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Original Research Article

Satisfaction among people living with HIV/AIDS accessing ART services: a hospital-based study

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ABSTRACT

Background: HIV/AIDS is a sexually transmitted with possibly no cure, it is a persistent epidemic and a major global public health issue. Through ART centres, which are often developed in hospital settings, the public sector provides care and treatment services for PLHIV. An important tool for getting feedback from the PLHIV is a satisfaction survey. Hence present study was conducted in an ART centre facility to explore satisfaction regarding ART services among PLHIV.
Methods: Present study was a cross-sectional study done to assess the satisfaction levels among people living with HIV/AIDS accessing ART services at a hospital-based ART centre at tertiary care teaching hospital. After obtaining socio demographic details, study subjects were subjected to standard PSQ-18 questionnaire for determining satisfaction.
Results: With regard to health care services, participants in general have been found to be satisfied with the services and quantification of this is depicted by 74% overall satisfaction reported by study participants. Mean satisfaction was found to be highest in technical quality (4.073±0.436) followed by general satisfaction (4.004±0.422) and lowest scores were found for financial aspects (3.201±0.702) and accessibility/convenience (3.157±0.441).
Conclusions: In order to increase PLHIVs' satisfaction with care, policymakers, programme managers, and service providers may find it useful to prioritise and deliver specific care facets.

Keywords: ART centre, HIV/AIDS, Patient satisfaction, People living with HIV/AIDS, PLHIV, PSQ-18

INTRODUCTION

HIV/AIDS is a sexually transmitted with possibly no cure, it is a persistent epidemic and a major global public health issue.[1] However, because of effective HIV prevention, diagnosis and treatment, it has become a manageable chronic health condition. As of 2023, approximately 39.9 million people globally were living with HIV, with 1.3 million new infections and 630,000 AIDS-related deaths reported that year. In India, the National AIDS Control Organization (NACO) estimated that 3.14 million individuals were living with HIV/AIDS in 2023. The national adult HIV prevalence rate stands at 0.20%, but certain regions exhibit significantly higher rates.[2] China, India and Indonesia account for almost three-quarters of the total PLHIV. Since the peak in 2004, there has been a more than 56% decrease in AIDS-related mortality. Antiretroviral therapy (ART) has been pivotal in reducing AIDS-related mortality. Globally, 30.7 million people were accessing ART by the end of 2023, up from 7.7 million in 2010. In India, over 1.78 million people were on ART in 2023. This reflects significant expansion of accessibility to antiretroviral therapy which has helped reduced AIDS related death, especially in

more recent years. While the national HIV prevalence and incidence remains low in India, the epidemic is strong in some geographical regions and population groups.[2,3]

Patient satisfaction is patient's perception of care received compared to care expected. Needs and levels of satisfaction of patient is of immense epidemiological importance and it is crucial to ensure highest quality care and patient satisfaction to maximize benefits of scarce resources and in order to achieve the targets.[4] Needs of PLHIV are multiple and complex. It is essential to understand those needs so that medical, non-medical, social, cultural, and economical interventions can be planned accordingly. Through ART centres, which usually operate in hospital settings, the public sector provides care and treatment services for PLHIV.[5] When utilizing these services, PLHIV encounter numerous administrative and procedural issues that lower their level of satisfaction. It has been established that patients with higher levels of satisfaction are more likely to adhere to treatment and have better health outcomes than patients with lower levels of satisfaction, making it a crucial indicator of the quality of the health care delivery system.[3]

Surveying patient satisfaction is a vital tool for obtaining feedback from beneficiaries, enabling the assessment of service efficiency and identification of areas needing improvement. This is particularly important in the context of HIV care, where satisfaction significantly impacts retention in care and adherence to antiretroviral therapy (ART).[6] Despite notable progress in the availability and accessibility of ART, patient satisfaction remains a critical yet underexplored component of HIV service delivery, especially in routine programmatic and hospital-based settings in Central India. Limited evidence exists on the specific factors influencing satisfaction among people living with HIV/AIDS (PLHIV), making it essential to understand their perceptions and experiences. Such insights are crucial for program managers and policymakers to monitor performance, address service gaps, and enhance the quality of care. Therefore, the present study was conducted at a hospital-based ART centre to assess satisfaction levels and associated factors among PLHIV, aiming to inform evidence-based improvements in service delivery.

METHODS

The present study was a cross-sectional study conducted to assess the satisfaction levels among people living with HIV/AIDS (PLHIV) accessing ART services at a hospital-based ART centre in a tertiary care teaching hospital, from January 2019 to June 2020.

Study setting and participants

The study universe comprised all PLHIV who were registered at the ART centre and were on antiretroviral therapy during the data collection phase. Ethical clearance was obtained and written informed consent was obtained from all participants. Adult PLHIV aged more than 18 years, who had been on ART for more than six months and provided consent, were included in the study. Remove quantitative part of the study. PLHIV with mental illnesses or communication barriers were excluded.

Sample size and sampling

Taking a prevalence of PLHIV satisfaction as 69%, at a 95% confidence level and 5% absolute error, with 10% added for potential dropouts, the calculated sample size was 366, which was rounded to 370. From 1400 PLHIV in active care during the study period, 400 patients were selected using random number tables. If a selected patient did not meet the inclusion criteria or declined consent, the next patient on the list was considered.

Measures and data collection procedures

Data was collected using a structured, pretested questionnaire. The first part of the questionnaire captured socio-demographic details. Following this, participants were administered the validated PSQ-18 (patient satisfaction questionnaire short form) to assess satisfaction levels.[7] This tool is based on the original patient satisfaction questionnaire developed by Ware, Snyder, and Wright (1976) for the National Center for Health Services Research (NCHSR). The PSQ-18, a third-generation version, includes 18 items that evaluate patient satisfaction across seven domains. All information was collected in a private setting, ensuring full confidentiality.

Statistical analysis

Data were entered and coded using SPSS version 23. Descriptive statistics were used to summarize sample characteristics in terms of frequency and percentage. Means±standard deviation (SD) was calculated for continuous variables. Differences between the mean scores of various PSQ-18 domains were analyzed using the ANOVA test.

RESULTS

In this study, most participants were aged 18-45 years (78.4%) and male (57.8%). About 61.6% were literate, with primary education being most common. Two-thirds (66.5%) were employed, mainly in unskilled work (31.5%). The majority belonged to the lower middle (34.6%) or middle class (27.8%), resided in urban areas (54.3%), and were Hindu (89.7%). Caste-wise, 44.6% were SC/ST. Most were married (69.5%) and lived in nuclear families (71.6%). Mean satisfaction was found to be highest in technical quality (4.073±0.436) followed by general satisfaction (4.004±0.422) and lowest scores were found for financial aspects (3.201±0.702) and accessibility/convenience (3.157±0.441). Mean overall

satisfaction scores were highest for participants who were males (66.07±6.03, OR=0.71) and living in nuclear family (66.73±5.68, OR=1.83). Rural residents (65.92±4.44) were found to be less satisfied as compared to urban residents (67.22±6.45, OR=1.57).

All the items/questions were scored from 1 to 5 so that high score reflect satisfaction with health care. After scoring, items with in each subscale were averaged together to create seven subscale scores (Table 2).

Table 1: Socio demographic details of study participants (n=370).

Variables		Frequency	Percentage
Age (years)	18-45	290	78.4
	46-60	68	18.4
	>60	12	3.2
Gender	Male	214	57.8
	Female	156	42.2
Education	Illiterate	142	38.4
	Literate	228	61.6
	Primary education	105	28.4
	Middle education	33	8.9
	Higher secondary	57	15.4
	Graduate	33	8.9
Occupation class	Unemployed	124	33.5
	Employed	246	66.5
	Unskilled	118	31.5
	Semiskilled	67	18.1
	Skilled	61	16.5
SES	Lower class	90	24.3
	Lower middle	128	34.6
	Middle class	103	27.8
	Upper middle	42	11.4
	Upper class	7	1.9
Residence	Urban	201	54.3
	Rural	169	45.7
Religion	Hindu	332	89.7
	Muslim	38	10.3
Caste	General	98	26.5
	SC/ST	165	44.6
	OBC	107	28.9
Marital status	Unmarried	53	14.3
	Married	257	69.5
	Divorced	47	12.7
	Widowed	13	3.5
Family type	Nuclear	265	71.6
	Joint	53	14.3
	Three generation	38	10.3
	Living alone	14	3.8

Table 2: Calculation of level of satisfaction in terms of different domains of satisfaction according to patient satisfaction questionnaire (PSQ-18).

Domains	Items/questions	Max possible score	Max. mean	Level of satisfaction (%)
General satisfaction	3+17 (A)	10	5	A/10*100
Technical quality	2+4+6+14 (B)	20	5	B/20*100
Interpersonal manner	10+11 (C)	10	5	C/10*100
Communication	1+13 (D)	10	5	D/10*100
Financial aspect	5+7 (E)	10	5	E/10*100
Time spent with doctor	12+15 (F)	10	5	F/10*100
Accessibility and convenience	8+9+16+18 (G)	20	5	G/20*100

OSAT	All 18 scales (OSAT)	90	5	OSAT/90*100

Table 3: Satisfaction level of study participants in terms of domains of patient satisfaction (PSQ-18).

Domains of patient satisfaction	Mean±SD
General satisfaction	4.004±0.422
Technical quality	4.073±0.436
Interpersonal manner	3.901±0.587
Communication	3.995±0.443
Financial aspects	3.201±0.702
Time spent with doctor	3.748±0.595
Accessibility and convenience	3.157±0.441
Overall satisfaction (OSAT)	3.701±0.314

Table 4: Variations in mean overall satisfaction (OSAT) score on basis of socio-demographic variables.

Socio-demographic variables		OSAT score Mean±SD	t value	P value
Age	18-45 years	66.63±5.79	2.65	0.07
	46-60 years	67.22±5.05		
	>60 years	63.16±4.46		
Gender	Male	66.07±6.03	2.22	0.02*
	Female	67.39±4.89		
Religion	Hindu	66.57±5.35	0.57	0.56
	Muslim	67.13±7.81		
Caste	General	66.77±7.13	0.29	0.76
	Others (SC/ST/OBC)	66.57±5.02		
Residence	Urban	67.22±6.45	2.19	0.02*
	Rural	65.92±4.44		
Education	Literate	66.83±6.32	0.89	0.37
	Illiterate	66.29±4.35		
Occupation	Occupied	66.47±5.96	0.71	0.47
	Unoccupied	66.93±4.96		
Family type	Nuclear	66.73±5.68	0.60	0.54
	Joint/three gen	66.31±5.54		
Socio-economic status	Lower class	65.89±5.27	2.07	0.08
	Lower middle	67.05±5.22		
	Middle class	67.48±5.36		
	Upper middle	65.17±7.72		
	Upper class	64.71±5.67		

*Statistically significant.

Table 5: Binary Logistic analysis of overall satisfaction (OSAT) score categories with socio-demographic variables.

Socio-demographic and clinical variables		Overall satisfaction (OSAT) score category	
		Odd's ratio	P value
Religion	Hindu	Reference Category	
	Muslim	1.02 (0.52-2.02)	0.93
Caste	Others (SC/ST/OBC)	Reference Category	
	General	1.49 (0.94-2.37)	0.08
Residence	Rural	Reference Category	
	Urban	1.57 (0.43-1.02)	0.06
Family type	Joint/three gen	Reference Category	
	Nuclear	1.83 (1.11-3.03)	0.01*
SES	Lower class	Reference Category	
	Lower middle	4 (0.46-34.6)	0.20
	Middle class	5.2(0.62-45.2)	0.12

	Upper Middle	4.4(0.52-38.5)	0.17
	Upper Class	4(0.45-37)	0.21

*Statistically significant.

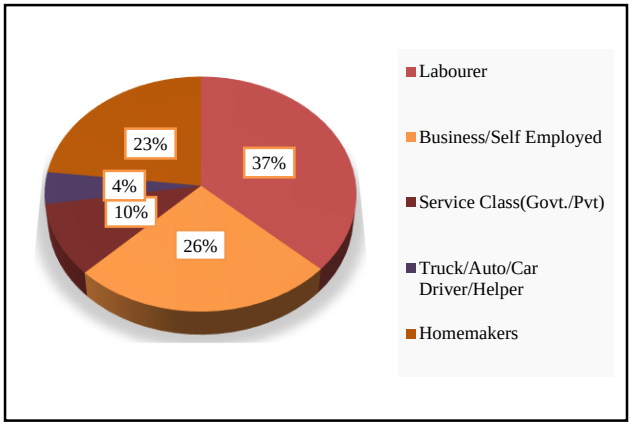

Figure 1: Distribution of study participants according to type of occupation.

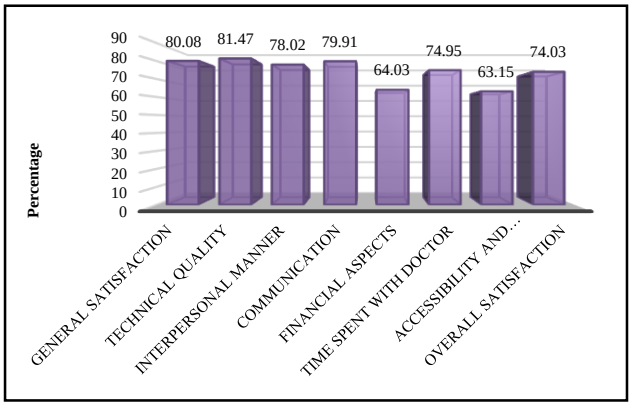

Figure 2: Satisfaction (%) of study participants in terms of different domains of patient satisfaction.

DISCUSSION

In the present study, the mean age of study participants was 38.69 years, and the majority (78.4%) were in the reproductive age group. Nikitha et al also reported a similar mean age of 39.6 years among ART centre attendees, supporting the age distribution observed in our study.[8] Similar results were observed by Chander et al, Dixit et al and Sood et al.[4,5,9] The proportion of males (57.8%) was slightly more than females (42.2%) in this study, which corroborates with the findings of Chander et al (55.9% males).[5] This might be due to less reporting by females, which simulates with other studies and reflects the situation of HIV/AIDS in India.

It was observed that more than half of the patients were literate (61.6%), employed (66.5%), and belonged to urban areas (54.3%). The majority of patients (32%) worked as unskilled labourers, and nearly 20% of the female research participants were housewives; this may have been because the majority of them worked away from their homes and engaged in risky behaviour that resulted in HIV infection. Although truck drivers are considered a high-risk group for getting infected with HIV, in our study there were a very small percentage of participants who were truck/auto/car drivers (3.8%). In their study, Sunita et al found that just 6.2% of patients had tertiary education, 15.0% were illiterate, and 45% had only primary education.[10] In comparison, Nikitha et al found a higher rate of illiteracy (49.7%) and 35.3% unemployment, with 36.7% engaged in unskilled labour-figures that broadly support the occupational and educational profile seen in our study.[8]

The observation from our study revealed that the majority of study participants lived in nuclear families (71.6%). Results of my study are in accordance with the results of another study done by Dixit et al in Chhattisgarh, where they found that more than half of the study participants (58.4%) lived in nuclear families.[4] Similarly, Kshatri et al also found that most general PLHIV patients lived in nuclear families, belonged to the lower middle class, and were primarily in the 30-49-year age group-closely mirroring our population profile.[11]

With regard to health care services, participants in general were found to be satisfied, with 74% overall satisfaction reported in the present study. Mean satisfaction was highest for technical quality (4.073±0.436), followed by general satisfaction (4.004±0.422), while the lowest scores were observed in financial aspects (3.201±0.702) and accessibility/convenience (3.157±0.441). In our study, low scores in financial and accessibility domains likely reflect the burden of travel expenses, lost wages, and monthly visits for medication, coupled with out-of-pocket costs for routine investigations despite free prognostic testing. These findings are consistent with those of Vahab et al, who similarly reported the highest satisfaction with technical quality (4.77±0.26) and the lowest with financial aspects (3.20±0.78) among PLHIV in a tertiary care setting in southern India, emphasizing that dissatisfaction in the financial domain persists even in well-resourced centres due to out-of-pocket expenses for investigations and medications not covered under free ART.[12] These barriers are echoed in Tran et al study from Vietnam, which noted that despite free treatment, hidden costs and long travel distances significantly impacted satisfaction.[13] Similarly, Hareru et al observed that long queues, additional laboratory costs, and travel expenses contributed to dissatisfaction among PLHIV, underscoring the need for systemic improvements in accessibility and financial support.[14] Our results also align with those of Maduka et al, who identified overcrowding, long waiting times, and expensive lab services as primary sources of dissatisfaction.[15] Likewise, Rai et al in central India found the lowest satisfaction scores for accessibility (2.52) and financial aspects (2.67), while general

satisfaction scored highest (3.18).[16] Nikitha et al reported a high overall satisfaction rate (92.6%) but dissatisfaction due to long waiting times, inadequate sanitation facilities, and costly routine tests.[8] Kshatri et al also highlighted dissatisfaction related to infrastructure deficits, including overcrowding, long queues, and lack of toilets, particularly among sexual minority PLHIV.[11] Collectively, these findings emphasize the persistent challenges in financial and logistical domains of HIV care, even when core clinical services are rated highly, and underscore the need for targeted interventions to improve patient satisfaction.

Various sociodemographic and service-related factors have been shown to significantly influence patient satisfaction with healthcare services, as corroborated by multiple studies. In the present study, age (p=0.03), residence (p=0.03), and family type (p=0.01) emerged as significant predictors of satisfaction. Similar findings were reported by Dixit et al, who observed that age, education, travel time to the ART centre, and adherence to treatment significantly affected patient satisfaction.[4] In their analysis, male patients (66.07±6.03, OR=0.71) and those from nuclear families (66.73±5.68, OR=1.83) had higher satisfaction scores. Urban residents (67.22±6.45) were more satisfied than rural residents (65.92±4.44, OR=1.57), a disparity likely attributed to better education levels and easier access to healthcare services in urban areas. Bhatt et al also emphasized the role of sociodemographic factors, highlighting significant associations between satisfaction and variables such as age (p=0.008), type of residence (p=0.001), occupation (p=0.0019), income (p=0.014), travel time (p=0.013), and insurance coverage (p=0.017).[17] These findings reinforce the multifactorial nature of patient satisfaction, wherein both personal and systemic elements play key roles. Supporting this, Nikitha et al identified statistically significant relationships between satisfaction and age, marital status, education level, socioeconomic status, and waiting time.[8] Kshatri et al further added that family type, education level, service hours, and waiting time were important predictors, especially in sexual minority patients, indicating that tailored services might be necessary to meet the diverse needs of specific populations.[11]

Taken together, these studies illustrate a consistent pattern: higher satisfaction is generally associated with younger or middle-aged patients, higher education and income levels, nuclear family structure, urban residence, shorter waiting times, and better service accessibility. However, variations across specific populations underscore the need for context-sensitive interventions to enhance healthcare experiences for all.

The study has certain limitations. As it was conducted at a single site, the generalizability of the findings is restricted. Moreover, the cross-sectional design limits the ability to establish causal relationships and to track changes in patient satisfaction over time. To gain a deeper understanding of satisfaction dynamics and influencing factors, prospective longitudinal studies are recommended. Additionally, incorporating qualitative assessments across diverse geographic locations would help capture contextual nuances and provide a more comprehensive understanding of PLHIV experiences, thereby informing more tailored and effective interventions

CONCLUSION

As the study was conducted within routine programmatic settings, the findings reflect the ground realities and offer actionable insights for program managers. The present study provides valuable insights for policymakers, program managers, and service providers to identify and address key areas for enhancing the quality of ART services. While technical quality received the highest satisfaction scores, accessibility/convenience and financial aspects were rated lowest, highlighting critical gaps in service delivery. Targeted improvements in these areas are essential to enhance overall patient satisfaction. Strengthening these components will support better retention and adherence among PLHIV.

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