Original Article

Evaluation of health literacy among men who have sex with men with living HIV

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Abstract

OBJECTIVES: The study aimed to investigate health literacy among men who have sex with men with living HIV and factors associated with adequate health literacy.

MATERIALS AND METHODS: The study is a cross-sectional survey. Participants were 203 HIV-infected men who have sex with men (MSM). Participants were evaluated on health literacy and associated factors.

RESULTS: Participants were aged an average 34.54 ± 10.18 years, and 79.2% had a bachelor's degree or higher education level. Most participants (62.5%) had 15,001-25,000 Thai baht monthly income. 45.8 % of participants had been diagnosed with HIV infection for over 1 year but less than 5 years. Most participants (88.2%) had a CD4 count of more than 200 cells/cm^3, and more participants (70.4%) had a viral load of less than 20 copies/ml. The majority (66%) had adequate health literacy, and an average score was 15.41. The level of health literacy was significantly associated with education, duration of HIV infection, CD4 count, viral load, and cryptococcosis ($p < 0.05$, $p < 0.05$, $p < 0.01$, $p < 0.01$ and $p < 0.05$, respectively).

CONCLUSION: Almost all men who have sex with men have adequate health literacy. Education, duration of HIV infection, CD4 count, viral load, and cryptococcosis were associated with level of health literacy.

Keywords: HIV, Health literacy, Men who have sex with men, MSM,

The HIV (Human Immunodeficiency Virus) epidemic has been a significant global health challenge for several decades. Since the discovery of HIV in the early 1980s, the virus has spread to millions of individuals worldwide.[1] It has affected millions of individuals worldwide and is a significant public health concern. As of 2020, the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates persons worldwide living with HIV at 38 million, 1.7 million have been newly infected, and 690,000 died of HIV disease.[2] Globally, men who have sex with men (MSM) are disproportionately affected by HIV compared to the general population. In many countries, the HIV prevalence among MSM is considerably higher than in the heterosexual population.[3] Despite significant advancements in HIV prevention and treatment, MSM faces unique challenges, including higher rates of high-risk sexual behaviors, limited health literacy and access to healthcare due to discrimination, and systemic barriers contributing to their heightened vulnerability.[4]

Health literacy, particularly in the context of HIV, plays a pivotal role in the well-being of MSM living with HIV.[5] These individuals often confront multifaceted challenges, including navigating complex treatment regimens, understanding viral load and CD4 counts, and making informed decisions about safer sex practices.[6] Adequate health literacy empowers MSM to control their HIV care, engage effectively with healthcare providers, and make informed decisions regarding treatment options and

prevention strategies. It also reduces stigma and discrimination, fostering a more inclusive and supportive environment for MSM within the healthcare system.[7,8] Addressing the specific health literacy needs of MSM living with HIV is essential to comprehensive HIV care and prevention programs. The study evaluated health literacy among men who have sex with men with living HIV and investigated factors associated with adequate health literacy and potential predictors.

Materials and Methods

This was a cross-sectional survey. Participant data were collected with the approval of the Human Research Ethics Committee of the Faculty of Medicine, Thammasat University (MTU-EC-IM-0-250/64). The target population was HIV-infected men who had sex with other men (MSM) in the HIV clinic of the Thammasat University Hospital, Thailand, and volunteered to be evaluated about health literacy and associated factors.

Study population and procedures

Participants were HIV-infected MSM aged 18 years and older, fluent in thai language, and could provide informed consent. Patients who had been diagnosed by a physician as having psychiatric disease, cognitive impairment, or memory impairment were excluded from this study. Therefore, the final number of eligible respondents in this study was 203 HIV-infected MSM.

All eligible respondents were recruited purposively, informed verbally, and submitted a written consent form. The participants completed an anonymous internet-based questionnaire. The questionnaire consisted of two sections: the first pertained to demographic information, and the second was the HIV-health literacy test.

Measurements

Demographic items

The questionnaire consisted of 15 close-ended questions regarding the participant's general characteristics (age, educational background, occupation, income, payment for medical services, duration after the first diagnosis of HIV infection, CD4 count, viral load, and previous history of opportunistic infections within the past 6 months).

The Thai version of the HIV-HLT[9]

The Thai version of the HIV-HLT was utilized to assess HIV health literacy. The self-report questionnaire consisted of 17 items evaluating HIV knowledge and adherence to antiretroviral therapy (ART). The total possible scores were 0-17, with higher scores representing better health literacy. Responses were categorized as inadequate (scores of 0-13), marginal (scores of 14-15), and adequate health literacy (scores of 16-17). This questionnaire has a Cronbach's alpha coefficient of 0.81.

Statistical analysis

Data analysis was carried out using Statistical Package Social Science (SPSS software version 25). Descriptive statistics were performed to summarize the demographic characteristics and levels of health literacy. A chi-square test was used to determine the association between demographic factors and the level of health literacy. Statistical significance was set at $p < 0.05$.

Results

According to demographic characteristics, the mean patient age was 34.54 ± 10.18 years. Out of all the patients, 79.2% had an education level of bachelor's degree or higher, 37.4% were Civil servants, and 11.8% were in private business. The majority of participants (62.5%) had 15,001-25,000 Thai baht monthly income. Medical expenses were paid using the civil servant medical benefit scheme in 35.5% of the cases and using the universal coverage scheme 23.2% of the cases. 45.8 % of participants had been diagnosed with HIV infection for more than 1 years but less than 5 years and 33% had been diagnosed for more than 5 years. Most of the participants (88.2%) had a CD4 count of more than 200 cells/cm^3, and more participants (70.4%) had a viral load of less than 20 copies/ml. Within the past 6 months, 99%, 98.5%, 99.5% of participants had no history of opportunistic infections (e.g., tuberculosis, pneumocystis carinii pneumonia, and cryptococcosis) (Table 1).

The overall HIV health literacy mean score of participants was 15.41, with an SD of 2.03. The majority (66%) had an adequate level of health literacy (Figure 1). After including all potential associations in the chi-square test (Table 1), the results show that the level of health literacy was statistically significantly associated with education, duration of HIV infection, CD4 count, viral load, and cryptococcosis ($p < 0.05$, $p < 0.05$, $p < 0.01$, $p < 0.01$ and $p < 0.05$, respectively) (Table 1).

Discussion

HIV health literacy refers to an individual's capacity to obtain, process, and understand information related to HIV and acquired immunodeficiency syndrome (AIDS). The level of education has an impact on health literacy by providing individuals with the knowledge, skills, and resources they need to navigate the complex world of healthcare, make informed decisions, and ultimately improve their overall health and well-being[10]. Moreover, education provides the foundation for understanding basic health concepts, such as medication taking, anatomy, and the functions of the human body. Individuals with higher levels of education tend to grasp these fundamental principles better, enabling them to comprehend health information more effectively.[11]

Table 1: Sociodemographic characteristics of study participants according to levels of health literacy and factors associated with health literacy.

Sociodemographic characteristics	Overall n = 203 (%)	Level of health literacy			*p*-value
		Indequate n (%)	Marginal n (%)	Adequate n (%)	
Age (years), Mean ± SD	34.54 ± 10.18				
Range	19-64				
Education					
Illiterate	2 (1)	1 (50)	-	1 (50)	
Primary school	3 (1.5)	2 (66.7)	1 (33.3)	-	
Junior high school	6 (3)	1 (16.7)	2 (33.3)	3 (50)	
Senior high school	20 (9.9)	2 (10)	5 (25)	13 (65)	0.017*
Diploma degree	11 (5.4)	1 (9.1)	3 (27.3)	7 (63.6)	
Bachelor's degree	106 (52.1)	17 (16)	26 (24.5)	63 (59.5)	
Graduate degree	55 (27.1)	2 (3.6)	6 (10.9)	47 (85.5)	
Occupation					
Civil servant	76 (37.4)	8 (10.5)	13 (17.1)	55 (71.4)	
Private business	24 (11.8)	2 (8.3)	6 (25)	16 (66.7)	
Office worker	22 (10.8)	3 (13.7)	7 (31.8)	12 (54.5)	
Unemployed	19 (9.4)	2 (10.5)	5 (26.3)	12 (63.2)	0.925
University Student	32 (15.8)	6 (18.8)	7 (21.8)	19 (59.4)	
State enterprise employee	6 (3)	-	1 (16.7)	5 (83.3)	
Other	24 (11.8)	5 (20.8)	4 (16.7)	15 (62.5)	
Income per month (THB)					
< 5,000	17 (8.5)	3 (17.6)	5 (29.5)	9 (52.9)	
5,000 - 10,000	34 (16.7)	4 (11.8)	10 (29.4)	20 (58.8)	
10,001 - 15,000	25 (12.3)	7 (28)	3 (12)	15 (60)	0.107
15,001 - 20,000	66 (32.5)	5 (7.6)	17 (25.8)	44 (66.6)	
20,001 - 25,000	61 (30)	7 (11.5)	8 (13.1)	46 (75.4)	
Medical scheme					
Civil servant medical benefit scheme	72 (35.5)	8 (11.1)	12 (16.7)	52 (72.2)	
Social security scheme	34 (16.7)	3 (8.8)	6 (17.6)	25 (73.6)	
Private insurance	1 (0.5)	1 (100)	-	-	0.133
Universal coverage scheme	47 (23.2)	10 (21.3)	11 (23.4)	26 (55.3)	
Personal	42 (20.7)	3 (7.1)	12 (28.6)	27 (64.3)	
Other	7 (3.4)	1 (14.3)	2 (28.6)	4 (57.1)	
Duration of HIV infection					
< 6 months	28 (13.8)	4 (14.3)	8 (28.6)	16 (57.1)	
6 months - 1 year	15 (7.4)	6 (40)	2 (13.3)	7 (46.7)	
> 1 year - 5 years	93 (45.8)	11 (11.8)	22 (23.7)	60 (64.5)	0.023*
> 5 years	67 (33)	5 (7.5)	11 (16.4)	51 (76.1)	
CD4 count (cell/cm^3)					
< 200	24 (11.8)	6 (25)	9 (37.5)	9 (37.5)	
200 - 499	79 (38.9)	13 (16.5)	15 (19)	51 (64.5)	0.009**
500 - 1,500	100 (49.3)	7 (7)	19 (19)	74 (74)	
Viral load (copy/ml)					
< 20	143 (70.4)	15 (10.5)	24 (16.8)	104 (72.7)	0.008**
≥ 20	60 (29.6)	11 (18.3)	19 (31.7)	30 (50)	
Tuberculosis					
- Yes	2 (1)	1 (50)	0	1 (50)	0.261
- No	201 (99)	25 (12.4)	43 (21.4)	133 (66.2)	
Pneumocystis carinii pneumonia					
Yes	3 (1.5)	1 (33.3)	1 (33.3)	1 (33.3)	0.426
No	200 (98.5)	25 (12.5)	42 (21)	133 (66.5)	
Cryptococcosis					
Yes	1 (0.5)	1 (100)	0	0	0.033*
No	202 (99.5)	25 (12.4)	43 (21.3)	134 (66.3)	

* Significant $p < 0.05$, ** Significant $p < 0.01$

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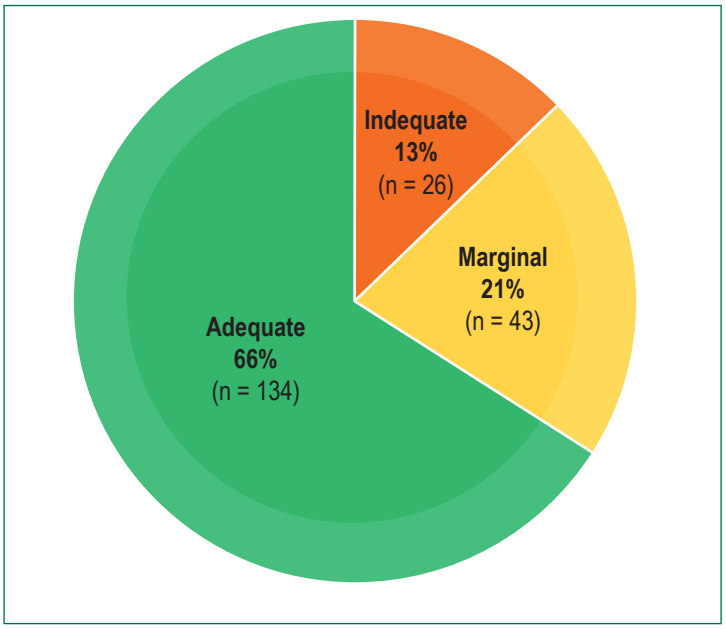


Figure 1: Overview level of health literacy

Adequate health literacy enhances critical thinking and problem-solving abilities, which are essential for assessing health-related information critically. Educated individuals are better equipped to evaluate the credibility of sources, identify misinformation, and make informed decisions about their health, including understanding how HIV is transmitted and prevented.[10,12] Adequate HIV health literacy must include a comprehensive understanding of CD4 counts and viral load, two critical markers in managing HIV. First, CD4 counts are a crucial measure of immune system health. A higher CD4 count indicates a higher immune system, which prevents opportunistic infection and is essential for overall well-being. MSM with robust health literacy understand the significance of regular CD4 count monitoring and how it informs decisions about when to start or adjust antiretroviral therapy (ART).[6] This knowledge empowers them to engage with healthcare providers actively, adhere to treatment regimens, and make informed choices about their healthcare.

Second, viral load measures the amount of HIV in a person's bloodstream. Lower viral loads are associated with adequate health outcomes and reduced transmission risk.[13] MSM with a strong understanding of viral load know that achieving and maintaining an undetectable viral load through consistent ART adherence not only benefits their personal health but also significantly reduces the risk of transmitting the virus to sexual partners.[14-16] This knowledge fosters a sense of responsibility and encourages safer sexual practices, contributing to a collective effort to curb HIV transmission within the MSM community.

Lastly, CD4 counts and viral load are essential to combating HIV-related stigma and discrimination.[17] When MSM living with HIV are knowledgeable about these markers, they can explain their significance to others, dispel myths, and challenge misconceptions. This educational advocacy is pivotal in reducing stigma, fostering a more inclusive environment, and empowering individuals to live openly and confidently with their HIV status.

Conclusion

Most HIV health literacy among MSM have adequate health literacy. The level of health literacy was associated with education and, the duration of HIV infection. An in-depth understanding of CD4 counts and viral load is integral to HIV health literacy among MSM, promoting better health, reducing transmission risk, and contributing to a more empathetic and supportive society.

Conflict of interest

The authors declare no conflict of interest.

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