

Evaluation of healthcare usage rate in HIV/AIDS patients in Isfahan, Iran in 2018

Neda Moein¹, Reza Khadivi¹, Zahra Amini¹, Marjan Meshkati²

¹Department of Community Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

²Isfahan Provincial Health Center, The Communicable Diseases Control Group, HIV/AIDS Unit, Isfahan University of Medical Sciences, Isfahan, Iran

Abstract

Introduction: Universal health coverage (UHC) was introduced in Iran in 2014. The aim of this study was to evaluate the usage rate of health services by human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) patients after UHC implementation.

Material and methods: In 2018, in a cross-sectional study, we evaluated the outpatients' needs (within its previous month) and inpatients' needs (within its previous 6 months) of HIV/AIDS patients in Isfahan province (the center of Iran). Concurrently, we estimated the essential health care services that HIV/AIDS patients have to receive regularly, including vaccination for hepatitis B, measurement of CD4, tuberculosis (TB) assessments and TB treatment, anti-retroviral therapy, examination of viral load, treatment approach, and drug side effects counseling. Two checklists were used for assessing the utilization of health services and essential health cares for HIV/AIDS patients, validated by the Ministry of Health and Medical Education of Iran. Data were analyzed by χ^2 test, Pearson's correlation coefficient, and Spearman's correlation test.

Results: Two hundred and thirteen HIV/AIDS patients completed the questionnaires. The mean age of participants was 41.14 ± 9.23 . The outpatient service utilization rate was 31.94% in the previous month and the rate of hospitalization was 126 per 1,000 HIV/AIDS patients in the previous 6 months. The majority of HIV/AIDS patients received essential health services more often than the national standard goals estimation.

Conclusions: After UHC implementation, the utilization rate of outpatients and inpatients services in HIV/AIDS patients was more than similar indices in the general population. In addition, HIV/AIDS patients received essential health services adequately.

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Introduction

Universal health coverage (UHC) is defined as ensuring that all people have access to needed health services (including prevention, promotion, treatment, rehabilitation, and palliation) of sufficient quality to be effective, and ensuring

that the use of these services does not expose the user to financial hardship. UHC has therefore become a major goal for health sector reform in many countries and a priority objective of the World Health Organization (WHO). UHC embodies three related objectives. First, equity in access to health services, where health services are available to all

Address for correspondence: Reza Khadivi, Department of Community Medicine, Isfahan University of Medical Sciences, Hazar Jarib, 8174673461, Isfahan, Iran, e-mail: khadivi@med.mui.ac.ir

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individuals, not just to those who can afford them. Second, the acceptable quality of health services, by which health status of those receiving services improves. Third, the financial (risk protection) ensuring that the cost of using care does not put people at risk of financial hardship [1].

“Health equity” implies that, ideally, everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this possibility [2].

Since the acquired immune deficiency syndrome (AIDS) epidemic, more than 70 million people have been infected with HIV virus, and about 35 million people have died of AIDS-related illnesses [3].

In order to achieve the goals of sustainable development, the target in the field of AIDS is to control the AIDS epidemic by 2030 and in pursuit of these goals, serious planning has been undertaken in different countries. The comprehensive UNAIDS strategy for the control of HIV in the 2016-2021 period has three general objectives. With 90-90-90 targets, it is expected that by 2020, about 90% of the world's patients will be identified, with 90% of identified cases undergoing antiretroviral therapy, of which 90% with viral load restriction. By achieving these goals, it is hoped that the world will reach the goal of controlling the AIDS epidemic in 2030.

Iran is also among the countries that are committed to step up into the program. It is estimated that 66,000 people are living with HIV in Iran [3]. The Fourth Strategic National AIDS Control Program in Iran was implemented from 2015 to 2019, with close and comprehensive collaboration of relevant organizations [4], with its national strategy structured around the 90-90-90 targets and ending the AIDS epidemic by 2030 [5].

Voluntary and counseling test centers (VCT) are one of the successful practices of the country that has been able to take effective steps in controlling HIV. In VCT, all HIV prevention, care and treatment services, especially vaccines and treatments for AIDS patients, harm reduction services (syringes and needles, condoms), training, counseling, and HIV testing of people at risk of exposure are completely confidential, voluntary, and free of charge.

Health sector reform was introduced in Iranian health system via UHC approach in 2014 in all (rural and urban) regions to tackle the goals that were emphasized in the Fourth Strategic National AIDS Control Program. According to our best of knowledge, no paper has been published regarding this subject in Iran. In this study, we assessed the healthcare utilization in HIV/AIDS patients for inpatient and outpatient services at four years after UHC implementation.

Material and methods

This cross-sectional study was performed from March to June 2018. The research population included patients with HIV/AIDS who have a health file in a voluntary and counseling test center (VCT) in Isfahan. Isfahan is a province in the center of Iran, with a population of 5.5 million and approximately 700 HIV/AIDS patients. In VCT, the delivery

of health services is comprehensive and free of charge. Three hundred and thirty-nine patients were registered in VCT by the end of 2017. The number of these patients was not constant due to the facts that some of them had migrated, stayed in prisons, or died. The inclusion criteria consisted of HIV/AIDS patients who were covered by the VCT and have signed an informed consent regarding participation in the study. Exclusion criteria applied to patients who did not have the ability to interview, have severe psychiatric disorders, used psychotropic drugs that affect the ability of an individual to answer questions, and those who did not come to the center, despite having received phone calls.

Two checklists were used in this study. By the first one, demographic data including gender, age, education level, job, cause of infection, and marital status were collected. Also, in this checklist, the number of needs, requests, and health care services provided for inpatients (during the last six months) and outpatients (during the last month) were collected. This checklist was used for assessing the utilization of health services at national level. The validity and reliability of this tool was assessed by Etemad *et al.* [6].

The second tool was health services utilization (HSU) questionnaire, evaluating the essential health cares for HIV/AIDS patients including health assessment every three months, vaccination for hepatitis B, measurements of CD4 level every six months, tuberculosis (TB) assessments with a purified protein derivative (PPD) test, concurrent treatments of TB and AIDS, anti-retroviral therapies and check of viral load, and treatment and drug side effects counseling. This checklist was completed individually by patients registered in the VCT center, in a confidential place at patients' privacy. The validity and reliability of this questionnaire was assessed by the Ministry of Health and Medical Education of Iran previously.

Collected data were analyzed by using SPSS software version 16. The findings were presented with descriptive indexes (such as frequency, mean, and standard deviation), and analytical tests (χ^2 , Pearson's, and Spearman's correlation).

This study was approved by the Isfahan University of Medical Sciences ethics committee with a code “Ir.mui.rec.1396.3.586”.

Results

Two hundred and thirteen HIV/AIDS patients completed the questionnaires, and other patients did not arrive to the center, despite having received phone calls.

The mean age of the participants was 41.14 ± 9.23 (range, 11-65 years). One hundred and forty-one (66.2%) of the subjects were male. Two hundred and eight (97.7%) cases were well-educated and 8% of subjects had education higher than diploma. Nearly one-half of subjects were married (113), ninety-one (42.7%) subjects were self-employed, and 54 (25.4%) subjects were unemployed. Intravenous drug abuse was the most common route of HIV infection in these patients (Table 1).

Seventy-two (33.8%) cases of HIV/AIDS participants needed outpatient services in the previous month. After that,

23 (59%) out of 39 subjects (54.2%) who had required outpatient services, received them. The outpatient service utilization rate for every HIV/AIDS patient was 23/72 (31.94%) in the previous month.

The most frequent outpatient health need was dentistry (72.2%), in which only 32.6% of them had received health needs ultimately. Other outpatients' health services were physician visit (22.2%) and para-clinic services (5.6%).

Out of 213 patients, 33 subjects (15.5%) needed inpatient services in the last 6 months (or 31% in the last year). Among those, 29 subjects (87.9%) had sought and 27 (93.1% of HIV/AIDS cases who requested hospitalization) cases had received demanded inpatient services. Finally, the rate of hospitalization in all HIV/AIDS patients was 27/213, 126 times per 1,000 HIV/AIDS patients. Most frequent inpatient needs were non-surgical services (60.6%), followed by surgical services (15.2%), birth deliveries (12.2%), and diagnostic services (12.2%). More than 90% of HIV/AIDS patients who needed inpatient services had received them. From all hospitalized HIV/AIDS patients, 16 patients (61.5%) had fully recovered and 38.5% had a relative improvement. Causes for non-action and no service provided are indicated in Table 2.

The utilization rate of specific health services for HIV/AIDS patients, in comparison with the pre specified national goals of HIV program [4] is shown in Table 3.

There were no significant statistical differences or correlations between frequency of required services for inpatients and outpatients and variables such as HIV/AIDS's gender, age, job, marriage status, and route of HIV infection (p value > 0.05).

Discussion

The utilization rate of specific health services for HIV/AIDS patients in Isfahan province were sufficient as notified in the national HIV program [4]. Although before the UHC implementation in Iran, the quality of care in HIV/AIDS patients was assumed to be low based on the perspectives of policy makers, physicians, and consultants, and one major cause of inappropriate treatment delivered by service

providers [7]. Now, HIV control program is integrated into well-organized primary health care system in Iran.

In the present study, the outpatient service utilization rate for HIV/AIDS patients was 31.94% in the previous month. To our best of knowledge, no similar study was published on HIV/AIDS patients' needs assessment, therefore we compared the results of present study with another health needs assessment research on non-HIV patients. The outpatient

Table 1. Demographic characteristics of HIV/AIDS patients

Variable	Frequency, n (%)
Gender	
Male	141 (66.2)
Female	72 (33.8)
Patient's level of literacy	
Illiteracy	5 (2.3)
Diploma and under diploma	191 (90.0)
Above diploma	17 (8.0)
Patient's marital status	
Single	54 (25.3)
Married	113 (53.1)
Divorced or widow	46 (21.6)
Patient's occupation	
Unemployed	54 (25.4)
House keeper	56 (26.3)
Worker	4 (1.9)
Employee	8 (3.8)
Business	91 (42.7)
Route of HIV infection	
Intravenous drug	95 (44.6)
Maternal route	2 (0.9)
Unsafe sex behavior	58 (27.2)
Homosexuality	2 (0.9)
Infected partner	56 (26.3)

Table 2. The causes of non-action and no service providing

	Cause of non-seeking	Frequency, n (%)	Cause of not receiving	Frequency, n (%)
Outpatient	Having no time	4 (12.1)	No funds	1 (6.3)
	Not knowing where to go	1 (3.0)		
	Disrespectful personnel's behaviors	14 (42.4)	Being dismissed due to disrespectful personnel	5 (31.3)
	Being unwilling due to illness	14 (42.4)	Being denied by the personnel	10 (62.5)
Inpatient	Having no time	1 (25.0)	No funds	1 (50.0)
	Not liking the hospital staff	1 (25.0)		
	Not interested in being hospitalized	2 (50.0)	Being excluded by the personnel because of HIV	1 (50.0)

Table 3. The utilization rate of essential health services specified for HIV/AIDS patients in Isfahan province in 2018 in comparison with the pre-specified national goals of HIV program

Variable	Frequency, n (%)	National goal, %	p value
Hepatitis B vaccination	175 (81.6)	70	0.000
Health assessment every three months	149 (70.0)	75	0.000
CD4 level measurement	199 (93.4)	75	0.000
Tuberculosis assessment with purified protein derivative test (PPD)	150 (70.4)	75	0.000
Concurrent treatment of tuberculosis and AIDS	15 (100.0)	65	0.000
Anti-retroviral therapy	205 (96.2)	34	0.000
Viral load checked	143 (67.1)	70	0.000
Treatment and drug side effects counseling	213 (100)	85	0.000

service utilization rate for Iranian general population was 14.8% in previous 2 weeks [6].

In our study, 45.8% of HIV/AIDS patients who needed outpatient services had not sought to receive it at VCT. The main cause of non-seeking was unwillingness of patients due to illness, social stigma, and bad behaviors of health care providers. In Khuat *et al.*'s study, it was shown that there is a severe stigma in health care settings against HIV/AIDS patients and in order to avoid the stigma, many HIV patients did not disclose their HIV status to have greater comfort in private facilities, because in these facilities they were less stigmatized than in public health care services [8]. Forty-one percent of HIV/AIDS patients who needed outpatient services did not receive it seeking health service out of VCT, where main reasons of not accepting health care providers were the type of disease and services refusal through disrespectful personnel. In Iranian general population, main reasons for non-utilizing outpatient services were lack of funds and expensive price of services [6]. According to Ghanizadeh *et al.*'s study, logistic barriers such as the cost of services, inconvenience of services, and distance to service providers overall reduce the outpatient health services utilization [9]. In JULIA study, the major barriers to utilize HIV services were no insurance coverage, forgetting appointments, having trouble making appointments, and high costs that were not covered by health insurance organizations. The major reasons for never starting ART were side effect concerns, attitudes that HIV could be controlled with a healthy approach, adherence concerns, and depression. In other words, the major reasons for discontinuing ART were depression, wanting a break, and side effects [10]. In Ibidun paper, the experienced difficulties with health services in migrants living with HIV in Europe were no GP/health card/insurance, long waiting time for an appointment/in the clinic, and lack of trust in GP confidentiality [11]. According to Laisaar *et al.*'s study, the main issues in HIV/AIDS patients engagement in HIV care in Estonia in 2013 were, as about one quarter of persons estimated to live with HIV had not been diagnosed, another quarter although aware of their HIV-positive status had not accessed HIV medical services,

and more than half of HIV/AIDS patients having accessed HIV medical cares did not maintain in care. These findings highlight the need for continuous and enhanced effort to identify people with HIV for linkage and retention in HIV/AIDS specific cares [12].

Innately, free health services or financial discount for HIV/AIDS patients in Iran have changed barriers in facing health service utilization, and at the same time, the staff's commitment to regard patients' dignity as more important in HIV cases. In addition, it would be more critical to reduce the social stigma of HIV/AIDS cases.

In the present study, inpatient utilization rate was 126 times per 1,000 HIV/AIDS; however, the hospitalization rate in Iranian general population was 56.8 per 1,000. The same as outpatient health services, HIV/AIDS patients needs more hospital services. More hospitalization rate in the present study in comparison with previous study in Iranian general population would be a logical issue. Following UHC, the annual hospitalization rate raised from 44.3 to 65.6 per 1,000 inhabitants in rural areas, and from 92.7 to 95.7 in the population covered by a medical services insurance organization fund for civil servants [13]. Obviously, reducing co-payment to less than 10% paid by patients for hospital cares (following introducing UHC) have increased the inpatient utilization rate in general population, particularly in HIV/AIDS patients.

In Naghavi's study, needs, seeking and receiving outpatient services were reported more in illiterate people and in people living alone. Hassanzadeh *et al.* showed that females and those who had a higher household wealth index, fewer years of education, higher income level, and those who were insured had higher desires than other subjects to use outpatient services [14]. Later, the major variable that affected referring to health centers was education of householders [15, 16]. In Doroh *et al.*'s study, the variables of sex, education level, region of residence, employment, and health insurance coverage were all related to outpatient services utilization [17]. However, in our study, there was no significant relationship between the rate of benefiting from essential services for HIV/AIDS patients and their education level,

marital status, age, and occupation. This is because the Isfahan's VCT provides special health care services to HIV/AIDS cases, both by active manner and comprehensive approach.

In this study, the major cause of infection in most of patients was intravenous drug using and is consistent with Yaghoobi *et al.*'s study [18].

In Ryan's research, it was shown that active injection drug use appears to be the main factor in decision making to administer antiretroviral therapy (ART). Delaying ART therapy was related proportionally to both CD4+ cell count and raised frequency of injecting [19]. In Isfahan province, special services for all HIV/AIDS patients are provided exclusively at VCT, and ART is offered according to national guidelines, regardless of whether they are addicted to intravenous drug injections or not.

Conclusions

In our study, outpatient and inpatient utilization rates in HIV/AIDS patients were greater than in general population. The utilization of specific health services for HIV/AIDS patients in integrated primary health care system was as sufficient as mentioned in national goals.

Limitation

Because of the scope of provincial cities and high population, every HIV/AIDS patients could not obtain timely service. In addition, the access to all files was not possible. The patients who were suffering from chronic illnesses simultaneously, those who were in very low socioeconomic status, and patients who were in prison or had immigrated were not studied.

Ethical approval

This study was approved by the Isfahan University of Medical Sciences ethics committee with code "Ir.mui.rec.1396.3.586".

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Conflict of interest

The authors declare no conflict of interest with respect to the research, authorship, and/or publication of this article.

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