

# The determinants of willingness to care for people living with HIV-AIDS: A cross-sectional study in Indonesia

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## Abstract

Acceptance and willingness to care for people living with HIV-AIDS (PLHA) in society is still a concern. The purpose of this study is to analyse the determinants of willingness to care for PLHA in Indonesia. A cross-sectional study was conducted to process the secondary data from the Indonesian Demographic Health Survey (IDHS) conducted in 2017. A total sample of 13,731 individuals was obtained by a two-stage stratified cluster sampling technique. The variables used were socioeconomic characteristics (age, sex, education, wealth quintile, residence, employment status and earnings), knowledge about HIV-AIDS, information about HIV-AIDS and willingness to care for PLHA. Binary logistic regressions were used to analyse the data. According to the data from IDHS 2017, 71.84% of total respondents in Indonesia are willing to care for PLHA. Female respondents, individuals in all wealth quintiles and those who have more information are more likely to care for PLHA. Respondents aged 35–49 years old and currently working are less likely to care for PLHA. However, level of education, level of knowledge, residence and earnings are not related willingness to care for PLHA. The dissemination of correct and accurate information about HIV-AIDS can help the community and society understand this condition. Thus, community members can accept PLHA and become more willing to provide care. The government can determine further policies for the appropriate dissemination of information, maximally and in accordance with recommendations. Collaborations among the government, health workers and the community are needed.

## KEYWORDS

AIDS, care, demographic health survey, HIV, willingness

## 1 | INTRODUCTION

The acceptance of people living with HIV-AIDS (PLHA) within the community is still a problem that should be highlighted and addressed (Fitriyani & Waluyo, 2019). Bringing attention to this problem could also have an impact on the community's willingness to help and care for PLHA (Stroumpouki et al., 2020). The operational definition of caring, in this case, not only refers to caring for PLHA who are sick but also to being willing to provide the support, attention,

information, assistance and acceptance that allow PLHA to live healthily (Watson, 2002; You et al., 2013). PLHA become vulnerable because of their illness, so they have many needs. Moreover, the stigma within communities makes it very difficult for PLHA to obtain rights such as access to medical services, socialisation and improvements to their quality of life, such as through access to work (Alemu et al., 2013; Harapan et al., 2015; Krupchanka et al., 2018). In 2019, PLHA still encountered resistance from medical personnel when it came to accessing healthcare (Lukihardanti & Hafil, 2019) as well as

refusals from their families to provide assistance (Sayefudin, 2017). Sufficient knowledge and acceptance from the community regarding PLHA are the basis for a willingness to care for and live together with PLHA.

The number of PLHA is increasing every year. In 2019, the number of people living with HIV in the world reached 38 million, 36.2 million adults and 1.8 million children aged <15 years (ONUSIDA/UNAIDS, 2020). From the total HIV morbidity rate in 2019, it is clear that as many as 81% knew their status as PLHA, and 67% had just received access to global antiretroviral therapy. In addition, the number of deaths caused by AIDS in 2019 reached 690,000 (ONUSIDA/UNAIDS, 2020; U.S. Department of Health & Human Services, 2020). The number of PLHA in Indonesia in 2018 was 640,000, and the number of deaths caused by AIDS was 38,000. The number of deaths due to AIDS has increased by 60% since 2010 (UNAIDS, 2018).

Several similar studies have examined the determinants of willingness to care for PLHA in several countries, namely, attitudes (Yang, 2014), support (Ma & Loke, 2020; Sanga et al., 2019), perceived benefits (Dubé et al., 2017), perceptions of risk (Fu et al., 2018; Leblanc & Andes, 2015), socioeconomic factors (Ransome et al., 2020) and knowledge (Fiorentino et al., 2019; Fu et al., 2018). Several studies in Indonesia state that peer support (Fitriyani & Waluyo, 2019; Rahmatin & Azinar, 2017), access to services, health support (Rahmatin & Azinar, 2017), spirituality (Lindayani et al., 2018) and knowledge (Sari & Parut, 2019) are related to willingness to care for PLHA. However, research on willingness to care for PLHA in Indonesia is still scarce and has not been conducted nationally. In addition, this study includes factors predictive of willingness to care for PLHA, such as demographic factors (age, sex, education level and residence), socioeconomic factors (wealth quintiles, employment status and earnings), knowledge about the use of condoms and how HIV is transmitted and information from the mass media, healthcare providers, communities, seminars and schools.

Caregivers play an important role in the care of PLHA. Caregivers are able to influence medical care and acceptance and provide instrumental assistance to PLHA. They indirectly assist with routines and facilitate the adherence of PLHA to their medication, and can affect stress levels (Fredriksen-Goldsen et al., 2011; Wagner & Ryan, 2004). One study found that PLHA treated by informal caregivers were able to maintain a viral load 4.6 times greater than those not cared for (Knowlton et al., 2007).

Based on the relationships among these problems, the concern of the family to care for PLHA needs serious attention. Thus, this study provides an overview of the willingness to care for PLHA and the factors that influence it. Therefore, in this study, the researcher examined factors such as socioeconomic characteristics (age, sex, education, wealth quintiles, residence, employment status, and earnings), knowledge, and information about HIV-AIDS related to willingness to care for PLHA in Indonesia.

### What is known about this topic?

- The acceptance and willingness to care for people living with HIV-AIDS (PLHA) is still a concern in Indonesia.
- The study found that female respondents, individuals from all wealth quintiles and those who have more information sources about HIV-AIDS are more likely to be willing to care for PLHA. Meanwhile, respondents aged 35–49 years old and currently working are less likely to be willing to care for PLHA.

### What this paper adds?

- We identified factors related to the willingness of Indonesian people to take care of PLHA on a national scale.
- The government can identify the right policies to increase a sense of concern and willingness to care for PLHA in Indonesia, and the provision of health education about PLHA should be promoted.

## 2 | MATERIALS AND METHODS

### 2.1 | Study design

This study used secondary data from the Indonesian Demographic Health Survey (2017) using a cross-sectional study approach. Researchers obtained approval from the International Inner City Fund to use the data set.

### 2.2 | Setting

This study uses secondary data collected in December 2017. The IDIR71FL data set (Indonesian Individual Recode phase 7) and the IDMR71FL data set (Indonesian Men Recode phase 7) were combined to obtain the required number of female and male respondents. Data related to willingness to care for PLHA were obtained from data for men and women aged 15–54 years who were successfully interviewed. Respondents who had heard of or knew about HIV-AIDS were included in this study. Meanwhile, those who had never heard of or were missing information on this topic were excluded from this study. The total population of this study is 59,636 respondents (male and female). To obtain a sample, the researchers weighted the observations based on the number of provinces in Indonesia to obtain the average for each region. The total sample was thus 13,731 respondents with 2,818 males and 10,913 females. This study employed two-stage stratified cluster sampling (Demographic Health Survey, 2017).

## 2.3 | Variables

### 2.3.1 | Independent variables

The independent variables in this study consisted of socioeconomic characteristics (age, sex, education, wealth quintiles, residents, currently working and respondents' earnings), knowledge and information about HIV-AIDS.

In this study, the age variable was categorised into 15–24 years old, 25–34 years old, 35–49 years old and 50–54 years old based on the age groupings used in Indonesia (Health Ministry of Republic Indonesia, 2009). The sex variable was divided into two categories, namely, male and female (Demographic Health Survey, 2017). The education variables were categorised into high, secondary, primary and no education. This grouping of the variables was based on Law Number 20 of 2003 concerning the National Education System in Indonesia (Kementrian Pendidikan dan Kebudayaan, 2003). The wealth quintile variable was determined based on principal component analysis (Vyas & Kumaranayake, 2006) and categorised into richest, richer, middle, poorer and poorest (Croft et al., 2018; Demographic Health Survey, 2018). The residence variable was determined based on the Indonesian Population Census in 2010 (BPS, 2010) and was categorised into rural and urban. The employment status variable was determined based on respondents' employment status and earnings at the time of the interview (Demographic Health Survey, 2017). This variable was categorised as either 'yes' (currently working) or 'no' (not currently working). The respondents' earnings were categorised as 'unpaid' if the respondent did not obtain an income. Meanwhile, the category 'paid' referred to participants who obtained an income in the form of cash only, cash and in-kind payments or in-kind payments only.

The variable capturing knowledge about HIV was constructed based on several other variables that indicated the respondents' knowledge of HIV transmission, safe sex behaviours and transmission during pregnancy. These variables were 'reduce risk of getting HIV: always use condoms during sex', 'reduce risk of getting HIV: have 1 sex partner only, who has no other partners', 'can get HIV from mosquito bites', 'can get HIV by sharing food with people who have AIDS', 'a healthy-looking person can have HIV', 'HIV transmitted during pregnancy', 'HIV transmitted during delivery' and 'HIV transmitted by breastfeeding' (Demographic Health Survey, 2017). Each variable was then recoded with the statements 'yes' and 'no' to obtain a consistent measure of HIV knowledge. The response 'do not know' was excluded. All of the variables were compiled to obtain the new 'knowledge' variable. This variable was then categorised into three categories: 'No knowledge' if 'no' for all variables, 'Some knowledge' if the respondent answered 'yes' to –one to four variables and 'More knowledge' if the respondent answered 'yes' to –five to eight variables.

The variable for information about HIV-AIDS was constructed based on several other variables that indicated what the respondents received in terms of information about HIV-AIDS. The variables were 'source for AIDS knowledge: internet', 'radio', 'Newspaper/

magazine', 'television', 'health professional', 'community meeting', 'seminar/counselling' and 'school/teacher' (Demographic Health Survey, 2017). Each variable was recoded with the statements 'yes' and 'no' to obtain a consistent measure of sources of information on HIV-AIDS. All of the variables were compiled to obtain the new 'information' variable. This variable was then categorised into three groups, namely, 'No information' if 'No' for all variables, 'Some information' if the respondent answered 'yes' to –one to three variables and 'More Information' if the respondent answered 'yes' to –four to seven variables.

### 2.3.2 | Dependent variable

The dependent variable in this study is willingness to care for PLHA. This variable was categorised into two categories: 'Yes' if the respondent was willing to care for PLHA and 'No' if the respondent was not (Demographic Health Survey, 2017).

## 2.4 | Data analysis

The research data were analysed using chi-square and binary logistic regression analyses. This study used an odds ratio (OR) with a 95% CI and a 5% significance level. The data analysis was conducted with STATA version 16.1 software.

## 3 | RESULTS

The results in Table 1 show that more than 70% of respondents are willing to care for PLHA in Indonesia, which is good. It can also be seen that in Indonesia, the population's acceptance of PLHA is acceptable. In this study, more than 40% of respondents were aged 35–49, with the majority being women. More than half of the total respondents had a secondary education. A quarter of the total respondents were in the richest wealth quintiles. More than half of the total respondents lived in urban areas, and the majority had jobs and were paid. From the results of the study, it is also known that more than 80% of respondents have more knowledge about HIV obtained from some sources of information.

Based on the bivariate chi-square test, all the variables have a significant relationship with willingness to care for PLHA in Indonesia. The levels of significance were 5% and 1% (see Table 2).

The results of the multivariate analysis with binary logistics show that age, sex, wealth quintile, employment status and information have a very significant relationship with willingness to care for PLHA in Indonesia. The results showed that respondents aged 35–49 years were 0.818 times less likely to be willing to care for PLHA than those in other age ranges [AOR: 0.818, *p*: 0.048, CI: 0.670, 0.998]. Female respondents were 2.067 times more likely to be willing to care for PLHA than men [AOR: 2.067, *p*: 0.000, CI: 1.870, 2.285]. The results of the analysis of the wealth quintile variable indicate that all

**TABLE 1** Respondents' socioeconomics and demographics  
(*n* = 13,731)

Characteristics	<i>n</i>	%
<b>Age</b>		
50–54 years old	522	3.80
35–49 years old	5,838	42.52
25–34 years old	4,219	30.73
15–24 years old	3,152	22.96
<b>Sex</b>		
Male	2,818	20.52
Female	10,913	79.48
<b>Education</b>		
High education	4,053	29.52
Secondary education	7,285	53.06
Primary education	2,337	17.02
No education	56	0.41
<b>Wealth quintiles</b>		
Poorest	1,943	14.15
Poorer	2,337	17.02
Middle	2,795	20.36
Richer	3,176	23.13
Richest	3,480	25.34
<b>Residence</b>		
Urban	8,086	58.89
Rural	5,645	41.11
<b>Currently working</b>		
No	1,383	10.07
Yes	12,348	89.93
<b>Respondents' earning</b>		
Not paid	2,222	16.18
Paid	11,509	83.82
<b>Knowledge</b>		
No knowledge	30	0.22
Some knowledge	1,575	11.47
More knowledge	12,126	88.31
<b>Information</b>		
No information	970	7.06
Some information	11,721	85.36
More information	1,040	7.57
<b>Willingness to care</b>		
No	3,867	28.16
Yes	9,864	71.84

levels of wealth quintiles have a significant relationship with willingness to care for PLHA. However, respondents in the richest wealth quintile were 1.453 more likely to be willing to care for PLHA than those in other wealth levels [AOR: 1.453, *p*: 0.000, CI: 1.264, 1.671]. Respondents who were currently working were 0.857 times less likely to be willing to care for PLHA [AOR: 0.857, *p*: 0.026, CI: 0.748,

0.981]. Respondents with more information about HIV, as measured by the number of information sources, were 1.579 more likely to be willing to care for PLHA than respondents who had fewer sources of information [AOR: 1.579, *p*: 0.000, CI: 1.287, 1.937]. However, education level, residence, respondents' earnings and knowledge did not have a significant relationship with willingness to care for PLHA in Indonesia (see Table 3).

## 4 | DISCUSSION

This study shows that the factors related to willingness to care for PLHA are respondents' age, sex, wealth quintile, employment status and number of information sources. Age is one of the factors influencing willingness to care for PLHA in Indonesia. The results showed that in Indonesia, older respondents are less likely to be willing to care for PLHA (Yuan et al., 2012). Elderly respondents have limitations in providing care including physical, financial and psychological limitations (Gilligan & Ie, 2018). Older people in the family also have various duties, such as taking care of children, parents, other elderly people, chores and giving financial support to their family. Providing care for PLHA within the family is an additional duty (Hsieh et al., 2017). A program needs to be developed to equalize responsibilities and increase willingness to care for PLHA through education that caring for PLHA is the family's responsibility.

Women in this study showed more willingness to care for PLHA in Indonesia than men. Motherhood is a common trait among women; this trait encourages a woman to be gentle, full of affection and sincere (Kartono, 2007), and they have more traits to help them care for those who are sick or weak (Anezaki & Hashimoto, 2017; Aronson, 1992). The maternal trait of helping others makes women more willing to take care of PLHA. This finding is in accordance with the findings of other research that show that women have more sensitive feelings leading them to care for PLHA (Dahlui et al., 2015; Lemn et al., 2018). Although caring is a maternal trait, a program to educate people about the importance of caring for PLHA and education regarding the fact that caring for PLHA is the responsibility of all family members, not limited to those of the male or female gender, must be provided.

From this study, we gather that individuals in each wealth quintile in Indonesia (poorer, middle, richer and richest) are willing to take care of PLHA. This study also shows that the type of income respondents have is not related to their willingness to care for PLHA. The willingness to care for PLHA is not determined based on wealth or the respondent's earnings. Willingness to care is an altruistic act, so there is no need to look at economic status (Watson, 1988). Willingness to care for others is an altruistic act that arises from a commitment to help and satisfaction with others through giving and caring. These acts are enhanced by beliefs, culture and the arts (Watson, 2007). In Indonesian families, caring for a sick family member is a form of devotion to the older members and affection for the younger members. These cultural beliefs regarding caring for sick family members need to be maintained and strengthened. This

TABLE 2 Bivariate analysis ( $n = 13,731$ )

Variables	Willingness to care for PLHA				<i>p</i>	$\chi^2$
	No		Yes			
	<i>n</i>	%	<i>n</i>	%		
<b>Age</b>						
50–54 years old	200	1.46	322	2.35	0.000	116.84***
35–49 years old	1,815	13.22	4,023	29.30		
25–34 years old	1,168	8.51	3,051	22.22		
15–24 years old	684	4.98	2,468	17.97		
<b>Sex</b>						
Male	1,170	8.52	1,648	12.00	0.000	312.64***
Female	2,697	19.64	8,216	59.84		
<b>Education</b>						
High education	1,052	7.66	3,001	21.86	0.002	14.93***
Secondary education	2,099	15.29	5,186	37.77		
Primary education	699	5.09	1,638	11.93		
No education	17	0.12	39	0.28		
<b>Wealth quintiles</b>						
Poorest	664	4.84	1,279	9.31	0.000	45.30***
Poorer	675	4.92	1,662	12.10		
Middle	763	5.56	2,032	14.80		
Richer	847	6.17	2,329	16.96		
Richest	918	6.69	2,562	18.66		
<b>Residence</b>						
Urban	2,223	16.19	5,863	42.70	0.037	4.37**
Rural	1,644	11.97	4,001	29.14		
<b>Currently working</b>						
No	311	2.26	1,072	7.81	0.000	24.48***
Yes	3,556	25.90	8,792	64.03		
<b>Respondents' earning</b>						
Not paid	573	4.17	1,649	12.01	0.007	7.39***
Paid	3,294	23.99	8,215	59.83		
<b>Knowledge</b>						
No knowledge	9	0.07	21	0.15	0.046	6.15**
Some knowledge	402	2.93	1,173	8.54		
More knowledge	3,456	25.17	8,670	63.14		
<b>Information</b>						
No information	365	2.66	605	4.41	0.000	50.11***
Some information	3,244	23.63	8,477	61.74		
More information	258	1.88	782	5.70		

Note: PLHA, people living with HIV-AIDS.

\*\* $p < 0.05$ .

\*\*\* $p < 0.01$ .

relates to previous research that shows that the willingness to care for PLHA is not determined based on economic levels. However, respondents with more wealth find it easier to provide care (Johnson et al., 2020; Takarinda et al., 2016).

Respondents who are currently working are less likely to be willing to care for PLHA in Indonesia. Especially for those who are of productive age, taking care of PLHA is an additional duty (Hsieh et al., 2017). Several caregivers not only provide care for PLHA but

TABLE 3 Multivariate analysis ( $n = 13,731$ )

Variables	Willingness to care for PLHA		
	AOR	<i>p</i>	95% CI
<b>Age</b>			
50–54 years old	1.000		
35–49 years old	0.818**	0.048	[0.670, 0.998]
25–34 years old	0.928	0.477	[0.755, 1.141]
15–24 years old	1.136	0.257	[0.911, 1.415]
<b>Sex</b>			
Male	1.000		
Female	2.067***	0.000	[1.870, 2.285]
<b>Education</b>			
High education	1.000		
Secondary education	0.972	0.552	[0.884, 1.068]
Primary education	1.136*	0.054	[0.998, 1.293]
No education	1.309	0.371	[0.726, 2.360]
<b>Wealth quintiles</b>			
Poorest	1.000		
Poorer	1.315***	0.000	[1.150, 1.504]
Middle	1.407***	0.000	[1.232, 1.607]
Richer	1.442***	0.000	[1.261, 1.649]
Richest	1.453***	0.000	[1.264, 1.671]
<b>Residence</b>			
Urban	1.000		
Rural	1.047	0.284	[0.963, 1.139]
<b>Currently working</b>			
No	1.000		
Yes	0.857**	0.026	[0.748, 0.981]
<b>Respondents' earning</b>			
Not paid	1.000		
Paid	0.926	0.165	[0.830, 1.032]
<b>Knowledge</b>			
No knowledge	1.000		
Some knowledge	0.869	0.732	[0.389, 1.942]
More knowledge	0.656	0.301	[0.296, 1.457]
<b>Information</b>			
No information	1.000		
Some information	1.473***	0.000	[1.277, 1.699]
More information	1.579***	0.000	[1.287, 1.937]

Note: CI, Confident Interval; PLHA, people living with HIV-AIDS.

\* $p < 0.1$ .

\*\* $p < 0.05$ .

\*\*\* $p < 0.01$ .

also work jobs, this situation leads to role discomfort (Valjee & van Dyk, 2014). Such individuals have other duties, such as chores, taking care of other dependents and sometimes being the breadwinner (Sharma et al., 2016). These multiple roles can lead to less time for

caring for PLHA. This finding is in accordance with previous research that states that respondents who work have less time to pay attention to and are less willing to care for PLHA (Suominen et al., 2015; Välimäki et al., 2008). However, good cooperation between residents and the local government can provide solutions that allow such individuals to pay attention to the welfare of and care for PLHA so that they can have a better quality of life.

Respondents who have good sources of information about HIV are more likely to care for PLHA in Indonesia. From the results of the study, it was found that respondents with more sources of information about HIV were more likely to be willing to care for PLHA. Respondents with good information sources have good coping strategies, so they can understand the conditions experienced by PLHA (Chen et al., 2016). Those without good information are not willing to care for PLHA because they are afraid of contact with HIV (Cowgill et al., 2008). Incomplete or incorrect sources of information can also interrupt the adherence of PLHA to their medications (de Alvarenga & Dupas, 2014). However, caregivers with good sources of information can learn more about HIV transmission, so they are willing to care for PLHA. This study agrees with previous research that states that the sources of information obtained by respondents can provide a good basis for caring for PLHA (Gombachika et al., 2013). The government needs to disseminate information through the mass media or health education.

Education level and knowledge are not factors related to willingness to care for PLHA in Indonesia. Willingness does not have to be based on a high level of education and good knowledge. It comes from the awareness of the need for the individual to provide help and care for PLHA. Education level and knowledge are associated with more resources, income, information and networks for support (Chen et al., 2016). Knowledge about HIV transmission is low, especially regarding safe sexual activity (Sistiarani et al., 2018). Rationally, if the respondent has a good level of knowledge and a high level of education, they should be willing to take care of PLHA. However, if this knowledge and education is not accompanied by a sense of caring, then they will not be. This is consistent with previous research that states that the level of knowledge about HIV is not related to the willingness to care for PLHA (English et al., 2020; Yang, 2014). The thing that needs to be emphasised is how to build a sense of care for and attention to PLHA in society or as individuals. Family healthcare functions need to be strengthened. Healthcare functions are reflected in the provision of needs such as physical food, clothing and shelter as well as healthcare. The prevention of HIV-AIDS transmission is one manifestation of efforts to achieve healthcare functions (Sistiarani et al., 2018). However, it would be better if this were accompanied by good knowledge and a high level of education (Qu et al., 2010). Education to improve knowledge about and attitudes towards HIV must be provided.

In addition, whether the respondents live in rural and urban areas is not related to their willingness to care for PLHA. The former may not be exposed to HIV-related information, so they are not willing to take care of PLHA. Furthermore, geographic access to health facilities is a supporting factor. The majority of respondents who

live in urban areas have a high level of activity and low tolerance for PLHA (Bretagnolle et al., 2009; Zhang et al., 2020). This finding is in accordance with previous research that states that residence is not a factor related to willingness to care for PLHA (Djan, 2018; Yang, 2014). The government must pay attention to these conditions to effectively disseminate information and knowledge about HIV at the rural level, as well as increase the sense of caring among urban communities.

## 5 | IMPLICATIONS AND LIMITATIONS

### 5.1 | Implications

Based on the importance of information obtained about the factors associated with willingness to care PLHA, our study found interesting insights and information such as gender, wealth status and information were more likely to be willing to care PLHA. This can be used as basic information for the government and public healthcare to determine further policies.

Providing appropriate information to the public regarding the process of transmission and treatment of PLHA can increase information and willingness to care PLHA. Monitoring and evaluation to the policies that have been made by the government and public healthcare regarding the dissemination of HIV-AIDS information in the community is needed. Collaboration between the government, health workers and the community is needed to obtain evidence-based existing in the community, so that it can be considered to determine further policies. In this digital era, the government can also collaborate with influencers in Indonesia to carry out campaigns and disseminate information about HIV-AIDS through social media platforms. With the appropriate information, people can be willing to care, coexist and socialise with PLHA. In addition, with good acceptance from the community, PLHA's quality of life can improve.

### 5.2 | Limitations

This study uses cross-sectional data, and we have to be cautious in interpreting the results causally. We must pay attention to the limitations of this study regarding generalisability due to the sampling strategy, geography, location and self-reported nature of the data.

## 6 | CONCLUSION

This study shows that the increasing age of respondents can be an obstacle to willingness to care for PLHA. Moreover, it is known that females are more willing to care for PLHA than are males. The wealth of the respondent is not related to willingness to care for PLHA. Individuals with all levels of wealth are found to be willing to care for PLHA. Respondents who have jobs and good information coverage are willing to care for PLHA in Indonesia. In this study, levels of

education and knowledge were found to be unrelated to willingness to care for PLHA. The dissemination of correct and accurate information about HIV-AIDS can help the community and society understand this condition. Thus, they can accept PLHA and become willing to provide care. The government can determine further policies for the appropriate dissemination of information, maximally and in accordance with the recommendations in this study. Collaborations among the government, health workers and the community are needed.

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### AUTHOR CONTRIBUTION

T.S., N.N., H.A: Substantial contributions to the conception or design of the work. H.A., T.S: analysis, interpretation of data. H.A: revising manuscript and critically for important intellectual content. T.S., N.N., H.A: Final approval


### CONFLICT OF INTEREST


Authors declare no conflict of interest.


### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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### REFERENCES

- Alemu, T., Biadgilign, S., Deribe, K., & Escudero, H. R. (2013). Experience of stigma and discrimination and the implications for healthcare seeking behavior among people living with HIV/AIDS in resource-limited setting. *Journal of Petrology*, 369(1), 1689–1699. <https://doi.org/10.1017/CBO9781107415324.004>
- Anezaki, H., & Hashimoto, H. (2017). Process value of care safety: Women's willingness to pay for perinatal services. *International Journal for Quality in Health Care*, 29(4), 484–489. <https://doi.org/10.1093/intqhc/mzx049>
- Aronson, J. (1992). Women's sense of responsibility for the care of old people. *Gender & Society*, 6(1), 8–29. <https://doi.org/10.1177/089124392006001002>
- BPS. (2010). *Peraturan Kepala Badan Pusat Statistik Nomor 37 Tahun 2010 Tentang Klasifikasi Perkotaan dan Perdesaan di Indonesia* [Head of the central statistics agency regulation no. 37 year 2010 about the urban and rural classification in Indonesia]. Badan Pusat Statistik. Retrieved from [http://sirusa.bps.go.id/webadmin/doc/MFD\\_2010\\_Buku\\_1.pdf](http://sirusa.bps.go.id/webadmin/doc/MFD_2010_Buku_1.pdf)
- Bretagnolle, A., Pumain, D., & Vacchiani-Marcuzzo, C. (2009). The organization of urban systems. In *Complexity perspectives in innovation and social change* (pp. 197–220). [https://doi.org/10.1007/978-1-4020-9663-1\\_7](https://doi.org/10.1007/978-1-4020-9663-1_7)
- Chen, R., Lang, L., Clifford, A., Chen, Y., Hu, Z., & Han, T. S. (2016). Demographic and socio-economic influences on community-based care and caregivers of people with dementia in China.

- JRSM Cardiovascular Disease, 5, 204800401665231. <https://doi.org/10.1177/2048004016652314>
- Cowgill, B. O., Bogart, L. M., Corona, R., Ryan, G., & Schuster, M. A. (2008). Fears about HIV transmission in families with an HIV-infected parent: a qualitative analysis. *Pediatrics*, 122(5), e950–e958. <https://doi.org/10.1542/peds.2008-0390>
- Croft, N. T., Marshall, A. M. J., & Allen, C. K. (2018). *Guide to DHS statistics (Version 2)*. ICF International.
- Dahlu, M., Azahar, N., Bulgiba, A., Zaki, R., Oche, O. M., Adekunjo, F. O., & Chinna, K. (2015). HIV/AIDS related stigma and discrimination against PLWHA in Nigerian population. *PLoS One*, 10(12), e0143749. <https://doi.org/10.1371/journal.pone.0143749>
- de Alvarenga, W. A., & Dupas, G. (2014). Experience of taking care of children exposed to HIV: A trajectory of expectations. *Revista Latino-Americana de Enfermagem*, 22(5), 848–856. <https://doi.org/10.1590/0104-1169.3607.2489>
- Demographic Health Survey. (2017). *Guide to DHS statistics DHS-7*.
- Demographic Health Survey. (2018). *Wealth quintiles*. USAID. Retrieved from [https://dhsprogram.com/data/Guide-to-DHS-Statistics/Wealth\\_Quintiles.htm](https://dhsprogram.com/data/Guide-to-DHS-Statistics/Wealth_Quintiles.htm)
- Djan, D. (2018). Factors affecting the attitude of young people towards HIV testing uptake in rural Ghana. *Journal of HIV & Retro Virus*, 4(2). <https://doi.org/10.21767/2471-9676.100045>
- Dubé, K., Evans, D., Sylla, L., Taylor, J., Weiner, B. J., Skinner, A., Thirumurthy, H., Tucker, J. D., Rennie, S., & Greene, S. B. (2017). Willingness to participate and take risks in HIV cure research: Survey results from 400 people living with HIV in the US. *Journal of Virus Eradication*, 3(1), 40–71. [https://doi.org/10.1016/S2055-6640\(20\)30295-8](https://doi.org/10.1016/S2055-6640(20)30295-8)
- English, D., Carter, J. A., Bowleg, L., Malebranche, D. J., Talan, A. J., & Rendina, H. J. (2020). Intersectional social control: The roles of incarceration and police discrimination in psychological and HIV-related outcomes for Black sexual minority men. *Social Science and Medicine*, 258, 113121. <https://doi.org/10.1016/j.socscimed.2020.113121>
- Fiorentino, M., Protière, C., Sagaon-Teyssier, L., Mimi, M., Fressard, L., Arnold, M., Lambotte, O., Barbot, J., Fainzang, S., Meyer, L., Goujard, C., Préau, M., Spire, B., & Suzan-Monti, M. (2019). What is the effect of self-identified HIV activism in willingness to participate in HIV cure-related clinical trials? Results from the ANRS-APSEC study. *Journal of Virus Eradication*, 5(3), 152–162. [https://doi.org/10.1016/S2055-6640\(20\)30045-5](https://doi.org/10.1016/S2055-6640(20)30045-5)
- Fitriyani, R. A., & Waluyo, A. (2019). Family acceptance, peer support, and HIV serostatus disclosure of MSM-PLWHA in Medan, Indonesia. *Enfermeria Clínica*, 29, 648–652. <https://doi.org/10.1016/j.enfcli.2019.04.099>
- Fredriksen-Goldsen, K. I., Shiu, C. S., Starks, H., Chen, W. T., Simoni, J., Kim, H. J., Pearson, C., Zhao, H., & Zhang, F. (2011). "You must take the medications for you and for me": Family caregivers promoting HIV medication adherence in China. *AIDS Patient Care and STDs*, 25(12), 735–741. <https://doi.org/10.1089/apc.2010.0261>
- Fu, G., Shi, Y., Yan, Y., Li, Y., Han, J., Li, G., Lin, R., Wang, Y., Fu, Z., Gong, Q., Gan, Y., Wei, J., & Wang, J. (2018). The prevalence of and factors associated with willingness to utilize HTC service among college students in China. *BMC Public Health*, 18(1), 1–10. <https://doi.org/10.1186/s12889-018-5953-0>
- Gilligan, R., & Ie, R. (2018). Age limits and eligibility conditions for care, extended care and leaving care support for young people in care and care leavers: The case for cross-national analysis. *Scottish Journal of Residential Child Care*, 17(2), 1–16.
- Gombachika, B. C., Chirwa, E., Malata, A., & Maluwa, A. (2013). Sources of information on HIV and sexual and reproductive health for couples living with HIV in rural southern Malawi. *AIDS Research and Treatment*, 2013, 1–11. <https://doi.org/10.1155/2013/235902>
- Harapan, H., Khalilullah, S. A., Anwar, S., Zia, M., Novianty, F., Putra, R. P., Nesyra, S., Putra, T. N., Kumalasari, I. S., Pratama, R., Joris, E. B., Nasution, M. P., Kurniawan, H., Hossain, M. B., & Yani, M. (2015). Discriminatory attitudes toward people living with HIV among health care workers in Aceh, Indonesia: A vista from a very low HIV caseload region. *Clinical Epidemiology and Global Health*, 3(1), 29–36. <https://doi.org/10.1016/j.cegh.2013.08.001>
- Health Ministry of Republic Indonesia. (2009). *Age classification based on category*. Ditjen Yankes.
- Hsieh, J., Li, L., Lin, C., Luo, S., & Ji, G. (2017). Spousal role and caregiver burden in HIV affected families in Anhui Province, China. *AIDS Care – Psychological and Socio-Medical Aspects of AIDS/HIV*, 29(10), 1270–1274. <https://doi.org/10.1080/09540121.2017.1300631>
- Johnson, C., Neuman, M., MacPherson, P., Choko, A., Quinn, C., Wong, V. J., Hatzold, K., Nyrienda, R., Ncube, G., Baggaley, R., Terris-Prestholt, F., & Corbett, E. L. (2020). Use and awareness of and willingness to self-test for HIV: An analysis of cross-sectional population-based surveys in Malawi and Zimbabwe. *BMC Public Health*, 20(1), 1–13. <https://doi.org/10.1186/s12889-020-08855-7>
- Kartono, K. (2007). *Psikologi Wanita*. CV. Mandar Maju.
- Kementrian Pendidikan dan Kebudayaan. (2003). *UU No. 20 Tahun 2003 Tentang Sistem Pendidikan Nasional*. Sistem Informasi Manajemen Keuangan Kementerian Pendidikan Dan Kebudayaan RI; Kementerian Pendidikan dan Kebudayaan.
- Knowlton, A. R., Amsten, J. H., Gourevitch, M. N., Eldred, L., Wilkinson, J. D., Rose, C. D., Buchanan, A., Purcell, D. W.; INSPIRE Study Team. (2007). Microsocial environmental influences on highly active antiretroviral therapy outcomes among active injection drug users: The role of informal caregiving and household factors. *Journal of Acquired Immune Deficiency Syndromes*, 46(Suppl 2), S110–S119. <https://doi.org/10.1097/QAI.0b013e31815767f8>
- Krupchanka, D., Chrtková, D., Vítková, M., Munzel, D., Čihařová, M., Růžičková, T., Winkler, P., Janoušková, M., Albanese, E., & Sartorius, N. (2018). Experience of stigma and discrimination in families of persons with schizophrenia in the Czech Republic. *Social Science and Medicine*, 212, 129–135. <https://doi.org/10.1016/j.socscimed.2018.07.015>
- Leblanc, N. M., & Andes, K. L. (2015). An Exploration of men's knowledge, attitudes, and perceptions of HIV, HIV risk, and willingness to test for HIV in Yendi District, Northern Ghana. *Journal of the Association of Nurses in AIDS Care*, 26(3), 281–295. <https://doi.org/10.1016/j.jana.2014.09.006>
- Lemin, A. S., Rahman, M. M., & Pangarah, C. A. (2018). Factors affecting intention to disclose HIV status among adult population in Sarawak, Malaysia. *Journal of Environmental and Public Health*, 2018, 1–8. <https://doi.org/10.1155/2018/2194791>
- Lindayani, L., Chen, Y.-C., Wang, J.-D., & Ko, N.-Y. (2018). Complex problems, care demands, and quality of life among people living with HIV in the antiretroviral era in Indonesia. *Journal of the Association of Nurses in AIDS Care*, 29(2), 300–309. <https://doi.org/10.1016/j.jana.2017.10.002>
- Lukihardanti, A., & Hafil, M. (2019). *Dokter Gigi Masih Banyak yang Menolak Pengidap AIDS*. Republika Online. <https://nasional.republika.co.id/berita/q1uy2g430/dokter-gigi-masih-banyak-yang-menolak-pengidap-aids>
- Ma, H., & Loke, A. Y. (2020). Knowledge of, attitudes towards, and willingness to care for sex workers: Differences between general and mental health nursing students. *Journal of Professional Nursing*. <https://doi.org/10.1016/j.profnurs.2020.01.002>
- ONUSIDA/UNAIDS. (2020). *Global HIV & AIDS statistics – 2020 fact sheet*UNAIDS. UNAIDS. Retrieved from <https://www.unaids.org/en/resources/fact-sheet>
- Qu, B., Zhang, Y., Guo, H., & Sun, G. (2010). Relationship between HIV/AIDS knowledge and attitude among student nurses: A structural



- equation model. *AIDS Patient Care and STDs*, 24(1), 59–63. <https://doi.org/10.1089/apc.2009.0190>
- Rahmatin, E., & Azinar, M. (2017). Faktor-Faktor yang Berhubungan dengan Keteraturan Kunjungan Layanan Care Support And Treatment (CST) pada Pasien Koinfeksi Tb-HIV di Balai Kesehatan Paru Wilayah Semarang. *Public Health Perspective Journal*, 2(1), 105–110.
- Ransome, Y., Bogart, L. M., Kawachi, I., Kaplan, A., Mayer, K. H., & Ojikutu, B. (2020). Area-level HIV risk and socioeconomic factors associated with willingness to use PrEP among Black people in the U.S. South. *Annals of Epidemiology*, 42, 33–41. <https://doi.org/10.1016/j.annepidem.2019.11.002>
- Sanga, E. S., Mukumbang, F. C., Mushi, A. K., Lerebo, W., & Zarowsky, C. (2019). Understanding factors influencing linkage to HIV care in a rural setting, Mbeya, Tanzania: Qualitative findings of a mixed methods study. *BMC Public Health*, 19(1), 1–15. <https://doi.org/10.1186/s12889-019-6691-7>
- Sari, N. P. W. P., & Parut, A. A. (2019). HIV/AIDS-related knowledge and willingness to participate in voluntary counseling and testing among health sciences university students. *Jurnal Ners*, 13(2), 162. <https://doi.org/10.20473/jn.v13i2.6716>
- Sayefudin, A. (2017). *Miris, Pria Pengidap HIV di Rembang Ditolak Keluarganya*. DetikNews. Retrieved from <https://news.detik.com/berita-jawa-tengah/d-3716887/miris-pria-pengidap-hiv-di-rembang-ditolak-keluarganya>
- Sharma, N., Chakrabarti, S., & Grover, S. (2016). Gender differences in caregiving among family – Caregivers of people with mental illnesses. *World Journal of Psychiatry*, 6(1), 7. <https://doi.org/10.5498/wjpv.v6.i1.7>
- Sistiarani, C., Hariyadi, B., Munasib, M., & Sari, S. (2018). Peran Keluarga dalam Pencegahan HIV/ AIDS di Kecamatan Purwokerto Selatan. *Jurnal Ilmu Keluarga Dan Konsumen*, 11(2), 96–107. <https://doi.org/10.24156/jikk.2018.11.2.96>
- Stroumpouki, T., Perrett, S., Kasdovasilis, P., Papatheodorou, P., Pappazios, V., & Stavropoulou, A. (2020). "A journey towards acceptance": The process of adapting to life with HIV in Greece. A qualitative study. *Applied Nursing Research*, 53, 151249. <https://doi.org/10.1016/j.apnr.2020.151249>
- Suominen, T., Laakkonen, L., Lioznov, D., Polukova, M., Nikolaenko, S., Lipiäinen, L., Välimäki, M., & Kylmä, J. (2015). Willingness to take care of HIV positive people: Responses from Russian nursing students. *Nordic Journal of Nursing Research*, 35(2), 71–76. <https://doi.org/10.1177/0107408314560323>
- Takarinda, K. C., Madyira, L. K., Mhangara, M., Makaza, V., Maphosa-Mutsaka, M., Rusakaniko, S., Kilmarx, P. H., Mutasa-Apollo, T., Ncube, G., & Harries, A. D. (2016). Factors associated with ever being HIV-tested in Zimbabwe: An extended analysis of the Zimbabwe Demographic and Health Survey (2010–2011). *PLoS One*, 11(1), e0147828. <https://doi.org/10.1371/journal.pone.0147828>
- U.S. Department of Health & Human Services. (2020). *Global statistics. HIV.Gov*. Retrieved from <https://www.hiv.gov/hiv-basics/overview/data-and-trends/global-statistics>
- UNAIDS. (2018). *Indonesia*. Retrieved from <https://www.UNAIDS.org/en/regionscountries/countries/indonesia>
- Välimäki, M., Makkonen, P., Blek-Vehkaluoto, M., Mockiene, V., Istomina, N., Raid, U., Vänskä, M.-L., & Suominen, T. (2008). Willingness to care for patients with HIV/AIDS. *Nursing Ethics*, 15(5), 586–600. <https://doi.org/10.1177/0969733008092868>
- Valjee, L., & van Dyk, A. C. (2014). Impact of caring for people living with HIV on the psychosocial well-being of palliative caregivers. *Curatationis*, 37(1), 1201. <https://doi.org/10.4102/curatationis.v37i1.1201>
- Vyas, S., & Kumaranayake, L. (2006). Constructing socio-economic status indices: How to use principal components analysis. *Health Policy and Planning*, 21(6), 459–468. <https://doi.org/10.1093/heapol/czl029>
- Wagner, G. J., & Ryan, G. W. (2004). Relationship between routinization of daily behaviors and medication adherence in HIV-positive drug users. *AIDS Patient Care STDs*, 18(7), 385–393. <https://doi.org/10.1089/1087291041518238>
- Watson, J. (2002). Intentionality and caring-healing consciousness: A practice of transpersonal nursing. *Holistic Nursing Practice*, 9(5). <https://doi.org/10.1097/00004650-200207000-00005>
- Watson, J. (2007). Watson's theory of human caring and subjective living experiences: Carative factors/caritas processes as a disciplinary guide to the professional nursing practice. *Texto & Contexto – Enfermagem*, 16(1), 129–135. <https://doi.org/10.1590/S0104-0702007000100016>
- Watson, M. J. (1988). New dimensions of human caring theory. *Nursing Science Quarterly*. <https://doi.org/10.1177/089431848800100411>
- Yang, S. A. (2014). Factors influencing nursing students' willingness to care for HIV/AIDS-infected patients in Korea. *Journal of Digital Convergence*, 12(11), 469–486. <https://doi.org/10.14400/JDC.2014.12.11.469>
- You, L. M., Aiken, L. H., Sloane, D. M., Liu, K., He, G. P., Hu, Y., Jiang, X. L., Li, X. H., Li, X. M., Liu, H. P., Shang, S. M., Kutney-Lee, A., & Sermeus, W. (2013). Hospital nursing, care quality, and patient satisfaction: Cross-sectional surveys of nurses and patients in hospitals in China and Europe. *International Journal of Nursing Studies*, 50(2), 154–161. <https://doi.org/10.1016/j.ijnurstu.2012.05.003>
- Yuan, L., Li, X., Li, X., Shi, J., Jiang, L., Zhang, C., Yang, X., Zhang, Y., & Zhao, Y. (2012). Factors associated with willingness to participate in free HIV test among general residents in Heilongjiang, Northeast China. *BMC Infectious Diseases*, 12(1), 1. <https://doi.org/10.1186/1471-2334-12-256>
- Zhang, L., Zeng, Y., Wang, L., & Fang, Y. (2020). Urban-rural differences in long-term care service status and needs among home-based elderly people in China. *International Journal of Environmental Research and Public Health*, 17(5). <https://doi.org/10.3390/ijerph17051701>

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