EPIDEMIOLOGICAL STUDIES ON HIV/AIDS IN TÜRKİYE: A REVIEW

Türkiye'de HIV/AIDS ile ilgili epidemiyolojik çalışmalar: Bir derleme

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Abstract

Human Immundeficiency Virus(HIV), Acquired Immune Deficiency Syndrom(AIDS) is a major public health problem continues to affect millions of people all over the world. An average of 79.3 million people died from HIV-related causes since the start of the epidemic. HIV has many different routes of transmission, and the frequency of transmission and the most common mode of transmission varies in different parts of the world. In Turkiye, there have been changes in epidemiological data on HIV over the years. This is a c review paper. The published studies on HIV/AIDS and reportes in Turkiye were reviewed. The aim of this review is to analyze epidemiologic publications since the first case was seens in Turkiye on HIV/AIDS and to determine the studies quantity and quality to explore mode of transmission of HIV in the country. All publications published between 1985 and 2022 were reviwed. 756 studies were identified and 54 original articles, guidelines, reports and symposium presentation were included. The types of researches, the number of participants, the participant groups, study location, gender and mode of transmission were examined. HIV/AIDS prevelance is increasing. The mode of transmission is common through heterosexual transmission and men who have sex with men transmission mode is increasing. It was seen that there were not enough large-scale studies at the national level. Further studies on HIV/AIDS should be conducted as national level or multicenter.

Keywords: Epidemiology, HIV, AIDS, mode of transmission, Türkiye.

Özet

İnsan Bağışıklık Yetmezliği Virüsü (HIV), Edinsel Bağışıklık Yetmezliği Sendromu (AIDS) tüm dünyada milyonlarca insanı etkilemeye devam eden büyük bir halk sağlığı sorunudur. HIV epidemisinin başından beri HIV ilişkili nedenlere bağlı olarak yaklaşık 79,3 milyon insan hayatını kaybetmiştir. HIV'in birçok farklı bulaşma yolu vardır, bulaşma sıklığı ve en yaygın bulaşma şekli dünyanın farklı yerlerinde farklılık gösterir. Türkiye'de HIV ile ilgili epidemiyolojik verilerde yıllar içinde değişiklikler olmuştur. Bu çalışma bir derleme çalışmasıdır. Türkiye'de HIV/AIDS konusunda yayınlanmış çalışmalar ve raporlar gözden geçirilmiştir. Bu derlemenin amacı, Türkiye'de HIV/AIDS ile ilgili ilk vakanın görülmesinden bu yana epidemiyolojik yayınları analiz etmek ve ülkedeki HIV bulaşma şeklini araştırmak için yapılan çalışmaların niceliğini ve niteliğini belirlemektir. 1985-2022 yılları arasında yayınlanan tüm yayınlar gözden geçirilmiş,756 çalışma belirlenmiş ve 54 özgün makale, kılavuz, rapor ve sempozyum sunumuna yer verilmiştir. Araştırma türleri, katılımcı sayıları, katılımcı grupları, çalışma yeri, cinsiyet ve bulaş yolları incelenmiştir. HIV/AIDS prevalansı artmaktadır. Heteroseksüel yolla bulaş şekli yaygındır ve erkeklerle cinsel ilişkiye giren erkekler yolu ile bulaş şekli artmaktadır. Ulusal düzeyde yeterince büyük ölçekli çalışmaların olmadığı görülmüştür. HIV/AIDS konusunda ulusal düzeyde veya çok merkezli olarak daha ileri çalışmalar yapılmalıdır.

Anahtar kelimeler: Epidemiyoloji, HIV, AIDS, bulaş yolları, Türkiye.

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Introduction

The Human Immunodeficiency Virus (HIV) is an enveloped Retrovirus. The virus causes a chronic disease characterized by Acquried-Immunodeficiency Syndrome (AIDS) , which progresses with opportunistic infections as a result of suppression of the immune system (1). HIV was first identified in the 1980s. There are two types identified so far, HIV-1 and HIV-2 (2). HIV which is a major public health problem continues to affect millions of people all over the world. It is estimated, that 79.3 million [55.9 million–110 million] people have become infected with HIV to date (3). According to World Health Organization (WHO) by the end of 2020, there were close to 37.7 million [30.2–45.1 million] people in the world with HIV (4). It has caused frightening deaths since the day it was first described. An average of 79.3 million people died from HIV-related causes since the start of the epidemic and 680 000 [480 000–1.0 million] people died in 2020 only (5). Figures show HIV/AIDS continues to pose serious public health problem in the world.

HIV has many different routes of transmission, and the frequency of transmission and the most common mode of transmission varies in different parts of the world.

While HIV incidence rates remain limited in many countries in Western Europe and North America, most countries in Africa, Eastern Europe and Central Asia is seen increase in the number of new infections in the past years (6).

HIV especially in high income countries thanks to new antiretroviral therapy is seen a chronic disease (7). Against this, it still has a high mortality rate in underdeveloped countries (8). Deaths occur prominently in sub-Saharan Africa (9).

Everyday people acquire HIV in various ways. Blood transmission, sexual transmission and maternal-fetal transmission are the main sources for the spread of HIV. In America and western/central Europe HIV is largely spread by gay men and other men who have sex with men. The other regions of the world remaining groups are the most often reason of distribution for HIV infection (9).

In Türkiye, the first AIDS case was seen in 1985 and HIV infection must be reported (10). According to data from The Ministry of Health of Türkiye, there are 29,284 HIV positive people and 2,052 AIDS cases from 1985 to November 2021. 81.2% of the cases are men, 18.8% are women, and 16% are foreign nationals. The age group with the highest incidence of cases is 25-29 and 30-34 age groups (11). In line with the data in Eastern Europe, the number of cases is increasing every year except for the last two years. Considering examples from other countries this decrease in new diagnoses in the last two years may be associated with the COVID-19 pandemic (12,13). The aim of this review is to analyze epidemiologic publications on HIV/AIDS since the first case was seens in Türkiye and to determine the studies quantity and quality to explore mode of transmission of HIV in the country.

Material and Method

Articles published on HIV from Türkiye were reviewed in detail. Literature searches were conducted by using the PubMed database, ScienceDirect database and ULAKBIM the local database of Türkiye; and were limited to articles written in English and Turkish. Only publications from Turkiye are included.

The search word combinations used to search the knowledge base included “HIV”, “AIDS”, “epidemiology”, “prevalence”, “mode of transmission” “incidence rate” and “Türkiye”.

The titles and abstracts of these articles published from 1985, when the first case was seen in Türkiye, to April 15, 2022,

were reviewed to find out which studies met our inclusion criteria. Full-length articles that met our inclusion criteria were selected and then only those articles were reviewed. The database review was conducted from March 15, 2022, to April 10, 2022. Only original research articles, reports and guidelines were included. Case reports, reviews and clinical trials were excluded. Among the studies conducted in the form of community, donor or health worker screening, studies with a minimum of 100 cases were included.

At first, the search process using the search words yielded. 756 publications were detected from relevant search databases. 702 publications that did not contain epidemiological data, did not meet the inclusion criteria, were duplicated and their full texts could not be reached were excluded.

Out of these 54 selected articles, 49 were original publications and two were guidelines, one was symposium presentation and two were reports determined that were then used for our analysis. Information was gathered such as study design (retrospective/prospective study), study period, study location, study population and age of sample, prevalence rate, transmission types, sex, age groups and case number.

Statistical anaylsis

The publication year, study population, location, design such as cross-sectional, cohort study and case series etc, and the findings of the study were recorded to excell program then analyzed in the same program.

Results

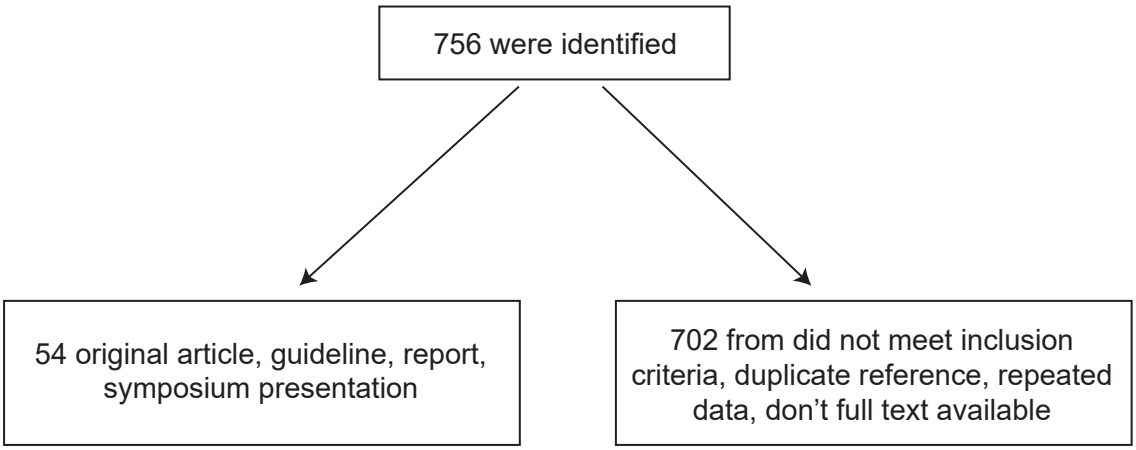

Figure 1: Flow diagram for the process of review of the literature.

Table 1: Descriptive analysis.

Study type	The number of participants	Participants group	Study location	Gender Study with HIV patients
42 cross sectional studies	≥10.000 15 study	General population: 21	Across the country:6	Mean:7 study (5-36)
2 guidelines	5000-9999 1 study	Patients with HIV: 30	in Istanbul: 15	Median:4 study(36-45)
3 descriptive studies	1000-4999 7 study	Pregnant population:1	in Ankara: 6	Range:10 study
2 reports	≤999 26 study	Using drug: 1	in Izmir: 3	
2 prospective cohort studies		Pediatric population: 1	Regional :1	
1 case series			Multicenter:1	
1 retrospective cohort study				
1 symposium presentation				

The types of research, the number of participants, the participant groups, study location and gender are given in Table 1. The most common type of study was the cross-sectional study with 42 (77.7%) studies while four studies were carried out prospectively in our studies. In terms of the number of participants, 48.1% of the studies had less than 1,000 participants while studies with 10,000 and higher participants were 27.7% of all studies. The majority of studies (55.5%) were conducted on HIV-infected groups. The number of studies conducted with the childhood age group and using drug groups is only one. The majority (85.1%) of the studies were conducted in a single center.

For the studies on HIV-infected groups were examined in terms of age group; mean value was given in seven studies, median value was given in four studies and the age range in which the infection was most common was given in 10 studies. There was no age-related information in 31 publications.

Table 2: Mode of transmission.

	Number of Studies	Percentage lowest - highest
Heterosexual	20	31% - 92.6%
Men Who Have Sex with Men (MSM)	1	4.3%- 54.3%
Unknown	2	7% - 48.6%
Vertical	1	72%

The transmission routes and the highest-lowest rates found in the studies were given in Table 2. The most common mode of transmission of the HIV virus was mostly found to be heterosexual in the studies. Heterosexual transmission was the most common transmission (83.3%). In studies the highest rate of heterosexual transmission was 92.6% while the lowest was 31%. In the 2019 guide of The Ministry of

Health of Türkiye, it was stated that the most common group in terms of transmission route was the unknown group. Only one study identified Men Who Have Sex with Men (MSM) as the most common mode of transmission.

Prevalence data were reported in 23 of the 54 studies and incidence data were reported in only one study. The first scientific paper on HIV/AIDS was published in 2003. Considering the number of publications by years, it was determined that 2019 was the first and 10 studies were published in 2019.

Discussion

Although incidence and mortality rates are decreasing worldwide thanks to various treatment methods HIV infection still continues to be a global public health problem (6). The similar to Eastern European countries, according to the data of The Ministry of Health of Türkiye number of newly diagnosed cases has increased in our country (11, 14). Only in 2020 and 2021, the number of newly diagnosed cases decreased (11). The decrease in newly diagnosed cases in the last two years can be attributed to the worldwide problems experienced in the prevention and control of infectious diseases during the COVID-19 pandemic (12).

In accordance with the data of The Ministry of Health of Türkiye and WHO, the most common mode of transmission among those whose cause is known in the transmission of HIV infection in the publications has been determined as the heterosexual route. However, similar to other research in terms of frequency, MSM tends to increase in Türkiye as well (15, 16). As seen in a study conducted in Ukraine, the real numbers are thought to be higher than the official numbers due to stigmatization and criminalization (17). Therefore, more studies are needed for the accurate evaluation of epidemiological data.

Most of the epidemiological data were collected retrospectively in Türkiye. Studies on the general population are usually in the form of screening studies among people admitted to the hospital or blood donors. An analysis conducted in sub-Saharan Africa also showed that studies were generally conducted on a specific geographically defined population (18). More studies are needed with specific groups such as drug users or sex workers, who are at high risk for transmission of infection. In a meta-analysis conducted in the USA, it has been shown that the prevalence is higher in such a risky population (19).

Researches were mostly conducted in a single center. Multicenter coordinated studies are needed in terms of the quality and generalizability of the data.

Unlike a systematic review examining studies from the South African region, it was seen that most of the publications covered the age group > 18 years (20). Considering the decrease in the age of starting drug use and starting sexual intercourse, we think that further studies should be conducted among groups under the age of < 18 years especially, adolescent groups (21, 22)

Conclusions

The majority of the study design was cross-sectional and used secondary data from hospitals. Only six studies were conducted as a national level the other studies were done as state-level or hospital-based. Most of the study was carried out among the general population only a few studies have been conducted on vulnerable groups such as pregnant women, children and intravenous drug users. It was found that heterosexual transmission was the most common transmission route of HIV, but the frequency of transmission via MSM increased in the country. Further studies on HIV/AIDS should be conducted as national level or multicenter.

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