BMJ Open

Avoidance of healthcare service use and correlates among HIV-positive patients in Vietnam: a cross-sectional study

Huong Lan Thi Nguyen ,[1,2] Thu Minh Bui,[3,4] Vu Anh Trong Dam,[1,2] Tham Thi Nguyen,[1,2] Hien Thu Nguyen,[1,2] Ga Mei Zeng,[5] Don Bradley,[5] Quang N Nguyen,[1,6] Toan Van Ngo,[3] Carl A Latkin,[7] Roger CM Ho ,[8,9] Cyrus SH Ho[8]

To cite: Nguyen HLT, Bui TM, Dam VAT, *et al*. Avoidance of healthcare service use and correlates among HIV-positive patients in Vietnam: a cross-sectional study. *BMJ Open* 2023;**13**:e074005. doi:10.1136/bmjopen-2023-074005

► Prepublication history for this paper is available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2023-074005).

Received 24 March 2023
Accepted 19 December 2023

For numbered affiliations see end of article.

Correspondence to
Huong Lan Thi Nguyen; nguyentlanhuong5@duytan.edu.vn

ABSTRACT

Objective The prevention of HIV/AIDS is not making sufficient progress. The slow reduction of HIV/AIDS infections needs to prioritise hesitancy towards service utilisation, including treatment duration, social support and social stigma. This study investigates HIV-positive patients' avoidance of healthcare services and its correlates.

Design A cross-sectional study.

Setting The secondary data analysis used cross-sectional data from a randomised controlled intervention, examining the effectiveness of HIV-assisted smartphone applications in the treatment of HIV/AIDS patients in the Bach Mai and Ha Dong clinics in Hanoi.

Methods Simple random sampling was used to identify 495 eligible patients. Two-tailed χ^2, Mann-Whitney, multivariate logistic and ordered logistic regression models were performed.

Primary and secondary outcome measures The main study outcome was the patients' healthcare avoidance and frequency of healthcare avoidance. The association of individual characteristics, social and behavioural determinants of HIV patients' usage of health services was also determined based on the collected data using structured questionnaires.

Results Nearly half of the participants avoid health service use (47.3%), while 30.7% rarely avoid health service use. Duration of antiretroviral therapy and initial CD4 cell count were negatively associated with avoidance of health services and frequency of health service avoidance. Similarly, those with the middle and highest income were more likely to avoid health services compared with those with the lowest income. People having health problems avoided health service use more frequently (OR 1.47, 95% CI 1.35 to 1.61).

Conclusions Our study's findings identify characteristics of significance in relation to health service avoidance and utilisation among HIV-positive patients. The results highlighted the need to improve satisfaction, adherence and utilisation of treatment. Moreover, identifying ways to address or incorporate those social determinants in new policy may also help the treatment of HIV/AIDS and strategically allocate funding in the changing financial and political climate of Vietnam.

Trial registration number Thai Clinical Trials Registry TCTR20220928003.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This study used a standardised scale in Vietnam to assess the related factors of health service avoidance. This ensured that the data collected were relevant and appropriate for the context in which the study was conducted.
⇒ This study adopts a multifaceted approach to comprehensively gauge the phenomenon of health service avoidance among HIV patients within the Vietnamese context.
⇒ In respect of the confidentiality of HIV diagnosis and medical records, we were not able to preidentify the survey sample.
⇒ The sample of participants was identified using convenience sampling, both clinics sampled were from Hanoi, which may reduce the representativeness of our findings.

INTRODUCTION

For decades, HIV/AIDS has remained one of the most pressing unresolved public health crises worldwide. The latest WHO reports in 2020 recorded 37.7 million people living with HIV/AIDS and approximately 680 000 fatalities due to HIV/AIDS globally.[1] In Vietnam, around 250 000 adults and children were diagnosed with HIV/AIDS in 2020.[2] In recent years, Vietnam has implemented extensive promotion of antiretroviral therapy (ART) access and improved adherence to ART treatment plans among diagnosed patients, most notably through collaboration with the US Agency for International Development towards the universal '90-90-90' goal.[3] In 2013, the Centers for Disease Control and Prevention (CDC) extended the collaboration with the Vietnam Ministry of Health Administration for HIV/AIDS Control for 5 more years of resource utilisation from the US President's Emergency Plan for AIDS Relief to prevent and treat HIV/AIDS in Vietnam.[4]

Contrary to milestones in treatment, HIV/AIDS prevention has not been making as favourable progress. Compared with data acquired in 2018, the prevalent rate of HIV/AIDS among adults below 49 years old has stayed the same at 0.3 in both years.[5] This stagnancy has been attributed to poor service delivery and distribution as well as low health literacy and fear of social stigma. For instance, a review of community outreach programmes targeting high-risk populations demonstrated that industrial workers had more knowledge of HIV treatments than the general population but still had a low perception of HIV risks due to scattered and unofficial information.[6] In Vietnam, people who lived with HIV/AIDS are constantly stigmatised for having several or same-sex partners, using illicit drugs and are frequently the victims of public hate crimes or denial of care.[7 8] As a result, one of the most frequent emphases across papers has been on developing interventions on a general population scale instead of solely focusing on vulnerable communities as well as constantly assessing, and adapting the current health system to changes in the socioeconomic status of the country.[9]

Current control schemes in Vietnam have been focusing largely on improving HIV literacy among the general population. However, the common approach adopted by most campaigns was the devitalisation of HIV/AIDS infection to scare people away from risky behaviours, which inadvertently resulted in heightened social stigma toward HIV patients.[10] As stages of HIV/AIDS intervention are closely interlinked, understanding drivers of hesitancy towards HIV treatment is vital not only to resolve avoidance but also to systemise our HIV/AIDS control approach, including education, prevention and treatment, as a whole. While there has been research on behavioural and social determinants of HIV/AIDS prevention, diagnosis and treatment, little to no study was conducted on patients already diagnosed with HIV/AIDS and not yet receiving care.[10] Previous studies have either (1) looked at treatment adherence instead of healthcare service avoidance or (2) focused on less extensive parameters such as ART access, adherence and outcome treatments (quality of life and current CD4 cell count).[11–14] In Vietnam, there is a scarcity of research on the multidimensional predictors of care-seeking behaviour, especially avoidance of HIV healthcare utilisation among HIV-positive patients. This gap in data has resulted in an incomprehensive approach to care delivery. Therefore, this study investigated health service utilisation and avoidance among patients visiting two outpatient clinics in Hanoi. Social and behavioural determinants of HIV patients' usage of health services identified in this study provide a full picture of HIV/AIDS service access and valuable insights for comprehensive HIV prevention measures.[13 15]

METHODS

Study design, sampling method and data collection

This secondary data analysis uses data from a randomised controlled intervention conducted in two outpatient clinics: Ha Dong Clinic (provincial level) and Bach Mai Clinic (central level) from March 2018 to December 2019. The government financially supports the Bach Mai HIV Outpatient Clinic, which is a central-special hospital in Hanoi, to deliver ART to approximately 3000 HIV-positive patients. Additionally, the HIV Clinic at Ha Dong General Hospital, a provincial-level healthcare facility, offers insurance-covered testing and treatment services along with complimentary counselling.

This study served as a baseline survey for a randomised controlled intervention, investigating the efficacy of mHealth in the treatment of HIV/AIDS patients.[16 17] Inclusion criteria for participants were (1) had a confirmed HIV/AIDS diagnosis; (2) received antiretroviral treatment (ART) at chosen clinics; (3) used a smartphone during the study period and (4) provided informed consent to participate. Data from participants were gathered through face-to-face interviews. No identifiable information was collected. Participants were interviewed in private rooms to limit errors like the influence of surroundings and to ensure their privacy.

Because HIV-related information is confidential, it was not feasible to develop a sample frame. Therefore, we selected patients conveniently, including those who were present at the clinics during the study period until reaching at required sample size. In adherence to ethical research protocols, the inclusion of participants in this study was contingent on their voluntary commitment, signified by the formal endorsement of a written informed consent document. After the data acquisition phase, invitations to participate were extended to a total of 500 individuals. Remarkably, a robust response was observed, with 495 individuals offering comprehensive and substantive contributions to the research endeavour, thus yielding an impressive response rate of 99.0%.

Instruments

The structured questionnaires encompassed inquiries within four key domains: (1) HIV patient characteristics; (2) health behaviour; (3) quality of life (assessed using EuroQol-5 Dimensions-5 Levels (EQ-5D-5L)) and (4) health service utilisation and avoidance. Prior to the data collection phase, this questionnaire underwent a pilot testing phase involving a group of HIV patients to rectify any textual or logical issues within the questions and to clarify any ambiguities. During the data collection process, on obtaining informed written consent from the participants, face-to-face interviews, lasting approximately 15–20 min, were conducted in a private setting to ensure confidentiality and minimise external influences. Trained clinic staff members facilitated the administration of the questionnaires.

HIV patients characteristics

Participants provided their demographic information such as their age, gender (male, female), relationship status (single, separate/divorce/widow, having spouse/partner), level of education (elementary school or less,

secondary school, high school, above high school), employment (unemployed, white-collar worker, blue-collar worker/farmer, self-employed, others) and monthly family income (thousand Dong). In terms of monthly household income, we divided it into five groups including poorest, poor, middle, high and highest.

From medical records, clinical parameters such as HIV stage, ART duration and CD4 cell information were collected. Patients were asked to report the last time they forgot to take their medication. Health status and adherence score were self-reported.

We used the EQ-5D-5L scale to evaluate the health-related quality of life of participants. EQ-5D-5L assessed five aspects: mobility, self-care, usual activities, pain/discomfort and anxiety/depression, each aspect was a 5-Likert score. This led to 3125 possible health states from 1111 (worst health) to 55 555 (full health).[18] One single 'utility' score was determined for each health state, which can be transformed by using the interim scoring for EQ-5D-5L. We used the Vietnamese version that has been validated and is in use, with scores ranging from −0.5115 to 1.[19] Participants with higher scores indicated a higher quality of life.

Health behaviours

We examined alcohol use, smoking history, drug use and history of drug use of participants.

Self-stigma

We used two yes/no questions to measure the self-stigma of HIV patients including: (1) Do you feel melancholy related to self-perceived shortcomings or the belief that one has let down one's family? and (2) Do you occasions arise when I contemplate a preference for self-harm or even harbouring thoughts of self-destruction?

Health service utilisation and avoidance

Participants were asked about inpatient or outpatient service usage and whether they avoided using these health services during the last 12 months as well as the frequency of avoidance (none/rarely/sometimes/often/always).

Data analysis

This study used STATA V.17 to analyse the data. We employed two-tailed χ^2 and Mann-Whitney tests to assess differences between individuals with and without healthcare avoidance. 'xtile' function in STATA was used to divide monthly household income to five groups: poorest, poor, middle, high and highest.

Individual characteristics (age, gender, marital status, education, job and household monthly income), behaviours (hazardous drinking, smoking last 30 days and history of drug use), clinical characteristics (health problems, HIV stage, initial and last CD4 cell counts, duration of ART, adherence, time of inpatient and outpatient service use), quality of life and self-stigma were considered potential covariates for the full models of health service avoidance. Random-effects logistic model was used to identify factors related to healthcare avoidance (yes/no). Meanwhile, we used random-effects ordered logistic model to identify factors associated with the frequency of healthcare avoidance (none/rarely/sometimes/often/always). Values of $p<0.05$ were considered statistical significance.

Patient and public involvement

Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research.

RESULTS

Among 495 patients, no difference was found between those with/without health service avoidance regarding socioeconomic characteristics except education groups and monthly household income ($p<0.05$) (table 1). There were 57.0% female participants, 50.3% participants within 30–39 years old, 69.1% had a spouse/partner and 34.1% received a high school education. The average monthly income was 5361 (SD=7358).

There were nearly half of the participants avoided health service use (47.3%), while 30.7% rarely avoided health service use. In the last 12 months, 6.3% of participants were inpatient and 15.6% received both inpatient and outpatient services. (table 2).

Table 3 demonstrates that patients with history of drug use were less likely to avoid services (16.7% compared with 29.1%). Moreover, patients who avoided health service were likely to have a higher number of last CD4 cell count (529.4 cell/µL compared with 529.3 cell/µL) and lower duration of ART (5.5 times/year compared with 6.7 times/year). The statistically significant difference between groups history of drug, last CD4 cell count and duration of ART with $p<0.01$.

Table 4 shows the results of the multilevel regression models. Participants who had spouse/partner tended to lower health service avoidance frequency than those who were single (OR 0.91; 95% CI 0.86 to 0.96). Compared with unemployed people, white-collar workers (OR 1.62; 95% CI 1.33 to 1.97) and others job (OR 1.40; 95% CI 1.21 to 1.63) were more likely to avoid health services. Similarly, those with the middle (OR 1.44; 95% CI 1.08 to 1.94) and highest income (OR 1.43; 95% CI 1.38 to 1.49) were more likely to avoid health services compared with those with the lowest income. Having any health problems (OR 1.47; 95% CI 1.35 to 1.61), symptomatic HIV infection (OR 1.19; 95% CI 1.07 to 1.34) and higher times of inpatient service use (OR 1.12; 95% CI 1.08 to 1.17) were positively associated with health services avoidance frequency. By contrast, higher initial CD4 cell counts were negatively related to any avoidance of health services (OR 0.9990; 95% CI 0.9981 to 0.9999) and higher frequency of health service avoidance (OR 0.9993; 95% CI 0.9992 to 0.9993). In terms of self-sigma, 'feeling melancholy related to self-perceived shortcomings or the belief that one has let down one's family' was a positive factor that

Table 1 Sociodemographic characteristics

Characteristics	Any avoidance of health service						P value
	No		Yes		Total		
	n	%	n	%	n	%	
Location							
Bach Mai	215	82.4	184	78.6	399	80.6	0.29
Ha Dong	46	17.6	50	21.4	96	19.4	
Gender							
Male	152	58.2	130	55.6	282	57.0	0.55
Female	109	41.8	104	44.4	213	43.0	
Age group							
19–29	20	7.7	34	14.5	54	10.9	0.06
30–39	130	49.8	119	50.9	249	50.3	
40–49	99	37.9	73	31.2	172	34.8	
50 or above	12	4.6	8	3.4	20	4.0	
Marital status							
Single	36	13.8	48	20.5	84	17.0	0.14
Separate/divorce/widow	37	14.2	32	13.7	69	13.9	
Having spouse/partner	188	72.0	154	65.8	342	69.1	
Education							
Elementary school or less	30	11.5	18	7.7	48	9.7	0.046
Secondary school	87	33.3	65	27.8	152	30.7	
High school	90	34.5	79	33.8	169	34.1	
Above high school	54	20.7	72	30.8	126	25.5	
Job							
Unemployed	14	5.4	13	5.6	27	5.5	0.70
White-collar workers	21	8.1	24	10.3	45	9.1	
Blue-collar workers/farmers	54	20.7	40	17.1	94	19.0	
Self-employed	20	7.7	14	6.0	34	6.9	
Others	152	58.2	143	61.1	295	59.6	
Monthly household income							
Poorest	87	33.3	70	44.6	157	31.7	0.006
Poor	46	17.6	20	8.6	66	13.3	
Middle	55	21.1	55	23.5	110	22.2	
High	40	15.3	38	16.2	78	15.8	
Highest	33	12.6	51	21.8	84	17.0	
	Mean	SD	Mean	SD	Mean	SD	P value
Age	38.5	6.4	36.9	6.8	37.8	6.6	0.73
Monthly household income (thousand dong)	5062.5	7516.0	5694.0	7179.4	5361.0	7358.1	0.21

increased the frequency of health service avoidance (OR 1.29; 95% CI 1.14 to 1.47).

DISCUSSION

Our results highlighted areas for policy improvements, including socioeconomic status, clinical characteristics, behaviours and health service utilisation and avoidance.

Education and monthly household income were two factors associated with a difference in health service avoidance. Participants with an education level of high school or lower tended to avoid services. Indeed, higher education has been significantly associated with reduced stigma, of all forms, against individuals with an HIV diagnosis.[20] Determining reasons for higher levels of avoidance compared with non-avoidance for higher levels

Table 2 Healthcare service use and avoidance

Characteristics	n	%
Health service use		
Inpatient service use in the last 12 months	31	6.3
Outpatient service use in the last 12 months	77	15.6
Using any health service in the last 12 months	98	19.8
Any avoidance of health service use	234	47.3
Frequency of health service avoidance		
None	261	52.7
Rarely	152	30.7
Sometimes	26	5.3
Often	28	5.7
Always	28	5.7
	Mean	**SD**
Times of inpatient service use in the last 12 months	0.1	0.8
Times of outpatient service use in the last 12 months	0.4	1.5
Times of any health service use in the last 12 months	0.5	1.8

of education provides a different avenue to explore or address, such as through educational curricular changes. Moreover, the influence of monthly household income on health service avoidance in HIV patients can be attributed to its role as a determinant of socioeconomic status and accessibility to healthcare resources. Higher monthly household income is often associated with enhanced financial capabilities, thus facilitating greater access to a spectrum of healthcare services. Conversely, lower income levels may give rise to financial constraints, resulting in diminished utilisation of healthcare services. Within the specific context of HIV patients, these financial considerations can substantially influence their ability to avail themselves of vital medical care, procure prescribed medications and participate in routine medical assessments, thereby contributing to variations in their healthcare service avoidance behaviours. Our findings align with prior research conducted in both developed and developing countries, including instances such as Australia and Cameroon, where budgetary constraints have been identified as a hindrance to healthcare-seeking behaviours.[21 22] A study conducted in Vietnam indicated that there were 73.3% of participants reported that they were able and willing to pay for HIV treatment expenditures, unlike the low individual willingness to pay rate recorded in other regions.[23 24] Sufficient financial capacity among Vietnamese suggests that avoidance of healthcare utilisation is primarily rooted in social and behavioural determinants.

The relationships between lower duration of ART and higher CD4 counts with increased health service avoidance indicated a need to focus on each metric individually. Those with lower durations of ART may either recently contract HIV or receive delayed diagnoses. Newly

Table 3 Clinical, health and behaviour characteristics

	Any avoidance of health service						
	No		Yes		Total		
Characteristics	n	%	n	%	n	%	P value
HIV stage							
Asymptomatic	243	95.7	222	95.3	465	95.5	0.84
Symptomatic	11	4.3	11	4.7	22	4.5	
Having any health problems	70	26.8	68	29.1	138	27.9	0.58
Hazardous drinking	66	25.3	56	23.9	122	24.7	0.73
Smoke last 30 days	88	33.7	73	31.2	161	32.5	0.55
History of drug use	76	29.1	39	16.7	115	23.2	<0.01
Current drug use	3	1.2	1	0.4	4	0.8	0.37
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**P value**
Initial CD4 cell count	292.1	245.3	248.4	230.2	271.5	239.1	0.32
Last CD4 cell count	529.3	273.2	529.4	262.3	529.3	267.8	<0.01
Duration of ART (years)	6.7	2.6	5.5	2.9	6.2	2.8	<0.01
Adherence score (0–100)	93.9	11.2	94.2	9.2	94.0	10.3	0.48
EQ-VAS (0–100)	77.0	16.9	78.9	15.5	77.9	16.2	0.23
EQ-5D Index (0.5115–1)	0.6	0.2	0.6	0.2	0.6	0.2	0.84

EQ-VAS: EQ visual analog scale
EQ-ED Index: EuroQol-5 Dimensions – 5 Levels Index
ART, antiretroviral therapy; EQ-5D, EuroQol-5 Dimensions.

Table 4 Factors associated with health service avoidance

Characteristics	Any avoidance of health service		Frequency of health service avoidance	
	OR	95% CI	OR	95% CI
Socioeconomic				
Gender (female vs male—ref)	1.04	0.61 to 1.76	0.97	0.78 to 1.21
Age	0.99	0.95 to 1.03	0.99	0.97 to 1.01
Marital status (vs single—ref)				
Separate/divorce/widow	0.93	0.42 to 2.07	1.11	0.53 to 2.36
Having spouse/partner	0.80	0.44 to 1.46	0.91***	0.86 to 0.96
Education (vs elementary school or less—ref)				
Secondary school	1.00	0.45 to 2.19	0.84	0.41 to 1.70
High school	1.16	0.52 to 2.56	0.95	0.27 to 3.31
Above high school	1.50	0.62 to 3.61	1.18	0.38 to 3.65
Job (vs unemployed—ref)				
White-collar workers	1.44	0.40 to 5.11	1.62***	1.33 to 1.97
Blue-collar workers/farmers	1.02	0.33 to 3.09	1.46	0.85 to 2.49
Self-employed	0.73	0.21 to 2.62	1.12	0.87 to 1.44
Others	1.26	0.45 to 3.56	1.40***	1.21 to 1.63
Household monthly income (poorest—ref)				
Poor	0.57	0.28 to 1.17	0.60**	0.39 to 0.92
Middle	1.22	0.65 to 2.27	1.44**	1.08 to 1.94
High	0.92	0.47 to 1.82	0.83*	0.66 to 1.03
Highest	1.61	0.79 to 3.29	1.43***	1.38 to 1.49
Behaviours				
Hazardous drinking (yes vs no—ref)	0.93	0.56 to 1.56	1.05	0.87 to 1.26
Smoke last 30 days (yes vs no—ref)	1.03	0.60 to 1.77	1.01	0.64 to 1.58
History of drug use (yes vs no—ref)	0.61*	0.34 to 1.07	0.64	0.18 to 2.30
Clinical characteristics				
Having any health problems (yes vs no—ref)	1.24	0.76 to 2.00	1.47***	1.35 to 1.61
HIV stage (symptomatic vs asymptomatic—ref)	0.96	0.33 to 2.82	1.19***	1.07 to 1.34
Initial CD4 cell count (unit: cells)	0.9990**	0.9981 to 0.9999	0.9993***	0.9992 to 0.9993
Last CD4 cell count (unit: cells)	1.0005	0.9997 to 1.0012	1.0005	0.9997 to 1.0012
Duration of ART (unit: years)	0.83***	0.77 to 0.91	0.85	0.70 to 1.04
Adherence score (0–100)	0.99	0.97 to 1.01	1.00	0.97 to 1.03
Times of inpatient service use in the last 12 months (unit: times)	1.30	0.88 to 1.91	1.12***	1.08 to 1.17
Times of outpatient service use in the last 12 months (unit: times)	1.05	0.90 to 1.23	1.07	0.94 to 1.20
Quality of life				
EQ-VAS (unit: score)	1.01	0.99 to 1.02	1.01*	1.00 to 1.01
EQ-5D Index (unit: score)	1.20	0.35 to 4.17	2.15*	0.98 to 4.68
Self-stigma (yes vs no—ref)				
Feeling melancholy related to self-perceived shortcomings or the belief that one has let down one's family.	0.89	0.41 to 1.92	1.29***	1.14 to 1.47

Continued

Table 4 Continued

Characteristics	Any avoidance of health service		Frequency of health service avoidance	
	OR	95% CI	OR	95% CI
Occasions arise when I contemplate a preference for self-harm or even harbouring thoughts of self-destruction.	1.58	0.35 to 7.07	2.24	0.17 to 29.36

*p<0.1, **p<0.05, ***p<0.01.
EQ-VAS: EQ visual analog scale
EQ-ED Index: EuroQol-5 Dimensions – 5 Levels Index
ART, antiretroviral therapy; EQ-5D, EuroQol-5 Dimensions.

diagnosed HIV-positives may have a lower perceived risk due to less extensive negative effects of their disease. Those with delayed diagnoses may also have a lower perceived need for treatment due to the extensive progression of their diseases or negative side effects outweighing benefits. Higher CD4 cells, a component of the immune system, may also result in a reduced sense of urgency for treatment due to less frequent or aggressive symptoms of the illness. Overlapping influences were indicated by the duration of ART and CD4 cells that contribute to healthcare utilisation decision-making. Unresolved areas emphasise the need to include these characteristics in HIV treatment policy.

The differences between the central and provincial levels reflected differences in staff allocation, resources, perception of health services and service accessibility. Our results found more avoidance in higher-income levels, and at central clinics, which were in line with results from a highly similar sample in 2012 by Tran and Nguyen.[25] Looking at the differences between these two settings from two time periods allows for changes across healthcare settings in Vietnam to improve utilisation among HIV-positive members. HIV-related stigma in four Vietnamese hospitals also correlated with fears of casual transmission and negative social judgements between HIV-positive and taboo groups such as sex workers and drug users.[15] Addressing stigma is vital for the utilisation of healthcare in high-risk groups and ultimately improves the healthcare of the general public.

The correlation between higher income levels and avoidance of healthcare may be explained similarly to higher education levels discussed above. These results are supported by findings of lower satisfaction among the richest subsets of previous satisfaction survey responders.[25] Lower-income populations also tended to have timely access to ART, which prevented a multitude of HIV-associated risks such as HIV-related opportunistic infections, poorer responses to treatment and reduced life expectancy. Overall, richer counterparts had better treatment outcomes.[12] Those identified as having health problems, like those with a drug history, are particularly vulnerable subpopulations in the HIV community. A 2007 study found that injecting drug users faced considerable barriers, including but not limited to, discrimination, care denial and mandatory detention due to issues of low social support, personal beliefs surrounding themselves or their illnesses, and housing and financial stability.[26] Understanding barriers are essential to provide treatment methods for those with compounded healthcare issues.

Strengths and limitations

This study has several strengths. First, this study used a standardised scale in Vietnam to assess the related factors of health service avoidance. This ensured that the data collected were relevant and appropriate for the context in which the study was conducted. Moreover, to comprehensively gauge the phenomenon of health service avoidance among HIV patients within the Vietnamese context, this study adopts a multifaceted approach. It entails the investigation of a spectrum of parameters encompassing individual attributes, encompassing age and gender; social determinants such as marital status, education, occupation and monthly household income; and behavioural factors including hazardous drinking, history of drug use and current drug use status among HIV patients. This amalgamation of diverse dimensions is collectively denominated as 'Vietnamese contextual factors' within the scope of this research. The examination of these intricate elements is pursued with the overarching objective of attaining a holistic comprehension of patterns governing access to HIV/AIDS services. The insights gleaned from this comprehensive analysis are anticipated to contribute significantly to the formulation of all-encompassing HIV prevention strategies. This is an important strength, as it allowed for a deeper analysis of the issue, and provided insights that may not have been possible otherwise. Our research represents a pioneering endeavour, as it marks the initial assessment of healthcare service avoidance patterns among individuals living with HIV within the Vietnamese setting. The outcomes of our study are poised to furnish substantive empirical data that may serve as a foundation for policy formulation, offering viable strategies to enhance the calibre of healthcare services and extend meaningful support to the HIV patient demographic.

Our study has certain limitations. In respect of the confidentiality of HIV diagnosis and medical records, we were not able to preidentify the survey sample. Instead,

the sample of participants was identified using convenience sampling, both clinics sampled were from Hanoi, which may reduce the representativeness of our findings. Further evidence from clinics in other regions with large concentrations would provide a better understanding of tailored policies based on location. Second, our clinics were at the provincial and central levels and could not be entirely generalised to other health administrative levels, namely district and community levels. Third, measuring stigma was not the aim of our research, our study only focused on specific aspects of the lived experiences of HIV patients, it is imperative to acknowledge the inherent limitations associated with our decision not to measure stigma comprehensively. While we explored and quantified two salient dimensions of stigma, it is paramount to recognise that stigma in the context of HIV encompasses a multifaceted spectrum, incorporating various perspectives, including those of HIV patients themselves, and clinic attendees based on sexuality/sexual activity. The overarching influence of stigma within the realm of HIV is profound and transcends the mere biomedical aspects of the condition. It has been widely recognised as a pivotal deterrent to the utilisation of healthcare services across diverse sociocultural and geographical contexts.[27 28] Nevertheless, it is imperative to recognise that Vietnam's distinctive culture and social values introduce a complex and dynamic dimension to the stigmatisation of people living with HIV in the context of HIV-related issues.[7] Finally, our study does not measure healthcare avoidance characteristics from key populations such as (men who have sex with men, men who strictly have sex with cisgender women, cisgender and transgender men and women). In light of these considerations, our study underscores the importance of further research endeavours that venture into a comprehensive exploration of stigma's manifold implications between key populations, particularly in its role as a determinant for healthcare avoidance.

CONCLUSION

Our study's findings identify characteristics of significance in relation to health service avoidance and utilisation among HIV-positive patients. The results highlighted the need to improve satisfaction, adherence and utilisation of treatment. Beyond research on characteristics related to health service utilisation, identifying ways to address or incorporate those social determinants in new policy may also help the treatment of HIV/AIDS and strategically allocate funding in the changing financial and political climate of Vietnam.

Author affiliations
[1]Institute for Global Health Innovations, Duy Tan University, Da Nang, Viet Nam
[2]Faculty of Medicine, Duy Tan University, Da Nang, Viet Nam
[3]Institute for Preventive Medicine and Public Health, Hanoi Medical University, Hanoi, Viet Nam
[4]Bach Mai Medical College, Bach Mai Hospital, Hanoi, Viet Nam
[5]Duke University School of Medicine, Duke University, Durham, North Carolina, USA
[6]UnivLyon, Université Claude Bernard Lyon 1, Villeurbanne, France
[7]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, Maryland, USA
[8]Department of Psychological Medicine, Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[9]Institute for Health Innovation and Technology (iHealthtech), National University of Singapore, Singapore

Contributors HLTN: conceptualisation, supervision, methodology, writing–original draft, writing–review and editing; TMB: methodology, data curation, writing–original draft; VATD: data collection, analysis, writing–original draft; TTN: data collection, analysis, writing–original draft; HTN: data curation, analysis, writing–original draft; GMZ: conceptualisation, methodology, writing–review and editing; DB: supervision, methodology, writing–review and editing; QNN: supervision, writing–review and editing; TVN: conceptualisation, supervision, writing–review and editing; CAL: conceptualisation, supervision, writing–review and editing; RCMH: conceptualisation, supervision, writing–review and editing; CSHH: conceptualisation, supervision, writing–review and editing. Guarantor: HLTN

Funding This study received funding from Bach Mai Medical College, Bach Mai Hospital. The article process charge of this paper is supported by NUS Department of Psychological Medicine (R-177-000-100-001/R-177-000-003-001) and NUS iHeathtech Other Operating Expenses (R-722-000-004-731).

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval This study involves human participants and the study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Hanoi Medical University (Code: 18NCS17/HDDDDHYHN). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as online supplemental information. Not applicable.

ORCID iDs
Huong Lan Thi Nguyen http://orcid.org/0000-0003-1182-9204
Roger CM Ho http://orcid.org/0000-0001-9629-4493

REFERENCES

1 World Health Organization. Data on the size of the HIV/AIDS epidemic; 2021.
2 UNAIDS. Vietnam country factsheet; 2021.
3 USAID. HIV/AIDS. 2020. Available: https://www.usaid.gov/vietnam/hiv-aids
4 Centers for Disease Control and Prevention. Government to Government collaboration beginning transition to next phase of PEPFAR. 2016. Available: https://www.cdc.gov/globalhealth/countries/vietnam/stories/next-phase-of-pepfar.html
5 Pacific, U.R.S.T.f.A.a.t. Viet Nam country Snapshot 2019; 2019.
6 Sabin LL, Semrau K, DeSilva M, *et al*. Effectiveness of community outreach HIV prevention programs in Vietnam: a mixed methods evaluation. *BMC Public Health* 2019;19:1130.
7 Than PQT, Tran BX, Nguyen CT, *et al*. Stigma against patients with HIV/AIDS in the rapid expansion of antiretroviral treatment in large drug injection-driven HIV epidemics of Vietnam. *Harm Reduct J* 2019;16:6.
8 Thanh DC, Moland KM, Fylkesnes K. Persisting stigma reduces the utilisation of HIV-related care and support services in Viet Nam. *BMC Health Serv Res* 2012;12:1–9.
9 Dao A, Hirsch JS, Giang LM, *et al*. Social science research on HIV in Vietnam: a critical review and future directions. *Glob Public Health* 2013;8 Suppl 1:S7–29.

10 Gaudine A, Gien L, Thuan TT, *et al*. Perspectives of HIV-related stigma in a community in Vietnam: a qualitative study. *Int J Nurs Stud* 2010;47:38–48.
11 Tran BX, Dang AK, Vu GT, *et al*. Patient satisfaction with HIV services in Vietnam: status, service models and association with treatment outcome. *PLoS ONE* 2019;14:e0223723.
12 Tran BX, Hwang J, Nguyen LH, *et al*. Impact of socioeconomic inequality on access, adherence, and outcomes of antiretroviral treatment services for people living with HIV/AIDS in Vietnam. *PLoS One* 2016;11:e0168687.
13 Tran BX, Nguyen LT, Nguyen NH, *et al*. Determinants of antiretroviral treatment adherence among HIV/AIDS patients: a multisite study. *Glob Health Action* 2013;6:19570.
14 Tran BX, Nguyen N, Ohinmaa A, *et al*. Prevalence and correlates of alcohol use disorders during antiretroviral treatment in injection-driven HIV epidemics in Vietnam. *Drug Alcohol Depend* 2013;127:39–44.
15 Pulerwitz J, Oanh KTH, Akinwolemiwa D, *et al*. Improving hospital-based quality of care by reducing HIV-related stigma: evaluation results from Vietnam. *AIDS Behav* 2015;19:246–56.
16 Tran BX, Bui TM, Do AL, *et al*. Efficacy of a mobile phone-based intervention on health behaviors and HIV/AIDS treatment management: randomized controlled trial. *J Med Internet Res* 2023;25:e43432.
17 Tran BX, Bui TM, Do AL, *et al*. Changes in quality of life outcomes of patients with hiv/aids under a theory-based mobile health intervention. *AIDS Behav* 2023;27:3905–15.
18 EQ-5D-5L user guide. Basic information on how to use the EQ-5D-5L instrument. 2017. Available: https://euroqol.org/wp-content/uploads/2016/09/EQ-5D-5L_UserGuide_2015.pdf
19 Mai VQ, Sun S, Minh HV, *et al*. An EQ-5D-5L value set for Vietnam. *Qual Life Res* 2020;29:1923–33.
20 Lim T, Zelaya C, Latkin C, *et al*. Individual-level socioeconomic status and community-level inequality as determinants of stigma towards persons living with HIV who inject drugs in Thai Nguyen. *J Int AIDS Soc* 2013;16:18637.
21 Boyer S, Marcellin F, Ongolo-Zogo P, *et al*. Financial barriers to HIV treatment in Yaounde, Cameroon: first results of a national cross-sectional survey. *Bull World Health Organ* 2009;87:279–87.
22 Wilkinson AL, McMahon J, Cheah Y-S, *et al*. Paying the price in an era of HIV treatment as prevention: a retrospective study of the cost burden of HIV treatment for people living with HIV in Victoria, Australia. *Sex Health* 2015;12:34.
23 Mbachu C, Okoli C, Onwujekwe O, *et al*. Willingness to pay for antiretroviral drugs among HIV and AIDS clients in South-East Nigeria. *Health Expect* 2018;21:270–8.
24 Nguyen LT, Tran BX, Tran CT, *et al*. The cost of antiretroviral treatment service for patients with HIV/AIDS in a central outpatient clinic in Vietnam. *Clinicoecon Outcomes Res* 2014;6:101–8.
25 Tran BX, Nguyen NPT. Patient satisfaction with HIV/AIDS care and treatment in the decentralization of services delivery in Vietnam. *PLoS One* 2012;7:e46680.
26 Maher L, Coupland H, Musson R. Scaling up HIV treatment, care and support for injecting drug users in Vietnam. *Int J Drug Policy* 2007;18:296–305.
27 Sayles JN, Wong MD, Kinsler JJ, *et al*. The association of stigma with self-reported access to medical care and antiretroviral therapy adherence in persons living with HIV/AIDS. *J Gen Intern Med* 2009;24:1101–8.
28 Zarei N, Joulaei H, Darabi E, *et al*. Stigmatized attitude of healthcare providers: a barrier for delivering health services to HIV positive patients. *Int J Community Based Nurs Midwifery* 2015;3:292–300.