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Socio-economic Determinants of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome Awareness and Stigma of Residents in Sorsogon, Philippines

GRAHAM M. NAZ
ORCID NO. 0000-0002-5002-628X
naz.graham@yahoo.com

MICHAEL A. CLORES
ORCID NO. 0000-0002-4671-5699
mclores@gbox.adnu.edu.ph

Ateneo de Naga University
Naga City, Philippines

ABSTRACT

Understanding the community's awareness and stigma towards Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome is a key in determining effective risk reduction programs. Thus, the study determined the levels of awareness and stigma of the residents towards HIV/AIDS in the province of Sorsogon; and the relationship of the said levels with the residents' socio-economic factors were also tested. This cross-sectional study surveyed 384 respondents determined through systematic random sampling using HIV/AIDS awareness questionnaire and Genberg et al's Stigma and Discrimination Scale. Results revealed that the residents' HIV/AIDS awareness and stigma is on a moderate level, which indicates of basic, but insufficient knowledge towards HIV/AIDS, as well as the continued prevalence of its related stigma. Test of correlation revealed that the residents' level of awareness and their level of stigma towards HIV/AIDS are significantly related. Multivariate correlation test also indicated that the residents' levels of awareness and stigma towards HIV/AIDS are significantly correlated with their socio-economic factors. Among the factors, education level and marital status displayed as the significant predictors of HIV/

AIDS awareness and stigma, which means that the higher the education level and being unmarried, higher the awareness and the lower the stigma towards HIV/AIDS. Community-based awareness campaign to continuously reduce the stigma is recommended and should target the out-of-school and the less educated adults.

Keywords: HIV/AIDS, awareness, stigma, socio-economic factors, Sorsogon

INTRODUCTION

According to the United Nations, the Philippines continues to experience an alarming increase of HIV cases over the recent years, compared to many countries around the world (Geronimo, 2016). Department of Health (DOH, 2018), through the Bureau of Epidemiology, stated that there are 56,275 reported cases from 1984 up to June of 2018. In 2018, there was an average of 31 HIV cases reported daily, while it was only 22 cases per day in 2015, 13 in 2013, seven in 2011 and one in 2008. From 2008 up to the current year, the Philippines experiences the fastest growing HIV epidemic in the Asia-Pacific region, while most of its countries experience decreasing pattern. The Philippines' neighbors, Thailand, Cambodia and Malaysia, have significantly declined by 30%.UNAIDS (United Nations agency for AIDS) reported that the Asian continent has declined by 5%. The director of UNAIDS for Asia and the Pacific, Steven Kraus, said that the Philippines is on the risk of letting the infection get uncontrollable (Aznar, 2017).

As shown in the DOH report on HIV, the concentration of HIV cases can be found in the highly-urbanized cities, such as Metro Manila, Metro Cebu, and the CALABARZON regions (DOH, 2018). However, the increasing number of cases can be also found in the countryside, such as the province of Sorsogon. Sorsogon had only 11 HIV cases in 2014, but in 2017, it ballooned to 74 reported cases (Barcia, 2017), and 26 more cases were added in 2018 (Arguelles, 2018). Evidently, the province is also following the pattern of drastically increasing cases.

This rapid increase of HIV cases can be effectively controlled by stringent prevention practices. One strong deterrent to prevention practice is the prevalence of HIV/AIDS-related stigma. When such stigma is prevalent, people are afraid to get tested, seek treatment and take preventive actions (Tomaszewski, 2012). And there is no other way to eliminate the stigma than to educate people. In other words, in order for people to observe prevention practices, they should be

sufficiently educated. As the World Bank (2008) states, the education vaccine remains to be the most effective vaccine against HIV.

Determining the levels of awareness and stigma of the residents towards HIV/AIDS is vital in designing an efficient awareness campaign. Furthermore, determining the influence of the social and economic factors of the residents to their levels of awareness and stigma towards HIV/AIDS is significant in identifying the demographics that require it the most.

FRAMEWORK

The study is anchored on the Health Belief Model which holds that an individuals' perception towards the disease influences his/her behavior towards it and the change of perception effects in change of behavior. It was first developed in 1950 by social psychologists Hochbaum, Rosenstock, and Kegel. The theory uses four perceptions as the construct of the model, which are, perceived susceptibility, perceived severity, perceived benefits and perceived barriers. These perceptions are also modified by the demographic circumstance of the individual such as age, sex, ethnicity, personality, education, past experience, and other socioeconomic characteristics (Hayden, 2012). The residents' perception towards HIV/AIDS is formed by their awareness and stigma towards it; and the said perception is influenced by the residents' demographic circumstance, such as their age, sex, marital status, education, income and occupation. Health Belief Model, thus, explains that the rising cases of HIV and AIDS are due to the residents' flawed perception of them, which was due to lack of awareness and the prevalence of stigma.

OBJECTIVES OF THE STUDY

The levels of the residents' awareness and stigma towards HIV/AIDS and their relationship to the residents' social and economic factors were determined in this study. Specifically, the study aimed to realize these objectives: (1) determine the residents' level of awareness towards HIV/AIDS; (2) ascertain the residents' level of stigma towards HIV/AIDS; (3) test the relationship of the residents' level of HIV/AIDS awareness and their HIV/AIDS stigma; and (4)correlate the levels of awareness and stigma towards HIV/AIDS with the residents' social and economic factors, such as age, sex, marital status, education, income, and occupation.

METHODS

The study utilized the cross-sectional, descriptive, explanatory and quantitative research design. The locale of the study was in Sorsogon province, Bicol region, Philippines. Residents of the province, who were of legal age and residing for the last five years, were the particpants of the study. With a population of 792,949 as of August 2015 (PSA, 2016), sample size of 384 was derived from a sample size calculator provided by Creative Research Systems (2012) using 5% confidence interval and 95% confidence level.

The 384 target respondents were distributed to the 15 towns/city of the province. Two barangays (villages) were randomly selected from each town/city. And the respondents were selected using systematic random sampling with a random start. The survey distribution started from the randomly selected barangay landmarks—barangay hall, auditorium, barangay chapel, and elementary school. Two household intervals and the right-side direction method were followed.

Survey questionnaire was used as instrument in this study, which were divided into three sections. First is the demographic question (age, sex, marital status, education level, income, and occupation), second is the HIV/AIDS awareness questionnaire and third is the Stigma and Discrimination Scale. The 30-point HIV/AIDS awareness questionnaire was modified from UNICEF (2011) and Lata & Singh (2015) studies, which aims to cover the five aspects of HIV/AIDS such as etiology, signs and symptoms, mode of transmission, test and treatment, and prevention. The questionnaire underwent face validation by a health officer of the local government in Bulan, Sorsogon, Pilot testing was carried out and reliability was tested through Cronbach Alpha with an alpha coefficient of .878. The 22-item Stigma and Discrimination Scale was adapted from Genberg et al (2008) in his study, "Assessing HIV/AIDS stigma and discrimination in developing countries".

To interpret responses from HIV/AIDS awareness questionnaire, correct answers were summed up. Responses with six or less, seven to 12, 13–18, 19–24, and 24 above were interpreted as with very low, low, moderate, high and very high awareness levels respectively. To interpret responses from Stigma and Discrimination Scale, the responses were scored 1 – 4 according to the 4-point Likert scale. Negatively-framed questions were scored 1, 2, 3 and 4 when strongly agreed, agreed, disagreed and strongly disagreed upon. Positively-framed questions were reverse-coded. Mean of responses were taken and interpreted accordingly. Mean of 1.0–1.7, 1.7 –2.20, 2.21–2.80, 2.81–3.40, 3.41–4.00 were

interpreted respectively as very low, low, moderate, high and very high awareness.

Stringent ethical considerations were observed in the entire duration of the study. Participation in the study was voluntary and respondents were briefed of the data gathering purpose. Confidentiality and anonymity were strictly observed. Copy of the manuscript was submitted to Institutional Research Ethics Committee for assessment.

Descriptive and inferential statistics were used to analyse the data. All data were encoded and analysed using SPSS (version 17). The levels of awareness and stigma were analysed using mean, SD and percentage. Bivariate correlation between awareness and stigma levels were tested using Pearson r; and multivariate correlation of the levels of awareness and stigma and the social factors were tested using Canonical Correlation Analysis. In all statistical tests, significance level of <5% were used.

RESULTS AND DISCUSSION

Demographic Profile of respondents

Majority of respondents were coming from the age group 18-24 (26%), 25-34 (27%), and 35-44 (20%). Half of the respondents were male (51%) and female (49%). Majority of the respondents are married (60%) which include those cohabitating with partners, widowed, and separated. Most respondents were in high school level (21%), high school graduate (26%) and college level (24%). Most respondents are earning between 5,000 - 10,000 pesos per month (40%). In terms of occupation, most respondents came from sales and service (26%), followed by housekeepers (19%). To the residents, the terms HIV/AIDS are no longer foreign as almost all (93%) have encountered and heard it. The high rate of familiarity of the residents with HIV/AIDS, but with inadequate knowledge, was also found in a study conducted in Kosovo, Nigeria, Sri Lanka, and India. Familiarity rate were 90%, 93%, 99%, and 89% respectively and unanimously found insufficient and low levels of knowledge towards HIV (UNKT, 2008; REACH, 2010; Navaratna et al., 2015; Chharang, Choudhary, Pankaj, 2016).

Level of awareness of the residents towards HIV/AIDS

Table 1

Proportion of residents' awareness according to specific facts about HIV

Facts about HIV	*Correct Answer*	*N*	*%*
Etiology			
1. HIV is a sex-related disease.	Yes	353	92
2. HIV virus can be found in the semen.	Yes	304	79
3. HIV virus can be found in the blood.	Yes	295	77
4. HIV can be a hereditary disease.	No	163	42
5. HIV virus can be found in the saliva.	No	152	40
6. HIV virus can be found in the breastmilk.	Yes	152	40
7. HIV virus can be found in the urine.	No	103	27
Signs and symptoms			
8. One can still look healthy and normal during HIV infection.	Yes	180	47
9. Once infected with HIV, weight loss is experienced.	No	119	31
10. Once infected with HIV, swelling of body parts is experienced.	No	99	26
11. Once infected with HIV, vaginal/penile pains are experienced.	No	78	20
12. During HIV infection, symptoms do manifest.	No	71	18
Transmission mode			
13. HIV can be transmitted through sexual intercourse.	Yes	348	91
14. HIV can be transmitted by blood or blood product transfusion.	Yes	299	78
15. HIV can be transmitted through contaminated syringes.	Yes	250	65
16. HIV can be transmitted by swimming in a public pool.	No	192	50
17. HIV can be transmitted to a child through breastfeeding.	Yes	180	47
18. HIV can be transmitted by sharing a meal with a person living with HIV.	No	173	45
19. HIV can be transmitted by using a public toilet.	No	159	41
20. HIV can be transmitted through kissing/hugging a person with HIV.	No	153	40
21. HIV can be transmitted through mosquito or other insect bites.	No	137	36
Test and treatment			
22. HIV test is a blood test.	Yes	290	76
23. HIV can be controlled and treated.	Yes	240	63
24. HIV test is a urine test.	No	119	31
25. HIV infection can be detected right after getting the infection.	Yes	118	31
26. HIV can be cured by antibiotics and medicines.	No	85	22
Prevention			
27. HIV can be prevented by abstaining from premarital and extramarital sex.	Yes	341	90
28. HIV can be prevented by using condom.	Yes	279	73
29. HIV can be prevented by vaccines.	No	108	28
30. HIV can be prevented by avoiding illegal drugs.	Yes	104	27

Taking the mean score of all responses from the 30-point HIV/AIDS awareness questionnaire, residents display a moderate level of awareness (M=14.69, SD=6.333). It indicates that residents have a basic awareness of HIV/AIDS, yet it is not high enough to warrant prevention. Table 1 details the awareness of the residents according the specific facts about HIV. The statements that garnered the highest awareness levels are HIV is a sex-related disease (92%), HIV can be transmitted through sexual intercourse (91%), and HIV can be prevented by abstaining from sex (90%). Another set of statements that obtained a relatively higher awareness levels are HIV can be found in the semen (79%), found in the

blood (77%), and can be transmitted through blood (78%). On the other hand, during HIV infection, symptoms do manifest (18%), during HIV infection, vaginal/penile pains are experienced (20%), and HIV can be cured by antibiotics/ medicines (22%), are the facts that obtained the lowest awareness proportion.

Findings show that what was unanimously understood by the residents about HIV/AIDS is that it is related to sexual intercourse, is sexually transmitted, and can be prevented by abstaining from it. The said belief has equated HIV/AIDS with any other sexually-transmitted disease or infections, which has also caused the prevalence of stigma related to promiscuity. Another fact about HIV/AIDS that is commonly understood is that the virus can be found, and transmitted through one's blood. These demonstrate that residents are aware of the fundamentals of the disease. On the other hand, what has been evident was that residents are poorly aware that in the duration of HIV-infection, it is generally asymptomatic. The large majority think that, like other diseases, symptoms manifest during HIV infection. More so, when grouped among the five aspects of HIV/AIDS awareness, Signs and Symptoms factor was found to have the lowest awareness score, which shows that residents are barely aware of the fact that a person can appear normal and live healthy in the course of HIV infection. A study conducted in rural China and in a slum area in India similarly found that majority were unaware that HIV patients could apparently look healthy and normal (Malleshapa, Krishna, & Shashikumar, 2012; Chharang et al., 2016).

Level of stigma of the residents towards HIV/AIDS

Table 2

Level of stigma of the residents towards HIV/AIDS

Indicators	Mean	SD	Level of HIV-related Stigma
Shame and Blame factor			
1. People who have HIV/AIDS are cursed.	1.52	.689	Very low
2. People living with HIV/AIDS deserve to be punished.	1.72	.694	Low
3. People with HIV/AIDS are disgusting.	2.01	.732	Low
4. Families of people living with HIV/AIDS should be ashamed.	2.03	.762	Low
5. It is reasonable for an employer to fire people who have HIV/AIDS.	2.14	.789	Low
6. People living with HIV/AIDS should be ashamed.	2.18	.822	Low
7. People who have HIV/AIDS deserve compassion.	2.21	.739	Low
8. A person with HIV/AIDS should be allowed to work with other people.	2.23	.757	Moderate
9. People with AIDS should be isolated from other people.	2.34	.802	Moderate
Discrimination factor			
10. People with HIV should be allowed to participate fully in the social events in this community.	2.33	.723	Moderate

Table 2 continued

Indicators	Mean	SD	Level of HIV-related Stigma
11. People who are suspected of having HIV/AIDS lose respect in the community.	2.57	.736	Moderate
12. People living with HIV/AIDS face physical abuse.	2.67	.818	Moderate
13. People living with HIV/AIDS face rejection from their homes by their families.	2.72	.798	Moderate
14. Most people would not buy vegetables from a shopkeeper or food seller that they knew had AIDS.	2.74	.788	Moderate
15. People want to be friends with someone who has HIV/AIDS.	2.77	.679	Moderate
16. People living with HIV/AIDS face neglect from their family.	2.78	.668	Moderate
17. People living with HIV/AIDS face rejection from their peers.	2.91	.732	High
18. People who have HIV/AIDS face verbal abuse.	3.09	.766	High
Equity factor			
19. People living with HIV/AIDS should be treated similarly by health care professionals as people with other illnesses.	1.67	.790	Low
20. People with HIV/AIDS do not deserve any support.	1.73	.744	Low
21. People who have HIV/AIDS should be treated in the same way as everyone else.	1.86	.760	Low
22. People with HIV/AIDS should not have the same freedomsas other people.	1.92	.898	Low
Overall Mean	2.28	.320	Moderate

Table 2 displays the residents' level of stigma towards HIV/AIDS based on the Stigma and Discrimination Scale formulated by Genberg et al, (2008). With a mean of 2.28 (SD=.320), the stigma of the residents towards HIV/AIDS are in the moderate level which indicates that although it is not highly prevalent, it continues to exist. Examining the Stigma and Discrimination Scale, "people who have HIV/AIDS are cursed" (M=1.52, SD=.689) displayed as having very low stigma, which was followed by "people living with HIV/AIDS (PLHA) deserve to be punished" (M=1.72, SD=.694) and "people living with HIV/AIDS should be treated similarly" (M=1.67, SD=.790). On the other hand, "PLHA face rejection from their peers" (M=2.91, SD=.732), and "PLHA face verbal abuse" (M=3.09, SD=.766) garnered a high level of stigma. Among the three factors of the Stigma and Discrimination Scale, the Discrimination factor obtained the highest level of stigma towards HIV/AIDS, which indicates that residents feel that discrimination against PLHA remains prevalent. However, Equity factor displayed the lowest level of stigma, which means residents wish equal and fair treatment to PLHA.

Table 3

Relationship between level of awareness and stigma towards HIV/AIDS

Levels	M	SD	*R*	*P*
Level of HIV/AIDS Awareness	14.69	6.33	-.254	.000
Level of HIV/AIDS Stigma	2.28	0.32		

The study revealed that both the levels of awareness and stigma towards HIV/AIDS are on a moderate level. As residents have already understood the basic elements of the disease, they believe that such disease is not a curse or punishment; and that equality and fairness must prevail in treating persons living with HIV/AIDS (PLHA). Majority of residents showed sympathy and supports equal treatment of PLHA. However, the study revealed that discrimination still exists. Residents expressed that PLHA continues to experience neglect, abuse, and rejection from the community, even from friends and family. Statements related to Discrimination factor ranged from moderate to high stigma level. The study conducted in a province of Sri Lanka supports the findings that residents want equal and fair treatment of PLHA (Navaratna et al., 2015). Despite the sympathy showed by many respondents towards PLHA, many feel PLHA should be isolated from other people. While most statements have low stigma under Shame and Blame factor, residents remain to have reservations in associating with PLHA as stigma remains moderate. Residents sympathize and want equal treatment towards PLHA, but there remains a feeling of insecurity living together with PLHA. Sri Lankans also revealed the fear of sharing a room or toilet with PLHA, despite their value of equity with PLHA (Navaratna et al., 2015). In rural China, study revealed that majority of residents has at least one stigmatizing behavior, such as fear of sharing food with PLHA (Sullivan et al., 2010). This is a strong indication that the residents' current knowledge of HIV/AIDS knowledge is very basic and not enough to make them feel secure living together with PLHA.

Canonical Correlation Analysis of the residents' level of HIV awareness and stigma with their social and economic factors

Table 4

Canonical Correlation Analysis

Set 1 Loading		*Rc*	Set 2 Loading	
Sex	-.031		**HIV/AIDS awareness**	**-.540***
Age group	-.132	Rc = .345	**HIV/AIDS-related stigma**	**.959***
Marital status	**.513***			
Employment	-.207	Rc^2=.119		
Education level	**-.830***	(11.9%)		
Income	-.219			
CV1-1 = .177			CV2-1= .606	
		Wilk's Lambda: .860		
		Chi-Square: 46.685		
		Degrees of Freedom: 12		
		p=0.000		

**Significant factor loading at > 0.3*

Table 4 presents the results of the Canonical Correlation Analysis (CCA) which tests the relationship between the levels of HIV/AIDS awareness and stigma of the residents, and their socio-economic factors, and furthermore, measures the relative contribution (canonical loadings) of each variable in the derived canonical functions.

The CCA test derived two canonical functions in which Table 4 shows the first canonical function. In the first canonical function, the canonical correlation (Rc = .345, which indicates a variance of 11.9% shared by the two variates) is found to be significant as indicated by Wilks' Lambda (Λ=.860, df=12, p=0.000). Wilks' Lambda results indicate that there are significant differences between the means of the independent variables on a combination of dependent variables. Accordingly, the multivariate test revealed that the null hypothesis can be rejected and conclude that there was a relationship between the sets of variables.

Examining the canonical loadings in Set 1, only two out of six variables display significant loadings, Marital status and Education level. Set 1 accounts for 17.7% proportion of variance across the variables in its canonical variate (CV1-1=.177). While in Set 2, both variables, Level of HIV/AIDS awareness and Level of HIV/AIDS-related stigma, display significant loadings, which accounts for 60.6% proportion of variance across the variables in its canonical variate (CV2-1=.606).

The significant loading (above .30) for the canonical variate in Set 1 is

negative for the variable, Education level (1="elementary level", 2="elementary graduate", 3="high school level", 4="high school graduate"; 5="college level", 6="college graduate") (-.830), and positive for the variable, Marital status (1="Single", 2="Married") (.513). The loadings for the canonical variate in Set 2, are also negative for variable, HIV/AIDS awareness (-.540) and positive for variable, HIV/AIDS-related stigma (.959). The results imply that as the residents' education level becomes lower and marital status is married (or cohabitating/ separated/widowed), the more that the HIV/AIDS awareness tend to decrease and HIV/AIDS-related stigma tend to increase. These also mean that the higher the level of education is and when one is single, the higher the HIV/AIDS awareness and the lower the HIV/AIDS-related stigma they become.

The second canonical function, that CCA test derived, is no longer presented and examined as it was not found to be significant as indicated by Wilks' Lambda (Λ=.976, df=7, p=.191).

As the social and economic factors were found to correlate with the levels of awareness and stigma towards HIV/AIDS, this result upheld the contention of the Health Belief Model that demographics are modifiers of the perception to an illness. In other words, the social and economic characteristics of the residents influence their levels of HIV/AIDS awareness and stigma. This result implies that the consideration of demographics is essential in choosing the audience for HIV education and awareness campaigns. Many awareness campaigns have been delivered in forums where attendees are educated and already knowledgeable about HIV/AIDS.

The regression analysis of CCA further shows that, among the social and economic characteristics of the residents, level of education and marital status give the most significant impact to the levels of HIV/AIDS awareness and stigma. Results had shown that the higher the education level and being unmarried, the higher the awareness and the lower the stigma towards HIV/AIDS. The two demographic factors displayed to be significant predictors of the levels of awareness and stigma towards HIV/AIDS, while the other factors, such as age, sex, employment, and income are not significant predictors. This result is logical as those with higher educational background have a better understanding of HIV and AIDS and a lower stigma towards them. In another case, those single adults have a lower stigma and better knowledge about HIV/AIDS than those married, separated, and widowed. Similar study in a rural area of Southern India revealed that literates displayed better knowledge than illiterates and those with less than secondary education had discriminatory attitude than of those with

secondary education (Malleshappa et al., 2012). In Nigeria, it was found that HIV knowledge correlates with educational level and unmarried residents are more knowledgeable than the married residents (REACH, 2010). Nasir et al. (2015) also found significant associations between educational level and HIV awareness of Pakistani married residents. It was found out that in Bangladesh, education had been also found as a significant predictor; and as well as income and occupation (Rahman, 2009). Navaratna et al. (2015), on the other hand, did not find significant association between level of education and HIV/AIDS stigma of Sri Lankan residents, but still found significant association with HIV/AIDS awareness. Education, indeed, is a strong determinant of HIV/AIDS awareness and stigma levels. The school, however, may not be apparently the primary source of HIV information. But as educated individuals, they would take a wiser analysis of the information about HIV/AIDS they receive, better than those who are less educated.

CONCLUSIONS

Residents' awareness and stigma toward HIV and AIDS are on a moderate level. Nearly all residents knew that it is a sex-related illness, but only few know that such disease has asymptomatic characteristics. Also, although moderate, residents feel that the stigma towards HIV/AIDS remains prevalent, particularly the discrimination against PLHA remains. There is a significant negative correlation between the level of awareness and the level of stigma towards HIV/AIDS, which indicates that when awareness level increases, the stigma towards HIV/AIDS also decreases. It strongly supports the contention that there is no other efficient way to reduce HIV/AIDS stigma but by HIV education. In terms of the residents' social factors, demographics have a significant impact on the levels of HIV/AIDS awareness and stigma, particularly the level of education and marital status.

RECOMMENDATIONS

In the light of the findings, the study recommends that:

1. An aggressive HIV/AIDS awareness campaign may continue, focusing not only on the transmission modes and prevention, but also on the symptoms and treatment of HIV/AIDS;

2. The local government and local private organizations are eccourage to join forces in carrying out community-based awareness campaigns which target the out-of-school youths and less educated adults; and

3. The residents' HIV/AIDS prevention practices, condom use, and sexual behaviors may be also studied and explored.

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