportions by considering the standard normal deviation set at 95% confidence level (1.96), percentage picking a choice or response (50% =

0.5) and the confidence interval (0.05 = ± 5). The study enrolled 370 health care providers from 8 health facilities in Lusaka, Zambia. The population of study consisted of different cadres of health care professionals that were currently serving in the health facilities in Lusaka, Zambia. The various professional groups consisted of 257 nurses, 30 doctors, 21 clinical officers, 19 pharmacy personnel, and 15 Environmental Health technicians (EHTs) and 28 laboratory technicians thus, making an overall a total of 370 health care providers from different grades of health facilities in Lusaka. Considering the classified management system of medical organizations issued by the Ministry of Health of the government of Zambia, public hospitals are classified into three grades (tertiary hospitals are better than secondary hospitals, which are in turn better than primary hospitals). To improve the sample representation, a stratified sampling method was adopted. Looking at the types and numbers of health facilities in Lusaka urban district, 1 tertiary hospital, 4 secondary hospitals and 3 primary hospitals bringing the total number to 8 health facilities were conveniently selected.

Data was collected from the questionnaire and entered data into SPSS version 21. The data was analyzed to produce both descriptive and inferential statistics. HIV-related discrimination was assessed using anonymous designed questionnaires. Regression analysis was used to demonstrate whether independent (demographic factors, personal attributes, environmental factors and Job-related factors) and dependent variables (stigma behaviour and discriminatory acts) are correlated to each other. The descriptive analysis of the sample was done using measures of central tendency, measures of Dispersion and measures of variability for demographic, environmental, personal attributes, and professional data. These are presented as frequency tables and graphs.

In order to examine the association between variables, Inferential statistics was used. Univariate and Multivariable logistic regression analysis was conducted to examine factors associated with stigma. The results from univariate analysis with P-value ≤ 0.05 was selected and used in the final model for the Multivariable logistic regression analysis. Unadjusted odds ratios (OR), and their 95% confidence intervals (CI) are reported.

One of the barriers to effective HIV response is the HIV-related stigma and discrimination

among Healthcare providers. An effective response to the HIV pandemic still represents a major obstacle. Stigma in health care facilities undermines diagnosis, treatment and health outcomes that are successful ^[32]. HIV-related stigma may lead to isolation which may affect the quality of life of people living with HIV. Stigma and prejudice can also make people at risk less likely to get tested for HIV and those with HIV less able to seek treatment, care and support. Blaming or abusing people living with or affected by HIV for their plight allows the underground epidemic to establish the ideal conditions for the spread of HIV. Studies have linked HIV and AIDS-related stigma to partners being unable to reveal HIV status and negative health outcomes ^[20]. Addressing stigma among Healthcare providers is critical for delivering quality health care and achieving optimal health care ^[32].

Scarcity of relevant research on stigma and discrimination related to the HIV-AIDS epidemic among Healthcare providers in Zambia, is a justification for undertaking this study. In Zambia, there are minimal research that have applied health behavioral models to evaluate the predictors of stigmatizing behavior associated with HIV. In addition, there have also been limited studies on the correlation of factors and their effect on stigma among variables such as demographic, personal, environmental, and employment related.

There have also been limited studies in Zambia on the correlation of factors and their effect on stigma among variables such as demographic, personal, environmental, and employment related. This study examined the connections between those variables. This cross-sectional study was based on the social cognitive theory paradigm, which uses the construct of reciprocal determinism to evaluate predictors of HIV-related stigma among Healthcare providers.

HIV stigma is widespread around the world ^[12]. HIV/AIDS-related stigma and discrimination occur in many settings, but they may have more serious consequences in health care settings ^[41]

In order for initiatives addressing the spread of HIV to have their maximum impact, stigma and discrimination needs to be addressed. Reducing HIV-related stigma may enhance the quality of HIV prevention and care as Stigma towards people living with HIV in health care settings is a barrier to optimal treatment. Hence reducing HIV

related stigma should be a national prevention goal.

Methods

The study was conducted from November 2019 to January 2020 with the aim of identifying factors contributing to HIV stigma and discrimination among Healthcare providers in Lusaka urban district in order to recommend evidence-based interventions. Lusaka is the largest and capital city of Zambia. This study was a cross-sectional study based on the social cognitive theory paradigm, which uses the construct of reciprocal determinism to evaluate predictors of HIV-related stigma among Healthcare providers. Constructs of Social Cognitive Theory (SCT) was used to determine the predictors of enacted stigma.

In order to examine the association between variables, Inferential statistics was used. Univariate and Multivariable logistic regression analysis was conducted to examine factors associated with stigma. The results from univariate analysis with P-value $\leq .05$ was selected and used in the final model for the Multivariable logistic regression analysis. Unadjusted odds ratios (OR), and their 95% confidence intervals (CI) are reported.

Data sources

Data collected was in notebooks and survey responses format. Planning was considered as the first step in managing the study data. The data collected on questionnaire responses was organized with consistent file naming by coding the responses and respondents. This was then entered and stored into the SPSS. Upon data verification, cleaning and analysis, the data was shared as part of the study report. After the study is completed the data was deposited and preserved in a repository for long-term archiving and access.

Study selection

There is a population of 2,698 healthcare providers in Lusaka urban district. The study adopted stratified sampling method to sample health providers. The study enrolled 370 Healthcare providers from 8 health facilities in Lusaka, Zambia. The population of study consisted of different cadres of Healthcare professionals that were currently serving in the health facilities in Lusaka, Zambia. The various

professional groups consisted of 257 nurses, 30 doctors, 21 clinical officers, 19 pharmacy personnel, and 15 Environmental Health technicians (EHTs) and 28 laboratory technicians thus, making an overall a total of 370 Healthcare providers from different grades of health facilities in Lusaka. Considering the classified management system of medical organizations issued by the Ministry of Health of the government of Zambia, public hospitals are classified into three grades (tertiary hospitals are better than secondary hospitals, which are in turn better than primary hospitals). Looking at the types and numbers of health facilities in Lusaka urban district, 1 tertiary hospital, 4 secondary hospitals and 3 primary hospitals bringing the total number to 8 health facilities were conveniently selected.

The study `considered different cadres of Healthcare providers' stigmatizing behaviour or comparing the behaviour across categories.

Data extraction

Data was collected from the questionnaire and entered data into SPSS version 21. The data was analyzed to produce both descriptive and inferential statistics.

The descriptive analysis of the sample was done using measures of central tendency, measures of Dispersion and measures of variability for demographic, environmental, personal attributes, and professional data. These are presented as frequency tables and graphs.

Results

Healthcare providers' demographic attributes

370 Healthcare providers were included in the sample. Descriptive results from the study showed that most of the study participants were female and nurses. There were 223 females, representing more than half of the sample. These findings are consistent with the projected population of Healthcare providers workers in public health institutions in Zambia.

Healthcare providers' job attributes

Amongst the 370 respondents, 227 (61.4%) reported they had experience in working with PLHIV, with 147 (64.8%) of the ones with such

experience having less than 1-year experience in work with this group, whereas 32.2% had more than 3 years of experience. Of the total sample, 8.1% were doctors, 5.7% were clinical officers, 4.1% were environmental technicians, 5.1% were pharmacy personnel, 7.6% were laboratory personnel, while the nurses represented 69.5%. Amongst all participants, 54.9% reported having received training on occupational exposure protection skills, and 23.5% had received an undergraduate education or above.

Healthcare providers' personal opinions on PLHIV and Key populations

Table 2 shows healthcare providers' personal opinions on PLHIV and key populations. On average, 21.6% of the respondents felt that women living with HIV should not get pregnant. In addition, 5.4% would prefer not to provide services to Men having Sex Men (MSM). Furthermore, 23.4% preferred not to provide services to Commercial Sex Workers (CSWs) because they put them at risk of contracting HIV, while 23.4% preferred not to provide services to Injection drug Users (IDUs) because they engage in immoral behavior.

Healthcare providers' environmental factors

When respondents were asked if they availability of standardized procedures/protocols and adequate supplies in their facilities that reduce risk of becoming HIV infected; In total, average of 22.75% of health care providers reported that they were satisfied with the protection system offered by the government for HIV occupational exposure, whereas 27.5 indicated dissatisfaction while 49.7% were neutral regarding the system.

21% strongly agreed and 35.8% agreed that their facilities have enough supplies while 44.6% felt that their facilities did not have enough supplies that would help reduce the risk of getting infected with HIV; 33.2% indicated that their facilities have standardized procedures/protocols in their facilities that reduce risk of becoming HIV infected, while 66.8% indicated that their facilities does not have standardized procedures/protocols in their facilities that reduce risk of becoming HIV infected.

Table 2. healthcare providers' Personal attributes and opinions on PLHIV

Variable	Category	CO	E.H.	MO	Pharmacy	Nurse	Lab
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Women Living with HIV should not get pregnant	Strongly agree	3(14.3)	1(6.7)	12(42.9)	2(11.1)	53(21.6)	8(32.0)
	Agree	4(19.0)	2(13.3)	5(17.9)	5(27.8)	49(20.0)	8(32.0)
	Disagree	5(23.8)	6(40.0)	4(14.3)	7(38.9)	76(31.0)	3(12.0)
	Strongly disagree	9(42.9)	6(40.0)	7(25.0)	4(22.2)	67(27.4)	9(36.0)
Would prefer not to provide services to MSM	Strongly agree	2(10.0)	1(9.1)	3(10.0)	0(0.0)	26(10.7)	2(8.0)
	Agree	1(5.0)	0(0.0)	3(10.10)	0(0.0)	21(8.6)	0(0.0)
	Disagree	9(45.0)	7(63.6)	8(26.7)	15(79.0)	103(42.2)	14(56.0)
	Strongly disagree	8(40.0)	3(27.3)	16(53.3)	4(21.0)	94(38.5)	9(36.0)
would prefer not to provide services to CSWs because they put me at risk of contracting HIV	Agree	3(75.0)	0(0.0)	1(14.3)	0(0.0)	26(51.0)	0(0.0)
	Disagree	1(25.0)	0(0.0)	6(85.7)	0(0.0)	25(49.0)	7(100.)
would prefer not to provide services to IDUs because they engage in immoral behavior	Agree	1(33.3)	0(0.0)	2(28.6)	1(33.3)	38(45.2)	0(0.0)
	Disagree	2(66.7)	0(0.0)	5(71.4)	2(66.7)	46(54.8)	5(100.0)

In Figure 1. When respondent were asked if would get in trouble at work if they discriminate against patients living with HIV; 66% acknowledged that they would get in trouble if they discriminate against patients living with

HIV, 9% indicated that they wouldn't be in trouble if discriminate against patients living with HIV, while 25% had no idea if they would be in trouble or not if discriminate against patients living with HIV.

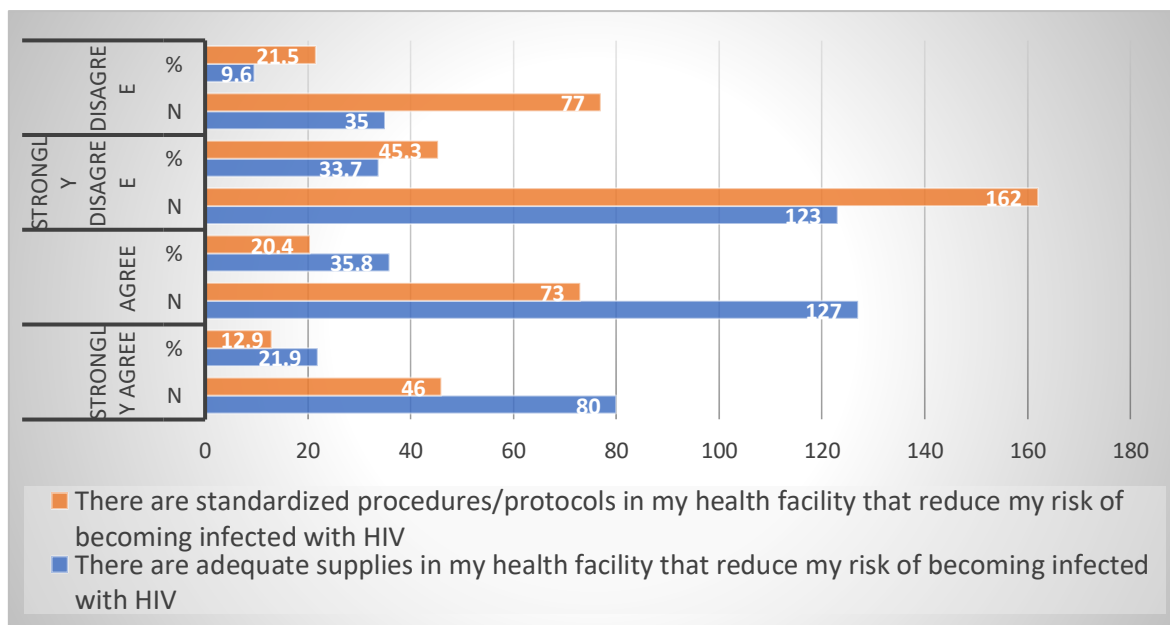
**Figure 1.** Health Facility Policy and work environment Stigma indicators of providers

Figure 2 shows healthcare providers' levels of awareness of punitive measures for discrimination. When respondent were asked if would get in trouble at work if they discriminate against patients living with HIV; 66% acknowledged that they would get in trouble if

they discriminate against patients living with HIV, 9% indicated that they wouldn't be in trouble if discriminate against patients living with HIV, while 25% had no idea if they would be in trouble or not if discriminate against patients living with HIV.

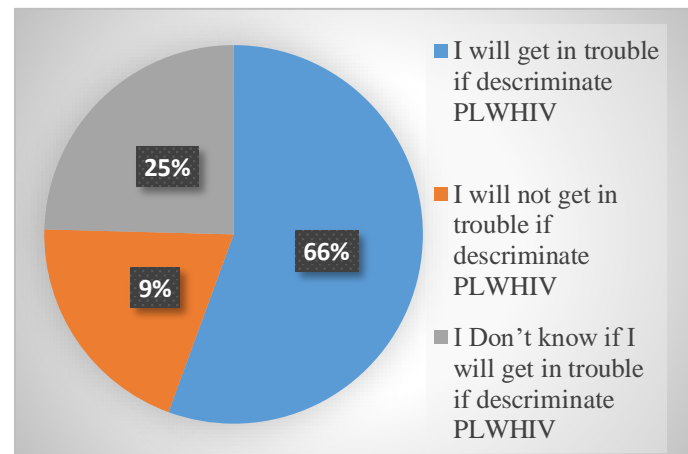


Figure 2. Facility based indicators for stigma of health workers

Multivariable logistic regression results

The multivariable logistic regression results are displayed in Table 3. Final model included variables that were significant in their univariate analysis. In the Multivariable model of “avoid physical contact”, health facility having Protocols and Procedures to protect Healthcare providers from getting infected with HIV, Women Living with HIV should not get pregnant, preferring not to provide services to IDUs because they engage in immoral behavior , and preferring not to provide services to MSM remained significant influential determinant of health provider stigma and discrimination. The model of “wear double gloves” showed that in addition to number of years a Healthcare provider worked in health care, health facility having Protocols and Procedures to protect Healthcare providers from

getting infected with HIV, women Living with HIV should not get pregnant continued to influence stigma and discriminatory behavior by Healthcare providers. However, preferring not to provide services to IDUs because they engage in immoral behavior, and prefer not to provide services to MSM did not influence stigma of Healthcare providers. On the model of “Use special Infection control measures”, only preferring not to provide services to CSWs because they put Healthcare providers at risk of contracting HIV remained a significant catalyst for health providers stigma.

This study hypothesizes that personal attributes, job and environmental factors of healthcare providers significantly predict HIV-related treatment prejudice and stigmatization expressed among healthcare providers in the study areas.

Table 3. Multivariable logistic regression analysis of discrimination towards PLHIV

Discrimination/stigma	Variables	Univariate Analysis		Multivariable Analysis	
		OR (95% CI)	P-Value	AOR (95% CI)	P-Value
Avoid physical contact when caring for PLHIV	Health facility has Protocols and Procedures to protect Healthcare providers from getting infected with HIV				
	Strongly Agree	Ref.			
	Agree	0.04(0.01,0.12)	<0.001	0.06(0,1.58)	0.09
	Disagree	0.13(0.06,0.27)	<0.001	0.11(0.01,1.01)	0.05
	Strongly Disagree	0.22(0.12,0.4)	<0.001	0.45(0.07,2.79)	0.39
	Women Living with HIV should not get pregnant				
	Strongly Agree	Ref.			
	Agree	0.09(0.04,0.19)	<0.001	0.04(0,0.39)	0.01
	Disagree	0.08(0.03,0.17)	<0.001	0.36(0.04,2.89)	0.33
	Strongly Disagree	0.45(0.26,0.8)	0.01	0.56(0.11,2.8)	0.48
	would prefer not to provide services to IDUs because they engage in immoral behavior				
	Agree	Ref.			
	Disagree	0.3(0.12,0.79)	0.02	0.19(0.05,0.74)	0.02
	would prefer not to provide services to MSM				
	Strongly Agree	Ref.			
	Agree	1(0.44,2.3)	0.99	15.92(1.05,241.74)	0.05
	Disagree	2.22(0.93,5.3)	0.07	64.44(3.23,1286.23)	0.01
	Strongly Disagree	1.7(1.04,2.78)	0.03	9.49(0.71,126.14)	0.09
Wears double gloves when caring PLHIV	How Many years have u worked in Health Care				
	<6 months	Ref.			
	6_11months	1.54(0.84,2.8)	0.16	1.08(0.56,2.09)	0.82
	1_3years	0.48(0.24,0.97)	0.04	0.58(0.27,1.25)	0.17
	4_5years	0.73(0.38,1.42)	0.36	0.68(0.33,1.41)	0.30
	>5years	0.38(0.18,0.82)	0.01	0.44(0.19,0.98)	0.05
	Women Living with HIV should not get pregnant				

	Strongly Agree	Ref.			
	Agree	2.79(1.48,5.28)	<0.001	1.75(0.83,3.7)	0.14
	Disagree	2.92(1.53,5.57)	<0.001	1.99(0.98,4.04)	0.06
	Strongly Disagree	1.22(0.65,2.29)	0.55	1(0.51,1.99)	0.99
Uses special infection control measures only when caring for PLHIV	would prefer not to provide services to CSWs because they put me at risk of contracting HIV				
	Agree	Ref.			
	Disagree	0.15(0.03,0.76)	0.02	0.15(0.03,0.76)	0.02

Discussion

370 Healthcare providers were included in the sample. Descriptive results from the study showed that most of the study participants were female and nurses. There were 223 females, representing more than half of the sample. These findings are consistent with the projected population of Healthcare providers workers in public health institutions in Zambia. The study revealed that personal attributes, environmental factors and job-related factors have an influence on stigmatizing behaviour of Healthcare providers. However, the study showed that demographic factors do not have an effect on Healthcare providers' stigmatizing and discriminatory behaviour. Thus, marital status, gender and qualifications do not influence Healthcare providers' stigmatizing behaviour. Therefore, the null hypothesis was accepted. A study by Li et al. (2007) however showed a relation between stigma and age of the Healthcare provider.

Respondents that agreed that women living with HIV should not get pregnant had 96% reduced odds of avoiding physical contact when caring PLHIV compared to those that strongly agreed [AOR=0.03, 95% CI (0.00,0.39), P-value =0.01]. In addition, respondents that disagreed that women living with HIV should not get pregnant had 2 times odds of wearing double gloves when caring for PLHIV compared to those that strongly agreed [AOR=1.99, 95% CI (0.98,4.04), P-value =0.056]. Though not statistically significant, this finding has some level of significance. The findings of this study are in consistent with the findings of a study conducted by Rochon (2005) investigating the ability of Healthcare providers to discuss the possibility of HIV infection and pregnancy, and

to view the benefits and risks of perinatal transmission and antiretroviral therapy during pregnancy objectively. The study showed that even among Healthcare providers, HIV continued to carry enormous social stigma, since they still questioned the appropriateness of childbearing by women living with HIV. Rochon's study also showed that women were warned against pregnancy from the early days of the AIDS epidemic to the present mood of moral rectitude, women living with HIV tend to be facing continued resistance from the same health care system that is intended to sustain them through their childbearing years.

Respondents that disagreed to preferring not to provide services to IDUs because they engage in immoral behaviour had 80% reduced odds of avoiding physical contact when caring for PLHIV compared to those that strongly agreed [AOR=0.19, 95% CI (0.05,0.74), P-value = 0.02]. In addition, respondents that agreed to preferring not to provide services to MSM had 16 times odds of avoiding physical contact when caring for PLHIV compared to those that strongly agreed [AOR=15.92, 95% CI (1.05, 241.74.74), P-value = 0.05]. Furthermore, respondents that disagreed to preferring not to provide services to MSM had 64 times odds of avoiding physical contact when caring for PLHIV compared to those that strongly agreed [AOR=64.4, 95% CI (3.23,1286.22, P-value = 0.01]. Respondents that disagreed to preferring not to provide services to CSWs because they put Healthcare providers at risk of contracting HIV had 85% reduced odds of using special infection control measure only when caring for PLHIV compared to those that strongly agreed [AOR=0.15, 95% CI (0.03,0.76), P-value = 0.02]. The study suggests that perhaps personal safety issues are among the most prevalent and recurrent issues that affect understanding among

Healthcare providers about the risk of HIV infection. In line with our findings, a study conducted by Lin et al. (2007), in Yunnan, China, on workplace HIV exposure to Healthcare providers, revealed that Healthcare providers were greatly concerned about the fear of HIV infection among them. Previous studies have also established that HIV related stigma acts as a barrier to service provision and that stigmatized conduct leads to a reduction in targeted treatments by Healthcare providers. Their concerns branch from the high volume of patients living with HIV in their health care facilities and their inability to differentiate between infected people at times. Healthcare provider would feel more comfortable providing services to PLHIV if the general population regarded HIV/AIDS as a common disease. They would also get less stress and anxiety when they're at work exposed to HIV. It is okay to be worried, but if concern interferes with the delivery of service, then it calls for worry.

This study revealed the stigmatized mind-set of the respondents. The reasons given for unwillingness to provide services to the key populations are consistent with the findings of a study conducted by Zarei et al. (2015) that revealed that a majority of the respondents preferred not to provide health services to key populations due to their participation in unethical behaviour, including fear of illness, and fear of being linked to that group. The Behravan et al. (2011) study further highlights this finding that the AIDS sticky tag is associated with high-risk activities such as sexual and moral promiscuity, homosexuality and drug abuse. Contrary to our findings, a study conducted in Italy by Marranzano et al. (2013) showed that although HIV was the primary concern of nurses when it came to handling occupational infections (54%), the vast majority (98%) never denied HIV/AIDS treatment and that were willing to provide service to any groups of patients including sex workers, drug injectors and homosexuals. In addition, the results of the Abler et al. (2014) study are not consistent with the findings of our study indicating that high-risk behaviours of patients are associated with a higher stigmatized attitude.

Respondents that disagreed that health facility has protocols and procedures to protect Healthcare providers from getting HIV infection had 90% reduced odds of avoiding physical contact when caring for PLHIV compared to

those that strongly agreed [AOR=0.11, 95% CI (0.01,1.01), P-value = 0.05]. Although this was not statistically significant, the finding has some level of significance.

Our study is in consistent with the findings of a study conducted by Mashoto et al. (2013), on estimated risk of HIV transmission and the management of occupational exposure among Healthcare providers in Tumbi and Dodoma Hospitals in Tanzania, that revealed that more than half of the sections witnessed lacked recommendations for preventing and managing the occupational risk of HIV infection and well-displayed guidance for health and safety. Our findings on the protocols and guidelines to protect Healthcare providers from getting infected with HIV were not in consistent with the findings of a study conducted by Amoah (2015), that showed that the environmental factors, which were HIV policies and infection control protocols and regulations, did not significantly predict stigma associated with HIV among Healthcare providers. It is generally assumed that policies and guidelines are necessary to change actions for the good of the general public. HIV policies and guidelines in the health care facility can therefore be presumed to promote a stigma-free environment and an atmosphere where prevention of infections is assured and maintained. The health of Healthcare providers should be accorded more priority to health facility management. Departmental leaders at health facilities should be promoting protocols and procedures to be followed. Departmental heads should improve their awareness of these protocols and procedures during their day-to-day work.

Respondents that had more than 5 years of work experience in health care had 60% reduced odds of wearing double gloves when caring for PLHIV compared to those with less than 6 months experience [AOR=0.44, 95% CI (0.19,0.981), P-value = 0.05]. This finding suggests that experienced Healthcare providers have better understanding of HIV transmission. Hence, they use appropriate infection control measures.

Using wearing double gloves only when providing services to PLHIV is an act of stigma and discrimination. Firstly, the training should give Healthcare providers a better understanding of the HIV/AIDS epidemic in Zambia and make them aware that HIV/AIDS is no longer an

"alien" disease. Secondly, compulsory alert is the first line of defense to avoid occupational exposures. Training will increase Healthcare provider's understanding of universal prevention, which demands that each patient be identified as HIV-positive, thereby reducing the risk of occupational exposure and thereby reducing discrimination. In contrast to our findings, a study by Amoah. (2015) indicates that her study did not show any significant relationship between stigma and years of practice.

Limitations

Although the study has several interesting findings, some weaknesses should be discussed, as the study was conducted in urban Lusaka, Zambia, where HIV infection has a high prevalence; findings in one urban setting of Zambia may not be generalizable to Healthcare providers. The data were collected from just one city; therefore, caution should be exercised when generalizing these findings to another population or other geographical locations. However, every effort was made to recruit Healthcare providers from different levels of health care. Therefore, the results provide effective support to the need for HIV-related stigma-reduction measures in the health care setting in Zambia.

This study used a convenience sampling method to pick enrolled health facilities. As a result, useful results were obtained, but the results are vulnerable to significant bias, as those who are chosen to participate would have varied from those who are not selected, and the sample may not be representative of other characteristics, such as geographical areas. The demographic does not include Healthcare providers and services from the country's other areas. There may have been some factors peculiar to these regions that may have affected the stigma associated with HIV.

The data collection tool used (questionnaire) is designed to collect data on HIV-related stigma among Healthcare providers but not on the concept of social cognitive theory, and thus may be a limitation for this study. However, the social cognitive theory constructs are all captured in the questionnaire.

Conclusions

The study suggested that levels of stigma were reported by all groups included in the study.

The study revealed that personal attributes, environmental factors and job-related factors have an influence on stigmatizing behaviour of Healthcare providers. However, the study showed that demographic factors do not have an effect on Healthcare providers' stigmatizing and discriminatory behaviour.

Overview, the study has shown that there is scarcity of relevant research on stigma and discrimination related to the HIV-AIDS epidemic among Healthcare providers in Zambia, even though there is much empirical evidence demonstrating the role of stigma in people and communities ' involvement in health-related activities. Furthermore, the study revealed that levels of stigma and discrimination still exist among Healthcare providers. It is important to note that stigma remains an obstacle to all the essential components of a good program of HIV prevention, care and treatment, and so, much detailed research on stigma reduction is needed to improve the components of a good program of prevention, care and treatment.

Results of the study suggests that reduction of stigma should be a major player in designing and implementing HIV/AIDS prevention programs to achieve universal coverage for many initiatives. A significant proportion of population and person stigma epidemiology effort is needed with the scaling up of new antiretroviral drugs, better delivery systems, and pediatric AIDS prevention, as the potential for a HIV vaccine remains in the distant future.

To produce de-stigmatization programs in hospitals, the news media, home videos, radio jingles etc. should be used. Initiatives for health education should include a shift from fear to concern for PLHIV, as this is particularly important for Healthcare providers. Further research is needed to study the role of culture, religion and social structures and their relationship to the stigmatization attitudes by Healthcare providers in the different health facilities that make up the population of over 2,698 Healthcare providers in the urban district of Lusaka.

References

- [1]. ACON. (2020). Ending HIV stigma.
- [2]. Andrewin, A. Chien, LY. (2008). Stigmatization of patients with HIV/AIDS among doctors and nurses in Belize. Belize: US National Library of Medicine National Institutes of Health.

- [3]. Avert. (2018). HIV Stigma and Discrimination. Global information and education on HIV and AIDS.
- [4]. CATIE. (ND). HIV in Canada: A primer for service providers.
- [5]. Chafea. (2015). Proposal to carry out a Behavioural Survey for HIV/AIDS and associated infections and a survey and tailored training for community-based health workers to facilitate access and improve the quality of prevention, diagnosis of HIV/AIDS, STI and viral hepatitis and health care services for men who have sex with men.
- [6]. Chishinga, N. Kinyanda, E. Weiss, H.E. Patel, V. Ayles, H. & Seedat, S. (2011). Validation of brief screening tools for depressive and alcohol use disorders among TB and HIV patients in primary care in Zambia.
- [7]. Cremers, A.L. Manon de Laat, M. Kapata, N. Gerrets, R. Klipstein-Grobusch, K. Grobusch. M.P. (2015). Assessing the Consequences of Stigma for Tuberculosis Patients in Urban Zambia.
- [8]. David, S. (2014). World Aids Day: stigma still the biggest challenge in Zambia. *The Guardian*.
- [9]. Dawson-Amoah, CG. (2015). Determinants of HIV Stigma Among Health care workers in Ghana. Ghana: Walden University scholar works.
- [10]. De Sousa Dantas, M. Da Silva Abrão, F.M. Silvestre Monteiro de Freitas, C.M. Cristina de Oliveira, D. (2014). Social representations of HIV/AIDS among health care professionals in benchmark services.
- [11]. Doka, S. Danjin, M. Dongs, L. (2017). HIV/AIDS-related stigma and discrimination among health care providers in a tertiary health facility. Gombe Nigeria: *Journal of medical sciences*.
- [12]. Dong, X. Yang, J. Peng, L. Pang, M. Zhang, J. Zhang, Z. Rao, J. Wang, H. Chen, X. (2018). HIV-related stigma and discrimination amongst health care providers in Guangzhou, China. *BMC Public Health*.
- [13]. Ekstrand, ML, RamakrishnaJ, BS, Heylen E. Prevalence and drivers of HIV stigma among health providers in urban India: implications for interventions. *J Int AIDS Soc*. 2013;16(3 Suppl2):1–12.
- [14]. Environmental Health & Toxicology information. (ND). Exposure Assessment.
- [15]. Finney, J. (1970). Time and again. New York, NY: Simon and Schuster.
- [16]. Freeman, J. and Young, T. (2009). Correlation coefficient: association between two continuous variables.
- [17]. Kafuko, A. (2009). HIV/AIDS Stigma and Discrimination among People Living With HIV, Caretakers of HIV+ Children and Religious Leaders. Kampala: Johns Hopkins Center for Communication Programs.
- [18]. LaMorte, W. (2019). The Social Cognitive Theory. Boston: Boston University School of Public Health.
- [19]. Mahajan, A. P. Sayles, J.N. Patel, V.A. Remien, R.H. Ortiz, D. Szekeres, G. and Coates, T.J (2008). Stigma in the HIV/AIDS epidemic: A review of the literature and recommendations for the way forward.
- [20]. Martinez JI, Harper G, Carleton RA, Hosek S, Bojan K, Clum G, Ellen J (2012). The impact of stigma on medication adherence among HIV-positive adolescent and young adult females and the moderating effects of coping and satisfaction with health care. *AIDS Patient Care STDS*.
- [21]. Mnqayi, C.V. (2013). The level of HIV/AIDS knowledge amongst female young adults and factors that inhibits them from negotiating condom usage.
- [22]. Mohammadi, M. Rampal, R. Abdullah, B.M. Rahman, H.B. (2009). Knowledge, attitudes and sexual behaviors related to HIV/AIDS prevention amongst Malaysian adolescents. Department of Community Health, Faculty of Medicine and Health Sciences University Putra Malaysia.
- [23]. Monjok, E. Smesny, A., and Essien, J. (2010). HIV/AIDS - Related Stigma and Discrimination in Nigeria: Review of Research Studies and future directions for Prevention Strategies. Rockville Pike, Bethesda MD: US National Library of Medicine National Institutes of Health.
- [24]. Mukasa, A. (2008) Stigma and Discrimination Faced by People Living with HIV/AIDS: A review of Literature Based on Attitudes, Beliefs and Practices, Prepared for Health Communication Partnerships.
- [25]. NAM. (2019). No reduction in HIV stigma in San Francisco, 2011 to 2017.
- [26]. Ndonyo. R. L (2005). Assessing Quality and Responsiveness of Health Services for Women in Crises Settings: Zambia Case Study Report. The University of Zambia, School of Medicine, Department of Community Medicine, Lusaka, Zambia.
- [27]. Nelson, MK. (2012). How to tackle HIV stigma among health care workers. England: NAM Publications.
- [28]. Network of Zambian People Living with HIV/AIDS. (2012). The people living with HIV stigma index.
- [29]. Nieuwenhuijs, J. (2008). Exposure assessment. Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain.
- [30]. Nyblade, L. Stangl, A. Weiss, E and Ashburn, K. (2009). Combating HIV stigma in health care settings:

what works?: Journal of the international AIDS society.

[31]. Nyblade, L. Srinivasan, K. Mazur, A. Raj, T. Patil, S. D. Devadass, D. Radhakrishna, L. and Ekstrand, M.L. (2018). HIV Stigma Reduction for Health Facility Staff: Development of a Blended-Learning Intervention. *Front Public Health*.

[32]. Nyblade, L. Stockton, M.A. Giger, K. Bond, V. Ekstrand, M.L. McLean, R. Mitchell, E.M.H. La Ron Nelson, E. Sapag, J.C. Siraprasiri, T. Turan, J. & Wouters, E. (2019). Stigma in health facilities: why it matters and how we can change it.

[33]. Oskouie, F. Kashefi, F. Rafii, F. and Gouya, M.M. (2017). Qualitative study of HIV related stigma and discrimination: What women say in Iran. *Electron Physician*. 2017 Jul; 9(7): 4718–4724.

[34]. Phoenix, KH and Charlson, TY. (2017). Stigmatization among people living with HIV in Hong Kong: A qualitative study. Rockville Pike, Bethesda MD: US National Library of Medicine National Institutes of Health.

[35]. Reis, C. Heisler, M. Amowitz, L. Moreland, R.S. Mafeni, J. Anyamele, C. Iacopino, V. (2005). Discriminatory Attitudes and Practices by Health Workers toward Patients with HIV/AIDS in Nigeria.

[36]. Samuel, K. (2018). Stigma remains a substantial barrier in accessing HIV care in rural East Africa.

[37]. Siström, C.L. and Garvan, C.W. (2004). *Statistical Concepts Series*.

[38]. Sopitshi, A and Niekerk, L. V. (). Country profile: Zambia. University of Cape Town.

[39]. The Joint United Nations Programme on HIV/AIDS. (2008). *Terminology Guidelines*. Geneva, Switzerland: UNAIDS.

[40]. Thornicroft, G. (2008). *Discrimination and Stigma Scale DISC 12*. The INDIGO Study Group: Institute of Psychiatry, King's College London.

[41]. UNAIDS (2006). *Report on the Global AIDS Epidemic*. New York: United Nations Publications.

[42]. UNAIDS. (2008). *2008 Report on the Global AIDS Epidemic*. New York: United Nations Publications.

[43]. UNAIDS. (2009). *2009 Report on the Global AIDS Epidemic*. New York: United Nations Publications.

[44]. UNAIDS. (2011). *2011 Report on the Global AIDS Epidemic*. New York: United Nations Publications.

[45]. UNAIDS. (2012). *2012 Report on the Global AIDS Epidemic*. New York: United Nations Publications.

[46]. UNAIDS. (2019). *Zambia HIV overview*.

[47]. UNDP. (2011). *Research on HIV stigma and discrimination among health care workers in public and private health care sector in BiH*. Bosnia and Herzegovina: UNDP.

[48]. USAID (2014). *Key population: Targeted approaches toward an AIDS-free generation*.

[49]. Vorasane, S. Jimba, M. Kikuchi, K. Yasuoka, J. Nanishi, K. Durham, J. Sychareun, V. (2017). An investigation of stigmatizing attitudes towards people living with HIV/AIDS by doctors and nurses in Vientiane, Lao PDR. Rockville Pike, Bethesda MD: PubMed.

[50]. Wagner, AC. Hart, TA. McShane, KE. Margolese, S. Girard, TA. (2014). *Health care provider attitudes and beliefs about people living with HIV: Initial validation of the Health Care Provider HIV/AIDS Stigma Scale (HPASS)*. Toronto, ON: US National Library of Medicine National Institutes of Health.