

RESEARCH ARTICLE

Association of comprehensive knowledge on HIV/AIDS and discriminatory attitudes towards people living with HIV/AIDS (PLWHA) among Filipino women

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ABSTRACT

Background: The Philippines is among the countries with the fastest growth rate of HIV cases in the Asia-Pacific Region. HIV/AIDS stigma and discrimination are recognized as major barriers, directly and indirectly inflicting harm to people living with HIV/AIDS (PLWHA). Despite this, there is a lack of studies regarding HIV/AIDS discrimination in the Philippines. This study aimed to assess the association between comprehensive knowledge on HIV/AIDS and discriminatory attitudes towards PLWHA among women in the Philippines.

Methodology: Secondary data analysis was done using the Philippine National Demographic Health Survey (2017). Twenty two thousand eight hundred thirteen (22,813) Filipino women aged 15-49 years old were included in this study. Multiple logistic regression was performed to determine the association between comprehensive knowledge and discriminatory attitudes. The final model was built using the change in estimate criterion and sampling weights were applied.

Results: More than 3 out of 4 (76.87%) had discriminatory attitudes towards PLWHA, whereas only 1 out of 4 (26.24%) had comprehensive knowledge on HIV/AIDS. Results of multiple logistic regression reveal that women without comprehensive knowledge are 2.53 times more likely to have discriminatory attitudes towards PLWHA (OR= 2.53, 95% CI =2.26-2.84).

Conclusion: Given that women without comprehensive knowledge are more likely to have discriminatory attitudes, HIV/AIDS campaigns may be strengthened by integrating necessary concepts in comprehensive sexual education and conducting more active nationwide information and education campaign efforts. Moreover, there is a need to formally evaluate the overall effectiveness of existing interventions.

Keywords: HIV/AIDS, comprehensive knowledge, discriminatory attitudes, PLWHA, PLHIV, sex education

Introduction

The Human Immunodeficiency Virus (HIV) epidemic is a major global public health issue with over 38.0 million people infected worldwide and 1.7 million new HIV cases as of 2019 [1]. The Joint United Nations Programme on HIV/AIDS (UNAIDS) reported that the Philippines has the fastest growth rate in the number of HIV cases in the Asia-Pacific region, having a 203% increase in the rate of new infections from 2010 to 2018 and totaling 81,169 HIV and Acquired Immunodeficiency Syndrome (AIDS) reported cases from 1984 to 2020 [2].

HIV-related discrimination refers to any acts and behaviors to impair people's enjoyment of their fundamental human rights, specifically People Living with HIV/AIDS (PLWHA) [3]. This is evident in 25 of the 36 countries surveyed by the UNAIDS which reported that 50% of people aged 15 to 49 years have discriminatory attitudes toward PLWHA [4]. Discrimination serves as a significant barrier to effective HIV response by affecting the quality of life of PLWHA, leading to severe negative outcomes such as denial of healthcare services and non-adherence to antiretroviral

therapy [3,5]. PLWHA are isolated and shunned by their families, friends, and communities [6]. Ultimately, it could lead to loss of income, livelihood, marriage, childbearing options, reputation, and other negative psychological impacts among PLWHA [7].

In the Philippines, the Republic Act 8504 (Philippine AIDS Prevention and the Control Act of 1998) and Republic Act 11166 (Philippine HIV and AIDS Policy Act of 2018) are implemented to counter discrimination, specifically in workplaces, schools, healthcare settings, and others. Even though these efforts exist, there are still approximately 7 out of 10 women (71%) who have discriminatory attitudes toward PLWHA according to the 2017 National Demographic Health Survey (NDHS) [8]. Moreover, stigmatizing attitudes towards PLWHA among healthcare workers were identified [9]. In a study conducted by Lopez, Ramiro, and Roxas (2017), among the 375 health care workers in a hospital in the Philippines, 26.3%, 7.8%, and 13.2% responded that they will not provide services to people who inject illegal drugs, to men who have sex with men, and to sex workers, respectively. This is because they believe that HIV transmission is more likely in the aforementioned groups under those circumstances as compared to regular patients. A good number of respondents also believed that PLWHA engaged in irresponsible behaviors (69.1%) and had multiple sexual partners (66.4%), a belief that is commonly found among the healthcare workers who responded that they will not provide services to the key populations [9].

Identifying factors associated with discriminatory practices among women may aid in contextualizing solutions that will reduce discriminatory attitudes and improve the quality of life of PLWHA [10]. Several published literature have reported factors associated with discriminatory attitudes against PLWHA. These are knowledge, age, residence, socioeconomic status, religion, marital status, educational attainment, mass media exposure, and internet use [11-14]. Among these factors, knowledge on HIV/AIDS has been considered one of the best factors to target when addressing HIV-related discrimination due to its modifiable and changeable nature which could benefit future interventions. Various studies have shown an inverse relationship between knowledge on HIV/AIDS and discriminatory attitudes towards PLWHA; in particular, participants with a higher level of knowledge are found to have less negative attitudes [15,16].

Other factors previously found by published studies to be associated with discriminatory attitudes against PLWHA are age, residence, socioeconomic status, religion, marital status,

educational attainment, mass media exposure, and internet use. Similarly, some of these factors are found to be associated with comprehensive knowledge on HIV/AIDS. In particular, among women aged 25-34 years, age is significantly associated with both variables, and comprehensive knowledge increases with age [16,17]. For residence, people residing in urban areas are more knowledgeable about HIV/AIDS and are less likely to have discriminatory attitudes than those residing in rural areas. [11,13,16,18]. People belonging to a higher wealth or income index are consistently found to be less likely to have discriminatory attitudes which may be due to better access to education, and in turn, better access to HIV/AIDS information. [11,12,31]. Religion is found to influence discriminatory attitudes two-fold—having both positive and negative impacts [12,19,20]. For marital status, conflicting findings are seen in previous literature wherein married Dominicans have more positive attitudes towards PLWHA than single people [21], while married Ethiopians have more discriminatory attitudes towards PLWHA than single people [12]. In terms of educational attainment, attaining a higher education level is associated with better access to information, which is, in turn, linked to having more accepting behaviors towards PLWHA [11,13,19]. Lastly, for mass media exposure and internet use, contrasting findings were established by previous studies which showed both positive and negative impacts on discriminatory attitudes [11,12,22,23,31]. Since the media may not always convey accurate information regarding the disease, there is a need to carefully assess the materials being publicly distributed [24].

This research acknowledged the vulnerability of women and the extent of their comprehensive knowledge on HIV/AIDS; therefore, this study focused on this population. In sub-Saharan Africa, young women (15-24 years old) are said to have lower comprehensive knowledge than men of the same age, leaving them susceptible to the disease [25]. In the Philippine context, only 25% of Filipino women aged 15-49 years have comprehensive knowledge on HIV [8]. Furthermore, even though HIV cases are higher in men than women, since cases come primarily from men who have sex with men in the Philippines [26], it has been discovered that young women are more likely to acquire HIV than younger men globally. This may be due to biological factors such as having a higher risk of disease acquisition through vaginal sex, socioeconomic factors like lack of education and health services, and gender inequality [3]. Additionally, upon conducting an extensive literature search in various databases, existing research examining the relationship between knowledge and discriminatory attitudes in the Philippines has focused on specific populations including secondary school students [27],

health care providers [9], and sex workers [28]. These reasons highlight the need to explore the factors associated with discriminatory attitudes towards PLWHA in a more general population, particularly women. Therefore, this study aimed to determine the association between comprehensive knowledge on HIV/AIDS and discriminatory attitudes towards PLWHA among Filipino women aged 15-49 years old.

This study was the first to examine the association between comprehensive knowledge on HIV/AIDS and discriminatory attitudes towards PLWHA among women in the Philippines. The findings may serve as a tool in guiding future public health research, particularly in the field of HIV/AIDS knowledge and discrimination. Aligned with the National Unified Health Research Agenda for 2017 to 2022, as well as the 2015 Sustainable Development Goals (SDGs), this study may also serve as baseline evidence for policymakers, administrators, public health experts, and advocacy groups in formulating and strengthening the implementation of targeted HIV/AIDS information, education, and communication (IEC) strategies and policies in addressing the prevailing high percentage of Filipino women found to hold discriminatory attitudes towards PLWHA [8]. Due to their vulnerability and susceptibility to inequities especially surrounding the topic of HIV/AIDS, the population of women may be focused on by these institutions in moving forth with their health promotion advocacies on HIV discrimination.

For this study, all the variables included were selected based on existing literature and the availability of data in the NDHS 2017. Men were not included because only women were interviewed regarding HIV knowledge and discriminatory attitudes. Furthermore, following the UNAIDS Global AIDS Monitoring (GAM) indicator 4.1, questions related to HIV discrimination were introduced in 2017. Similarly, the NDHS incorporated HIV discriminatory attitudes questions into their questionnaire for the first time in 2017. Due to this, this study did not analyze the trends of discriminatory attitudes in the Philippines temporally. Lastly, for the stratification of variables, age was divided into groups to satisfy the preliminaries needed to proceed with data analysis.

Methodology

This research was a quantitative observational analytical cross-sectional study that utilized secondary data acquired from the 2017 NDHS on Filipino women aged 15-49 years old from all seventeen (17) administrative regions in the Philippines. The acquisition was granted formally by the Demographic and Health Survey (DHS) Program.

Survey respondents were selected using a two-stage stratified sampling technique. For the first stage of selection, one (1) to four (4) replicates were picked for each province or highly urbanized city—totaling 1,250 primary sampling units (PSU). PSUs can be a barangay, two or more adjacent small barangays, or a portion of a large barangay. A barangay is considered the smallest local government unit in the Philippines. For the second stage of selection, systematic random sampling was utilized to select either 20 or 26 housing units from each PSU. For each housing unit, 1 to 3 households were subjected to an interview. Out of the 27,855 occupied households selected, only 27,496 were successfully interviewed. Of this, 25,690 were eligible, with a completed response rate of 97.6% totaling 25,074 women aged 15-49 years old interviewed. For this study, those who have never heard of HIV/AIDS (2,261) were excluded from the analysis. Excluding these respondents, a total of 22,813 Filipino women aged 15-49 years old were analyzed.

Questionnaires were constructed in English and translated to Tagalog, Cebuano, Ilocano, Bicolano, Hiligaynon, and Waray. This was incorporated into the tablet computers for computer-assisted personal interviewing (CAPI) — enabling the participants to choose any language.

The independent variable was the comprehensive knowledge on HIV/AIDS. This is defined in the NDHS as having responded correctly to all five questions, namely: (1) Consistent use of condoms during sexual intercourse can reduce the chance of getting HIV, (2) Having just one uninfected faithful partner can reduce the chance of getting HIV, (3) Healthy-looking person can have HIV, (4) HIV can be transmitted by mosquito bites and; (5) A person can become infected by sharing food with a person who has HIV.

Meanwhile, the dependent variable was the presence of discriminatory attitudes, which is binary. Using the same definition in the NDHS, the respondent can be classified as having discriminatory attitude if one answered negatively in any of the two questions: (1) children living with HIV should be able to attend school with children who are HIV negative, or (2) they would buy fresh vegetables from a shopkeeper with HIV.

The possible confounders were sociodemographic factors such as residence, religion, age, educational attainment, marital status, and socioeconomic status. Other variables that could influence a person's awareness of HIV, such as mass media exposure and internet use, were also considered. The definition of the variables and the confounders are seen in Table 1.

Table 1. Operational Definition of Variables

Variables	Definition
Comprehensive Knowledge about HIV	The participants were classified as having comprehensive HIV knowledge if they correctly responded to all of the following 5 questions: (1) Consistent use of condoms during sexual intercourse can reduce the chance of getting HIV, (2) Having just one uninfected faithful partner can reduce the chance of getting HIV, (3) Healthy-looking person can have HIV, (4) HIV can be transmitted by mosquito bites and (5) A person can become infected by sharing food with a person who has HIV.
Discriminatory Attitudes towards people living with HIV	Discriminatory attitude was classified as present if the participant answered negatively in any of the following statements: (1) children living with HIV should be able to attend school with children who are HIV negative, or (2) they would buy fresh vegetables from a shopkeeper with HIV.
Residence	Residence is defined as the de facto area of residence and is classified as either urban or rural.
Educational Attainment	Educational attainment refers to the highest level of educational attainment achieved by the participant. The levels of educational attainment are as follows: (1) no education; (2) primary; (3) secondary; (4) higher and (5) don't know.
Socioeconomic Status	The wealth of each participant is defined in terms of the wealth index used by the DHS. The categories of the wealth index are as follows: (1) poorest; (2) poorer; (3) middle; (4) richer, and (5) richest.
Age	Age is defined as the age of the respondent in years as reported in the National Demographic Health Survey. Age is categorized as the following: (1) 15 to 19 years old; (2) 20 to 29 years old; (3) 30 to 39 years old, (4) and 40 to 49 years old.
Marital Status	The marital status of each respondent was classified into one of three categories, namely: (1) never in union; (2) married; (3) living with a partner; (4) widowed; (5) divorced, and (6) separated or no longer living together.
Mass media exposure	Access to media (media exposure) was labeled based on how often respondents read a newspaper, listened to the radio, or watched television. Those who responded at least once a week to any of these sources were considered to have access to media.
Internet Use	Internet use is defined as whether the participant uses the internet. The participants who do use the internet were further classified based on the frequency of internet use during the latest month of the past 12 months, as follows: (1) almost every day; (2) at least once a week; (3) less than a week, or (4) not at all.
Religion	Participants were classified based on the religion they identify with, as follows: (1) Roman Catholic; (2) Protestant; (3) Iglesia ni Cristo; (4) Aglipay; (5) Other Christian; (6) Islam; (7) Other, or; (8) None.

Bivariate logistic regression was initially done, and all variables with a p-value of <0.25 were included in the multiple logistic regression analysis. Multiple logistic regression was performed to determine the relationship between the independent variable and the dependent variable. The final model was built using a change in estimate criterion, and confounders were included in the model if a 10% change in the measure of association between comprehensive knowledge and discriminatory attitude was observed. Sampling weights were applied to achieve the representativeness of the estimates and to account for both non-response and complexity of the survey design. The relationship between the variables was quantified using the adjusted odds ratio. Data processing was conducted using the STATA statistical software (version. 17).

Results

More than 3 out of 4 (76.87%) Filipino women aged 15-49 years old had discriminatory attitudes towards PLWHA, as shown in Table 2. Table 3 presents the proportion of the independent variable, comprehensive knowledge on HIV/AIDS, in the general population according to the dependent variable, discriminatory attitudes. For the independent variable, a little more than a quarter (26.24%) of

women aged 15-49 had comprehensive knowledge. Breaking down the five questions on knowledge about HIV, the majority of the respondents got the correct answers in terms of the reduced chance of acquiring HIV by using condoms during sex (70.87%) and having one sex partner with no other partners (89.36%), and the belief of the respondent that a healthy-looking person can have HIV (77.57%). Meanwhile, only a little more than half of the respondents answered correctly questions about common transmission misconceptions, such as getting HIV from mosquito bites (62.18%) and sharing food with a person who has HIV (60.13%).

Among those without discriminatory attitudes, 41.84% had comprehensive knowledge on HIV/AIDS, while 58.16% did not. On the other hand, among those with discriminatory attitudes, 21.55% had comprehensive knowledge on HIV/AIDS whereas 78.44% did not. Table 3 also shows that most of the confounding variables have a p-value less than 0.05. The only exception is marital status, which has a p-value of 0.322.

The results of the simple logistic regression between the confounders and discriminatory attitudes towards PLWHA are shown in Table 4. All variables were included in the multiple logistic regression based on the cutoff p-value of <0.25 .

Table 2. Proportion of Filipino Women Aged 15-49 Years Old Who Have Discriminatory Attitudes towards PLWHA, NDHS 2017 (n=22,813).

Study Variables	Proportion (n=22,813)
Discriminatory Attitudes towards PLWHA	
Without	23.13
With	76.87

Table 3. Proportion of Independent Variable (Comprehensive Knowledge on HIV/AIDS) and Confounding Variables by Discriminatory Attitudes towards PLWHA among Filipino Women Aged 15-49 Years Old, NDHS (2017).

Study Variables	Discriminatory Attitudes towards PLWHA		Total (N=22,813)	p-value
	Without (n=5277)	With (n=17,536)		
Comprehensive Knowledge on HIV/AIDS				<0.001
With	41.84	21.55	26.24	
Without	58.16	78.44	73.76	
Age				<0.001
15-19	13.21	20.54	18.85	
20-29	32.30	31.55	31.73	
30-39	28.65	26.01	26.62	
40-49	25.84	21.89	22.81	
Residence				<0.001
Rural	44.15	51.32	49.66	
Urban	55.85	48.68	50.34	
Educational Attainment				<0.001
No education	0.33	0.40	0.38	
Primary	7.36	12.03	10.95	
Secondary	42.83	52.55	50.30	
Higher	49.49	35.01	38.36	
Socioeconomic Status				<0.001
Poorest	8.86	15.95	14.31	
Poorer	15.29	19.31	18.38	
Middle	19.64	20.44	20.26	
Richer	26.21	21.77	22.80	
Richest	30.00	22.53	24.25	
Marital Status				0.3222
Never in union	33.86	36.35	35.77	
Married	43.97	41.88	42.36	
Living with partner	17.29	17.58	17.51	
Widowed	1.23	1.04	1.08	
Divorced	0.15	0.16	0.16	
Separated or no longer living together	3.50	2.99	3.11	
Religion				0.0001
Roman Catholic	81.95	81.23	81.40	
Protestant	8.70	7.32	7.64	
Iglesia ni Cristo	3.40	3.06	3.14	
Aglipay	0.48	0.80	0.73	
Islam	1.93	4.00	3.52	
Other Christian	2.19	2.28	2.26	
Other	0.96	1.07	1.04	
None	0.39	0.23	0.27	
Mass Media Exposure				<0.001
Have access	98.63	97.47	97.73	
Do not have access	1.37	2.53	2.27	
Internet Use				<0.001
Not at all	23.88	32.05	30.16	
Less than once a week	11.22	10.65	10.78	
At least once a week	23.26	20.77	21.35	
Almost every day	41.64	36.53	37.71	

Table 4. Results of Simple Logistic Regression of Discriminatory Attitudes towards PLWHA among Filipino Women Aged 15-49 Years Old, NDHS (2017)

Study Variables	Unadjusted OR	95% CI	p-value
Age			
15-19			
20-29	0.6282281	0.53 - 0.75	<0.001
30-39	0.5837156	0.49 - 0.69	<0.001
40-49	0.5448479	0.46 - 0.65	<0.001
Residence			
Rural			
Urban	0.74998	0.67 - 0.83	<0.001
Educational Attainment			
No education			
Primary	1.343354	0.65 - 2.80	0.430
Secondary	1.007504	0.49 - 2.07	0.984
Higher	0.5809744	0.28 - 1.19	0.139
Socioeconomic Status			
Poorest			
Poorer	0.7011033	0.60 - 0.82	<0.001
Middle	0.5778351	0.50 - 0.67	<0.001
Richer	0.460999	0.39 - 0.55	<0.001
Richest	0.4168566	0.35 - 0.49	<0.001
Marital Status			
Never in union			
Married	0.8873116	0.79 - 1.00	0.053
Living with partner	0.9470352	0.80 - 1.12	0.529
Widowed	0.7867995	0.53 - 1.16	0.229
Divorced	0.9987076	0.32 - 3.10	0.998
Separated or no longer living together	0.7960706	0.57 - 1.10	0.173
Religion			
Roman Catholic			
Protestant	0.8491857	0.70 - 1.03	0.090
Iglesia ni Cristo	0.9089424	0.65 - 1.28	0.580
Aglipay	1.685701	1.12 - 2.53	0.012
Islam	2.087983	1.70 - 2.57	<0.001
Other Christian	1.049758	0.79 - 1.40	0.743
Other	1.124626	0.78 - 1.62	0.529
None	0.5977006	0.26 - 1.36	0.220
Mass Media Exposure			
Have access			
Do not have access	1.865843	<0.001	<0.001
Internet Use			
Not at all			
Less than once a week	0.7070376	0.60 - 0.83	<0.001
At least once a week	0.6654063	0.58 - 0.76	<0.001
Almost every day	0.6535879	0.57 - 0.74	<0.001

Results of multiple logistic regression presented in Table 5 reveal that comprehensive knowledge had a significant relationship with having discriminatory attitudes ($p < 0.001$). It was found that Filipino women without comprehensive knowledge on HIV/AIDS were 2.53 times more likely to have discriminatory attitudes towards PLWHA.

Discussion

This study has shown that there is a significant relationship between comprehensive knowledge on HIV/AIDS and discriminatory attitudes towards PLWHA. Filipino women

without comprehensive knowledge are 2.53 times more likely to have discriminatory attitudes. This relationship is also observed in other studies which established the association between the level of HIV knowledge and discriminatory behavior of an individual [29,30]. Compared to those with comprehensive knowledge, those without have increased odds of having discriminatory attitudes [11,13,31]. Diress *et al.* (2020) concluded that a person without comprehensive knowledge is more likely to have discriminatory attitudes. This finding is also parallel with the studies of Asamoah *et al.* (2017) and Seboka *et al.* (2020), which found that those without comprehensive knowledge are 4.02 and 1.89 times

Table 5. Results of Multiple Logistic Regression of Discriminatory Attitudes towards PLWHA among Filipino Women Aged 15-49 Years Old, NDHS (2017).

Study Variables	Adjusted OR	95% CI	p-value
Comprehensive Knowledge on HIV/AIDS With Without	2.534225	2.26 - 2.84	<0.001
Age 15-19	0.6872366	0.58-0.82	<0.001
20-29	0.6461766	0.54-0.77	<0.001
30-39	0.6128954	0.51-0.73	<0.001
40-49			

more likely to have discriminatory attitudes, respectively. All of these studies consistently contribute to the same claim on the observed relationship between having comprehensive knowledge regarding HIV/AIDS and having discriminatory attitudes towards PLWHA. Therefore, the association between the two variables indicates that measures in improving comprehensive knowledge may be necessary to reduce discrimination towards PLWHA. Furthermore, given how modifiable knowledge is, it is important to strengthen health promotion.

At present, there are existing interventions and laws in place to reduce the prevailing stigma and discrimination towards PLWHA. Unfortunately, this study has shown that the Philippines is still far from achieving universal comprehensive knowledge on HIV/AIDS with a global target of 95% and zero discrimination. As previously discussed, 76.87% of the respondents had discriminatory attitudes towards PLWHA yet only 26.24% had comprehensive knowledge on HIV/AIDS. HIV/AIDS is not frequently discussed in communities [2]. There are still sociocultural barriers to overcome since the discourse on HIV/AIDS remains to be a taboo subject. In the cultural context of Filipinos, HIV is also considered a source of “kahihiyan” (shame). Knowledge regarding the disease is centered around stereotypes and sex-negative and stigmatizing notions [2]. Addressing this may be difficult as it touches on cultural beliefs about the morality of sexual behaviors and sexual identities. With this, there is a need to educate further on this matter. Furthermore, current efforts may benefit not only from integrating accurate information about HIV/AIDS prevention, transmission, and corresponding misconceptions attributed to transmission but also from handling educational campaigns with sensitivity in the unique contexts of different groups while being anchored on principles of human rights [32].

This study on discrimination against PLWHA has shown that bolstering efforts to increase comprehensive knowledge may be useful in reducing the odds of discriminatory attitudes.

It is therefore recommended that existing IEC materials be further refined to be more targeted through incorporating essential information to develop comprehensive knowledge, particularly on HIV/AIDS prevention, transmission, and other common misconceptions. Despite having observed that the sample population got decent scores if only accounted for each question, their low comprehensive knowledge indicates that the population has varying misconceptions or lack of knowledge. While topics regarding the contraction of the virus were observed to be the area that needs further attention given the relatively low knowledge compared to other topics, it should be taken into account the sporadic nature of the population who have different incorrect answers.

Unfortunately, since there are no publicly available evaluations regarding the performance of the national programs on these aspects, and there are no temporal studies that attempt to follow both its performance and the trends in public's comprehensive knowledge and discriminatory attitudes over time, this study cannot make conclusions on whether the existing programs are effective or ineffective in influencing the public's discriminatory attitudes. As such, there is a need to conduct a temporal analysis to assess the effectiveness of the said program in addressing comprehensive knowledge and discriminatory attitudes. Moreover, there is a need to evaluate if these are being reached to the target audiences. Although regular evaluations of existing interventions are already being done, these may be re-examined for their rigor and consistency. As is, this study may offer a supporting baseline for such studies in the future.

NDHS is part of a worldwide survey program that gathers data on the demographic and health indicators of a country. As such, several techniques were employed to ensure minimal measurement errors. However, there may be limitations on the data collection in the context of the present study. First, this study did not control for selection bias. Weights were used to account for the complexity of the survey methodology and nonresponse. Participants with

missing data were excluded. The exclusion of those who have not heard of HIV may be inferred to have no comprehensive knowledge, leading to an underestimation of the proportion. Since the questionnaire is about HIV discrimination, social desirability bias was possible. Causality was not determined since this is a cross-sectional study. Despite this, the association found is enough to accomplish the research objectives. The given hypothetical situations on discriminatory attitudes may not encompass all forms of discrimination; nonetheless, these questions are regarded as the standard according to DHS. Possible confounders outside the study were not accounted for. Other information such as knowledge of blood transfusion was not included; however, the present questionnaire still covered the essentials required of the general population. Variables in mass media are also gauged based only on frequency, thus, the content was not taken into consideration.

For future research, a qualitative approach may be conducted to account for complexities in responses. Including men in future studies may improve the generalizability of this study. The variables were selected based on previous literature and availability in the NDHS; thus, other variables related to comprehensive knowledge and discriminatory attitudes may still be explored. Arbitrary stratification should be considered since this can influence the retention of the confounders in the final model. Lastly, looking into other forms of discrimination and how a human rights lens could affect discriminatory attitudes may also be done.

Conclusion

Identifying strategies that effectively reduce HIV/AIDS discrimination is crucial to alleviate the suffering faced by PLWHA, and to ensure the success of global HIV/AIDS prevention and treatment efforts. With this being said, this study offers insights on how improving the comprehensive knowledge of the public should be done to address this problem. Among the eligible respondents in this study, only 26.24% had comprehensive knowledge on HIV/AIDS and 76.87% had discriminatory attitudes towards PLWHA. The results of the multiple logistic regression showed that there is a statistically significant relationship between comprehensive knowledge on HIV/AIDS and discriminatory attitudes towards PLWHA ($p < 0.001$). A Filipino woman without comprehensive knowledge on HIV/AIDS is 2.53 times more likely to have discriminatory attitudes than women with comprehensive knowledge. This association indicates the need to improve comprehensive knowledge to reduce discriminatory attitudes, which could be done by incorporating necessary

concepts on HIV/AIDS transmission, prevention, and common misconceptions into existing campaigns. Through the results of this study and other studies, policymakers, leaders, and stakeholders can hopefully be guided in doing their part to achieve the global goal of zero stigma and discrimination against PLWHA.

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