Original Article

Understanding Health Literacy among Bisexual Men Living with HIV: A Preliminary study

Sitthiphon Bunman[1] ; Prakasit Wannapaschaiyong[2] ; Aphicha Nomsiri[1] ; Anan Malarat[3] ; Sonthaya Saiyasalee[4]

Sitthiphon Bunman

[1] Department of Community and Family Medicine, Faculty of Medicine, Thammasat University, Pathumthani, Thailand.
[2] Department of Pediatrics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand.
[3] Faculty of Physical Education, Srinakharinwirot University, Bangkok, Thailand.
[4] Faculty of science and health technology, Kalasin University, Kalasin, Thailand.

*Address Correspondence to author:
Sitthiphon Bunman, PhD
Faculty of Medicine, Thammasat University,
Pathumthani 12121, Thailand.
email: Acetaminophen55@gmail.com

Received: January 16, 2023
Revision received: February 7, 2023
Accepted after revision: February 14, 2023
BKK Med J 2023;19(1): 35-38.
DOI: 10.31524/bkkmedj.2023.11.006
www.bangkokmedjournal.com

Abstract

OBJECTIVES: This preliminary study aims to evaluate health literacy among bisexual men living with HIV.

MATERIALS AND METHODS: A cross-sectional survey was conducted among 26 adult bisexual male HIV-infected patients in the HIV Clinic from October 2021 to May 2022. We applied the Thai version of the HIV-HLT to investigate health literacy among bisexual men living with HIV.

RESULTS: The average age of the participants was 41.34 ± 12.41 years. 61.5% were single and 34.6% had divorced marital status. 50% had finished their bachelor degrees. Approximately half of the participants had been diagnosed with HIV infection for more than 5 years. 57.7% had adequate HIV health literacy and 26.9% had inadequate HIV health literacy, respectively. The laboratory outcome showed that 96.2% had a CD4 count of more than 200 cells/cm^3 and 76.9% had a viral load of less than 20 copies/ml. CD4 and viral load were not associated with the level of health literacy. However, all participants had no previous history of opportunistic infections within the past 6 months.

CONCLUSION: Most bisexual men living with HIV have adequate health literacy. The level of health literacy is not associated with CD4 and viral load. However, opportunistic infections within the past 6 months are not reported. Therefore, a Thai version of HIV-HLT may be applied to measure health literacy among bisexual men living with HIV and could be a potential for clinical use.

Keywords: Health Literacy, HIV Health Literacy, HIV, Bisexual

Health literacy is the importance of literacy as a determinant of health and illness behavior among people living with HIV (PLHIV).[1, 2] Although definitions vary, health literacy is commonly interpreted as the ability to access, comprehend, evaluate, and apply health-related information.[3] Low health literacy is linked to a poorer understanding of HIV and its treatment, less medication adherence, clinical outcomes like higher viral loads[4-6], and more hospitalizations.[2] Health literacy is essential for health practitioners to understand their patient's health literacy, especially when offering individualized counseling for PLHIV.[7] Most studies on health literacy among PLHIV have been done in the United States, Europe, and a few African countries.[8] Few studies have been done on the health literacy of people living with HIV in Southeast Asian countries like Thailand and Indonesia.[9]

However, general health literacy contributes to understanding treatment adherence and improved health outcomes among HIV patients.[10] Much research in this field has focused on the individual level and/or young people. Few studies have begun to study health literacy disparities among gay, bisexual, and other men who have sex with men.[11-13] This preliminary study aims to evaluate health literacy among bisexual men living with HIV.

Materials and Methods

A cross-sectional survey was conducted among HIV-infected bisexual male patients in the HIV Clinic, Thammasat University Hospital, Pathumthani,

Thailand, from October 2021 to May 2022 to investigate health literacy in these patients. The study protocol was approved by the Human Research Ethics Committee of the Faculty of Medicine, Thammasat University (MTU-EC-IM-0-250/64).

Study population and procedures

We recruited 26 bisexual men from 530 adults with HIV who met the following criteria:

1. Sexually attracted to both men and women
2. 18 to 64 years of age
3. Fluent in the Thai language
4. Able to provide informed consent.

Patients with any psychiatric disorder, cognitive impairment, or memory impairment were excluded.

Members of the medical teams at the HIV clinic approached treatment-seeking patients and explained the purpose and objective of the study. The patients who volunteered in this study agreed to sign an informed consent and completed an anonymous internet-based survey that included demographic data and an HIV-health literacy test.

Measurements

Demographic items

Twelve demographic items (e.g., age, gender, sexual orientation) were included in the qualitative assessment. Laboratory outcomes such as CD4 count, viral load, and opportunistic infections were investigated.

The Thai version of the HIV health literacy test (HIV-HLT)

The Thai version of the HIV-HLT was applied to measure the levels of HIV health literacy. The self-report questionnaire consisted of 17 items evaluating HIV knowledge and adherence to ART. The possible total score was between 0-17 and was classified into 3 levels: less than 13 as inadequate, 14-15 as marginal, and 16-17 as adequate health literacy. The Cronbach's alpha for this questionnaire was 0.81.

Statistical analysis

Descriptive statistics were used to describe the percentage, frequencies, and means ± SD. A chi-square test was used to analyze the association between the level of health literacy and laboratory outcome. The variables with an observed association of p-value < 0.05 were noted and considered significant. All statistical analyses were performed using the software program SPSS version 25.

Results

As shown in Table 1, the average age of the participants was 41.34 ± 12.41 years. 61.5% had single, and 34.6% had divorced marital status. 50% had finished their bachelor degrees, and 26.9% had higher than bachelor degrees. Among the subjects, 37.4% were government officials. More than half of the participants (57.7%) had a 15,001-25,000 Thai baht monthly income. For rights to treatment, 42.3% had a civil servant medical benefit scheme, and 23.1% had social security scheme. Approximately half of the participants (50%) had been diagnosed with HIV infection for more than 5 years.

Regarding HIV health literacy level, the majority of the subjects (57.7%) had adequate HIV health literacy (Figure 1). Laboratory outcome showed that 96.2% had a CD4 count of more than 200 cells/cm^3, and 76.9% had a viral load of less than 20 copies/ml. The CD4 count of greater than 200 cells/cm^3 and viral load of less than 20 copies/ml were not associated with the level of health literacy (Table 2). However, subjects had no previous history of opportunistic infections, such as tuberculosis (TB), pneumocystis carinii pneumonia (PCP), and cryptococcosis, within the past 6 months (Table 3).

Discussion

The study investigated bisexual men with HIV patients, consisting of 17 items measuring health literacy. The instrument was reliable and valid. There were three levels of HIV health literacy: inadequate, marginal, and adequate. The study demonstrated that most bisexual men had adequate HIV health literacy, low viral load, and high CD4. All participants had no previous history of opportunistic infections, such as TB, PCP, and cryptococcosis within the past 6 months; this may be due to the level of health literacy.

In previous studies, general health literacy instruments measured an individual's ability to understand general health information and medication adherence.[14-16] These existing assessments, such as the Test of Functional Health Literacy in Adults (TOFHLA)[17] and the Rapid Estimate of Adult Literacy in Medicine (REALM), assess patients' general information, such as reading skills or health vocabulary. The questionnaires are unrelated to the patient's current diagnosis, such as applying general health information, locating information from various health materials, or pronouncing basic health terms for overall self-management.[18]

The Thai version of HIV-HLT was also applied for clinical use and is specific to HIV patients. The instrument had two domains. The first domain, the HIV knowledge domain, measures a patient's ability to understand HIV information, access health care services, and understand routine laboratory results, such as T-lymphocyte cell count (CD4) or VL. The second domain measures the application of the information to health decision-making.[19] Most studies demonstrated that domains on HIV knowledge and medication adherence have a high potential for clinical use.[18, 20] However, the instruments had two limitations. Firstly, self-reporting was used to measure medication adherence, and patients may under-report missed doses.[18] Secondly, 26 bisexual men were recruited from only one clinical setting, so the findings' capacity to generalize to different contexts might be limited. Further investigation into a larger population should be explored.

ISSN 2287-0237 (online)/ 2228-9674 (print)

Table 1: Sociodemographic data of HIV-infected participating patients attending the HIV Clinic.

Sociodemographic data	Total participants (%)	Level of health literacy		
		Indequate n (%)	Marginal n (%)	Adequate n (%)
Overview of HIV health literacy level	26	7 (26.9)	4 (15.4)	15 (57.7)
Age (years), Mean ± SD	41.34±12.41			
Range	22 - 64			
- 20-29	5 (19.2)	3 (60)	-	2 (40)
- 30-39	7 (26.9)	1 (14.3)	-	6 (85.7)
- 40-49	8 (30.8)	3 (37.5)	1 (12.5)	4 (50)
- 50-59	4 (15.4)	-	2 (50)	2 (50)
- > 60	2 (7.7)	-	1 (50)	1 (50)
Marital status				
- Single	16 (61.5)	5 (31.2)	3 (18.8)	8 (50)
- Couple	1 (3.9)	-	-	1 (100)
- Divorced	9 (34.6)	2 (22.2)	1 (11.1)	6 (66.7)
Education				
- Junior high school	2 (7.7)	-	-	2 (100)
- Senior high school	3 (11.5)	1 (33.3)	-	2 (66.7)
- Diploma degree	1 (3.8)	-	1 (100)	-
- Bachelor degree	13 (50)	5 (38.4)	2 (15.4)	6 (46.2)
- Graduate degree	7 (26.9)	1 (14.3)	1 (14.3)	5 (71.4)
Occupation				
- Government service	9 (34.7)	3 (33.3)	1 (11.1)	5 (56.6)
- Student	3 (11.5)	2 (66.7)	-	1 (33.3)
- Private business	2 (7.7)	-	-	2 (100)
- Officer	2 (7.7)	1 (50)	-	1 (50)
- Employee	2 (7.7)	-	-	2 (100)
- Unemployed Employee	2 (7.7)	-	-	2 (100)
- Agriculturist	1 (3.8)	-	-	1 (100)
- State enterprise employee	1 (3.8)	-	1 (100)	-
- Other	4 (15.4)	1 (25)	2 (50)	1 (25)
Income per month (THB)				
- < 5,000	3 (11.5)	1 (33.3)	-	2 (66.7)
- 5,000-10,000	2 (7.7)	-	-	2 (100)
- 10,001-15,000	6 (23.1)	-	1 (16.7)	5 (83.3)
- 15,001-20,000	9 (34.6)	2 (22.2)	1 (11.1)	6 (66.7)
- 20,001-25,000	6 (23.1)	4 (66.7)	2 (33.3)	-
Medical scheme				
- Civil servant medical benefit scheme	11 (42.3)	3 (27.3)	2 (18.2)	6 (54.5)
- Social security scheme	6 (23.1)	1 (16.7)	1 (16.7)	4 (66.6)
- Universal coverage scheme	7 (26.9)	3 (42.9)	-	4 (57.1)
- Personal	2 (7.7)	-	1 (50)	1 (50)
Duration of HIV infection				
- < 6 months	3 (11.5)	1 (33.33)	1 (33.33)	1 (33.33)
- 6 months - 1 year	2 (7.7)	2 (100)	-	-
- > 1 year - 5 years	8 (30.8)	3 (37.5)	1 (12.5)	4 (50)
- > 5 years	13 (50)	1 (7.7)	2 (15.4)	10 (76.9)

Table 2: Association between the level of health literacy and laboratory outcome

Laboratory outcome	Total participants (%)	Level of health literacy			*p*-value
		Indequate n (%)	Marginal n (%)	Adequate n (%)	
CD4 count (cell/cm3)					
- <200	1 (3.8)	-	1 (100)	-	
- 200 - 499	15 (57.7)	4 (26.7)	2 (13.3)	9 (60)	0.21
- 500 - 1,500	10 (38.5)	3 (30)	1 (10)	6 (60)	
Viral load (copy/ml)					
- <20	20 (76.9)	4 (20)	3 (15)	13 (65)	0.30
- ≥20	6 (23.1)	3 (50)	1 (16.7)	2 (33.3)	

Table 3: The result of the level of health literacy and opportunistic infections outcome

Opportunistic infections	Total participants (n)	Level of health literacy		
		Indequate n (%)	Marginal n (%)	Adequate n (%)
Tuberculosis				
- No	26 (100)	7 (26.9)	4 (15.4)	15 (57.7)
Pneumocystis carinii pneumonia				
- No	26 (100)	7 (26.9)	4 (15.4)	15 (57.7)
Cryptococcosis				
- No	26 (100)	7 (26.9)	(4 (15.4)	15 (57.7)

Conclusion

The preliminary findings demonstrated that for most bisexual men living with HIV health literacy among was adequate. The level of health literacy of bisexual men is not associated with CD4 and VL. However, opportunistic infections within the past 6 months were not reported. Therefore, a Thai version of HIV-HLT may be applied to evaluate health literacy among bisexuals living with HIV and are important for clinical use.

References

1. Gazmararian JA, Williams MV, Peel J, et al. Health literacy and knowledge of chronic disease. *Patient Educ Couns* 2003;51(3):267-75. doi: 10.1016/s0738-3991(02)00239-2.
2. Palumbo R. Discussing the Effects of Poor Health Literacy on Patients Facing HIV: A Narrative Literature Review. *Int J Health Policy Manag* 2015;4(7):417-30. doi: 10.15171/ijhpm.2015.95.
3. Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: a systematic review and integration of definitions and models. *BMC public health* 2012;12(1):1-13. doi: 10.1186/1471-2458-12-80.
4. Kalichman SC, Cherry C, Kalichman MO, et al. Randomized clinical trial of HIV treatment adherence counseling interventions for people living with HIV and limited health literacy. *J Acquir Immune Defic Syndr* 2013;63(1):42-50. doi: 10.1097/QAI.0b013e318286ce49.
5. Waldrop-Valverde D, Jones DL, Jayaweera D, et al. Gender differences in medication management capacity in HIV infection: the role of health literacy and numeracy. *AIDS and Behavior* 2009;13(1):46-52. doi: 10.1007/s10461-008-9425-x.
6. Zukoski AP, Thorburn S, Stroud J. Seeking information about HIV/AIDS: a qualitative study of health literacy among people living with HIV/AIDS in a low prevalence context. *AIDS Care* 2011;23(11):1505-8. doi: 10.1080/09540121.2011.582077.
7. Davis TC, Wolf MS, Bass PF, et al. Literacy and misunderstanding prescription drug labels. *Ann Intern Med* 2006;145(12):887-94. doi: 10.7326/0003-4819-145-12-200612190-00144.
8. Wawrzyniak AJ, Ownby RL, McCoy K, et al. Health literacy: impact on the health of HIV-infected individuals. *Curr HIV/AIDS Rep* 2013;10(4):295-304. doi: 10.1007/s11904-013-0178-4.
9. Rajah R, Hassali MAA, Murugiah MK. A systematic review of the prevalence of limited health literacy in Southeast Asian countries. *Public Health* 2019;167:8-15. doi: 10.1016/j.puhe.2018.09.028.
10. Reynolds R, Smoller S, Allen A, et al. Health Literacy and Health Outcomes in Persons Living with HIV Disease: A Systematic Review. *AIDS Behav* 2019;23(11):3024-43. doi: 10.1007/s10461-019-02432-9.
11. Brookfield S, Dean J, Forrest C, et al. Barriers to Accessing Sexual Health Services for Transgender and Male Sex Workers: A Systematic Qualitative Meta-summary. *AIDS Behav* 2020;24(3):682-96. doi: 10.1007/s10461-019-02453-4.
12. Gilbert M, Michelow W, Dulai J, et al. Provision of online HIV-related information to gay, bisexual and other men who have sex with men: a health literacy-informed critical appraisal of Canadian agency websites. *Sex Health* 2019;16(1):39-46. doi: 10.1071/SH18092.
13. Oliffe JL, McCreary DR, Black N, et al. Canadian Men's Health Literacy: A Nationally Representative Study. *Health Promot Pract* 2020;21(6):993-1003. doi: 10.1177/1524839919837625.
14. Kalichman SC, Cherry J, Cain D. Nurse-delivered antiretroviral treatment adherence intervention for people with low literacy skills and living with HIV/AIDS. *J Assoc Nurses AIDS Care* 2005;16(5):3-15. doi: 10.1016/j.jana.2005.07.001.
15. Osborn CY, Paasche-Orlow MK, Davis TC, et al. Health literacy: an overlooked factor in understanding HIV health disparities. *Am J Prev Med* 2007;33(5):374-8. doi: 10.1016/j.amepre.2007.07.022.
16. Wolf MS, Davis TC, Osborn CY, et al. Literacy, self-efficacy, and HIV medication adherence. *Patient Educ Couns* 2007;65(2):253-60. doi: 10.1016/j.pec.2006.08.006.
17. Baker DW, Williams MV, Parker RM, et al. Development of a brief test to measure functional health literacy. *Patient Educ Couns* 1999;38(1):33-42. doi: 10.1016/s0738-3991(98)00116-5.
18. Osborn CY, Davis TC, Bailey SC, et al. Health literacy in the context of HIV treatment: introducing the Brief Estimate of Health Knowledge and Action (BEHKA)-HIV version. *AIDS Behav* 2010;14(1):181-8. doi: 10.1007/s10461-008-9484-z.
19. Bunman S, Khawcharoenporn T, Malarat A, Vatcharavongvan P. THAI VERSION OF HIV HEALTH LITERACY TEST FOR PEOPLE WITH HIV. *SEATROPH* 2022:51(4):498-506.
20. Tique JA, Howard LM, Gaveta S, et al. Measuring Health Literacy Among Adults with HIV Infection in Mozambique: Development and Validation of the HIV Literacy Test. *AIDS Behav* 2017;21(3):822-32. doi: 10.1007/s10461-016-1348-3.