



Share-Net
Jordan

The Knowledge Platform on
Sexual and Reproductive Health
and Reproductive Rights



Fact Sheet

Sexually Transmitted Infections and Diseases in Jordan

Revised version

2024



Introduction

Scientists have agreed to define sexually transmitted infections (STIs) as a group of diseases in which sexual contact plays the primary role in transmission. While some (STIs) can be transmitted through non-sexual routes, such as Human Immunodeficiency Virus (HIV) or syphilis through blood (blood transfusions, contaminated medical devices, and needles), or from an infected mother to her fetus through the placenta, sexual intercourse remains the main mode of transmission. The term "sexually transmitted diseases (STDs)" has been given to this group of diseases, emphasizing the mode of transmission. In the West, they were called venereal diseases after Venus (the goddess of love), a name that may be poetic but far from the intended meaning. Finally, medicine adopted the term "sexually transmitted diseases"¹.

The Centers for Disease Control and Prevention (CDC) in the United States² distinguishes between the terms sexually transmitted infections (STIs) and sexually transmitted diseases (STDs). An STI is a virus, bacteria, fungus, or parasite that can be contracted through sexual contact. Many STIs have no symptoms, so a person can be infected without showing any clear signs of disease. These STIs can persist for a long time without symptoms and can therefore be transmitted unknowingly during sex or pregnancy. An STD, on the other hand, means the development of an STI and that the infection has caused some symptoms of the disease. People sometimes use the terms interchangeably, but the primary goal of public health and healthcare is to prevent and treat infections before they develop into diseases.

The prevalence of STIs in many countries has reached alarming levels. Unless these diseases are recognized as a major public health problem, resources allocated for monitoring and studying them will remain limited. Consequently, these diseases will not be studied and controlled adequately, increasing the risk of their spread.

Prevention and control of sexually transmitted infections is an integral part of comprehensive sexual and reproductive health services needed to achieve Sustainable Development Goal 3, which calls for "ensuring healthy lives and promoting well-being for all at all ages," including Goal 2.3 "ending preventable deaths of newborns and children under 5 by 2030"; Goal 3.3 "ending the AIDS epidemic and other infectious diseases by 2030"; Goal 4.3 "reducing premature mortality from non-communicable diseases and promoting mental health and well-being"; Goal 3.7 "ensuring universal access to sexual and reproductive health services"; and Goal 3.8 "achieving universal health coverage."

In line with the Higher Population Council (HPC) and Share-Net Jordan's commitment to fostering an environment that promotes sexual and reproductive health and rights in Jordan, and within the framework of Jordan's efforts to achieve Sustainable Development Goal 3 by 2030, and in alignment with the objectives of the National Strategy for Sexual and Reproductive Health 2020-2030, the HPC presents this fact sheet on sexually transmitted infections (STIs) and their control. The aim is to raise awareness about the importance of STI control and reduce their prevalence among the population, considering them a crucial aspect of promoting sexual and reproductive health for all individuals in Jordan. This will be achieved through providing evidence-based information and knowledge.

¹ Abdel Rahim Abdullah, *Sexually Transmitted Diseases*, Dar Al Shorouk, Egypt, 2009.

² <https://www.cdc.gov/std/general/default.htm>



1. Sexually Transmitted Infections (STIs)

According to a fact sheet prepared by the World Health Organization (WHO)³ STIs are caused by more than 30 types of bacteria, viruses, and parasites. They are often spread through sexual contact, including vaginal, anal, and oral sex. Many STIs, including chlamydia, gonorrhea, hepatitis B, HIV, human papilloma-virus (HPV), herpes simplex virus (HSV) type 2, and syphilis, can also be transmitted from mother to child during pregnancy and childbirth. STIs can cause a range of signs and symptoms, or they may not cause any symptoms at all. When symptoms do occur, common ones are documented in the following figure :

Symptoms of sexually transmitted diseases

Men	Women
<ul style="list-style-type: none">– Pain during urination or intercourse– Discharge from the penis or anus– Blisters, sores, or warts in the genital or anal area– Pain in one or both testicles– Anal discharge	<ul style="list-style-type: none">– Pain during urination or intercourse– Unusual vaginal discharge or vaginal bleeding– Yellow, green, or bloody vaginal discharge with a strong odor– Itching in the vulva, vagina, or pubic hair– Blisters, sores, or warts on the genitals or anus

Mansoura Students' Scientific Association **SCORA** Sexual & Reproductive Health and Rights including HIV & AIDS

The Mayo Clinic website⁴ has documented factors that may increase the risk of contracting sexually transmitted infections (STIs) as follows:

- Unprotected sex: This includes vaginal, anal, or oral sex without condoms or dental dams.
- Having multiple sexual partners also increases risk.
- Previous STI diagnosis: If you've had an STI before, you're more likely to contract another.
- Coerced sexual activity: Sex under pressure or force raises STI risk.
- Substance abuse: Alcohol and drugs can impair judgment and increase risky behavior.
- Injecting drugs: Sharing needles is a major risk factor for HIV, hepatitis B, and hepatitis C.
- Young age: People aged 15-24 are more susceptible due to biological and behavioral factors.

³ World Health Organization, sexually transmitted infections: Evidence brief, WHO/RHR/19.22 © World Health Organization 2019, <https://iris.who.int/bitstream/handle/10665/329888/WHO-RHR-19.22-eng.pdf?sequence=1>

⁴ <https://www.mayoclinic.org/ar/diseases-conditions/sexually-transmitted-diseases-stds/symptoms-causes/syc-20351240>

- **Mother-to-child transmission:** Certain sexually transmitted infections (STIs) - such as gonorrhea, chlamydia, HIV, and syphilis - can be passed from an infected mother to her child during pregnancy or childbirth. STIs in infants can cause serious health problems or even death.

The documented ways to prevent sexually transmitted infections (STIs) are as follows:

- **Practice safe sex and limit the number of sexual partners**
- **Get vaccinated:** Vaccines are effective in preventing certain types of STIs, such as HPV, hepatitis A, and hepatitis B. These vaccines can help protect you and your partner(s).
- **Avoid alcohol and drug use:** Substance abuse can impair judgment and increase risky behavior, such as having unprotected sex or multiple sexual partners.
- **Consider male circumcision:** For men, studies have shown that circumcision can reduce the risk of contracting HIV from an infected partner by up to 60%. It may also help protect against genital HPV and herpes.
- **Pre-exposure prophylaxis (PrEP):** The FDA has approved two medications for PrEP to reduce the risk of HIV infection in people at high risk. PrEP is taken as a daily pill.

The World Health Organization's Guidelines⁵ for the Management of Sexually Transmitted Infections with Symptoms [1] considers sexually transmitted infections (STIs) to be a major global public health problem, affecting quality of life and causing serious illness and death. STI-related illness has a profound impact on the physical, mental, and social health of children, adolescents, and adults worldwide. Some STIs directly affect reproductive health and child health by causing infertility, anogenital cancer, adverse pregnancy outcomes, stillbirths, birth defects, and general ill health.

In addition, they have indirect effects through their role in facilitating the transmission and acquisition of HIV through sexual contact, leading to further suffering among people living with HIV, such as associated mental health conditions, including depression, anxiety, dementia, and other cognitive disorders; and other comorbidities experienced by people living with HIV.



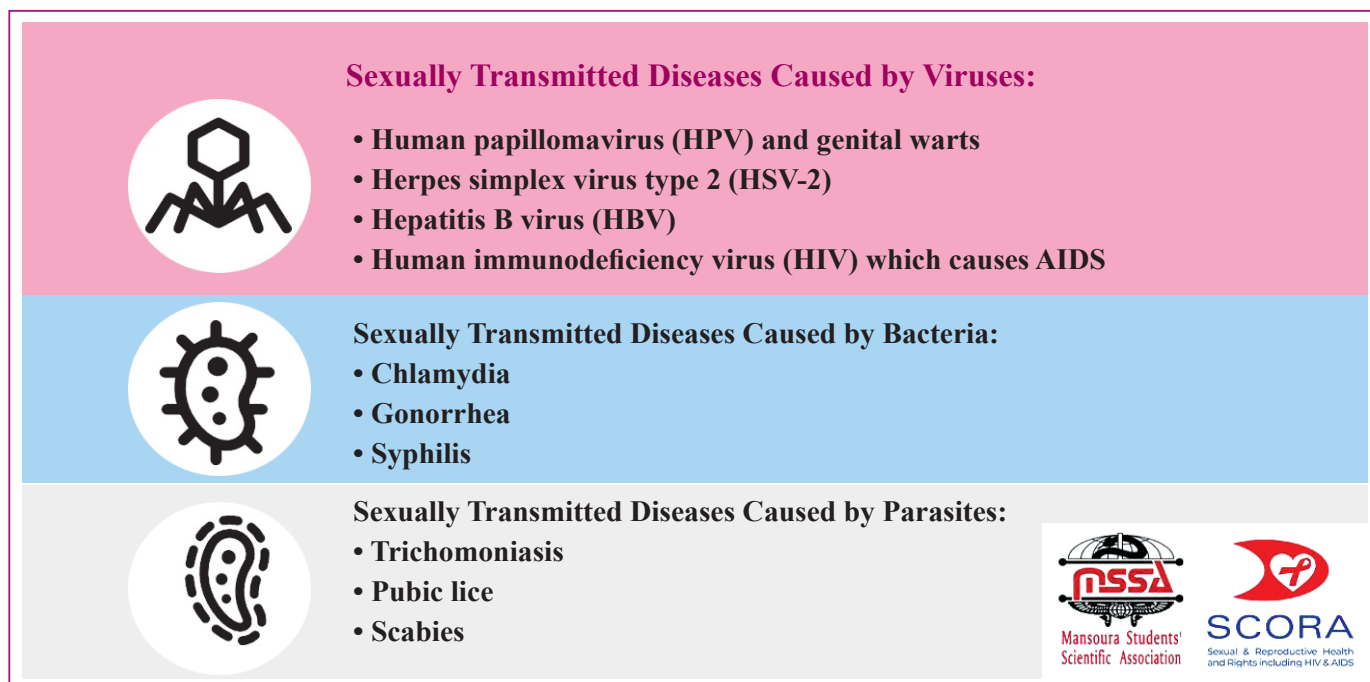
2. Sexually Transmitted Diseases (STDs)

Sexually transmitted diseases (STDs) are caused by sexually transmitted infections (STIs) and are considered a progression of them. Eight of the more than 30 known causes of diseases transmitted through sexual contact have been linked to the highest rates of disease. Of these eight, four are currently curable: syphilis, gonorrhea, chlamydia, and trichomoniasis. The other four are viral infections and are not curable, but can be alleviated or modified through treatment: hepatitis B virus, herpes, HIV,

⁵ World Health Organization 2021, Guidelines for the management of symptomatic sexually transmitted infections, <https://www.who.int/publications/i/item/9789240024168>

and human papillomavirus (HPV). The following figure shows the most prominent sexually transmitted diseases according to the three causative factors.

Figure (2) Sexually Transmitted Diseases by Causative Factors (Virus, Bacteria, Parasites)



Common Viral Infections:

• Genital Herpes

According to the Mayo Clinic website⁶, this condition is caused by two types of viruses: Herpes Simplex Virus Type 1 (HSV-1) and Herpes Simplex Virus Type 2 (HSV-2). Genital herpes is often spread through direct physical contact during sexual intercourse. Symptoms may be very mild or absent in some infected individuals, making them unaware of their infection. Others may experience pain, itching, and sores around the genital area, anus, or mouth. There is no cure for genital herpes. Symptoms can recur, but medication can be used to alleviate symptoms and reduce the likelihood of transmitting the infection to others. Infection with HSV-2 also increases the risk of acquiring and transmitting HIV to others.

• Human Papillomavirus (HPV)⁷

HPV is a common sexually transmitted infection spread through skin-to-skin contact during sexual activity. Over 200 HPV types exist, and most sexually active individuals will contract it at some point without experiencing symptoms. HPV can affect the skin, genitals, and throat. While most cases resolve on their own, some HPV infections cause genital warts, and certain strains can lead to abnormal cell growth that may develop into cancer. Vaccines can prevent HPV-related cancers, with cervical cancer being the most common type. Currently, there is no cure for HPV infection, but treatments are available for genital

⁶ <https://www.mayoclinic.org/ar/diseases-conditions/genital-herpes/symptoms-causes/syc-20356161>

⁷ <https://www.who.int/ar/news-room/fact-sheets/detail/human-papilloma-virus-and-cancer>

warts, and non-cancerous lesions such as those that may develop into cervical, vaginal, anal, penile, or oropharyngeal cancer can be removed through excision (freezing or heating) or surgery.

• **Acquired Immunodeficiency Syndrome (AIDS)**⁸

AIDS occurs when HIV infection weakens the immune system. HIV primarily spreads through unprotected sex (vaginal, anal, or oral) and sharing contaminated needles or sharp instruments. It can also be transmitted from an infected mother to her child during childbirth or breastfeeding. There is no cure for HIV infection. However, with advancements in prevention, diagnosis, and treatment, including for opportunistic infections, HIV infection has become a manageable chronic condition, allowing HIV-positive individuals to live long and healthy lives.

• **Hepatitis B**

Hepatitis B is a liver infection caused by the hepatitis B virus (HBV). It can be transmitted through unprotected sex, sharing contaminated needles, or from an infected mother to her child during childbirth. Most people do not experience any symptoms when they are first infected, but it can cause abdominal pain, fatigue, jaundice, loss of appetite, and abdominal pain.

Bacterial Diseases :

Chlamydia⁹

Chlamydia is one of the most common sexually transmitted infections (STIs) affecting both men and women. It is caused by the bacterium *Chlamydia trachomatis*. Most people with chlamydia infection do not experience any symptoms or only have mild symptoms. If symptoms do occur, they may not appear until three weeks after sex with someone who has chlamydia. Common symptoms in women include changes in vaginal discharge, bleeding between periods or after sex, pain or discomfort in the lower abdomen, and burning sensation when urinating. Common symptoms in men include a “burning sensation when urinating, discharge from the penis, and pain or discomfort in the testicles. If left untreated, chlamydia can cause serious problems, including infertility and ectopic pregnancy. In pregnant women, it can cause premature birth (preterm labor) and also increases the risk of acquiring HIV.

Gonorrhea¹⁰

Gonorrhea is another common STI caused by the bacterium *Neisseria gonorrhoeae*. Like chlamydia, gonorrhea can occur without symptoms. If left untreated, it can lead to serious complications such as

⁸ <https://www.who.int/ar/news-room/fact-sheets/detail/hiv-aids>

⁹ <https://www.who.int/ar/news-room/fact-sheets/detail/chlamydia>

¹⁰ <https://www.who.int/ar/news-room/fact-sheets/detail/multi-drug-resistant-gonorrhoea>

and human papillomavirus (HPV). The following figure shows the most prominent sexually transmitted diseases according to the three causative inflammatory disease (PID) and infertility in women. Additionally, it can cause a serious complication called disseminated gonococcal infection (DGI), which can affect the joints, skin, and heart.

Syphilis¹¹

Syphilis is a bacterial infection that is transmitted through oral, vaginal, and anal sex, during pregnancy, and through blood transfusion. It is caused by the bacterium *Treponema pallidum*. Many people with syphilis do not experience any symptoms or notice them. The disease has three stages, each with different symptoms. In the early stages, painless, usually solid sores appear on the genitals, rectum, or other areas, and it progresses to the secondary stage if untreated. Secondary syphilis includes a non-itchy rash, usually on the palms of the hands and soles of the feet, and white or gray lesions in warm areas of the body. The third stage is the disease's progression after years if left untreated, leading to brain, heart, and vascular diseases, among other conditions.

Parasitic Infections¹²

Here are some examples:

- **Trichomoniasis:** This type of sexually transmitted disease is caused by a parasite called *Trichomonas vaginalis*. Symptoms can include vaginal discharge, itching, and painful urination. If left untreated, it can lead to serious complications such as pelvic inflammatory disease (PID) and increase the risk of HIV transmission. It is estimated that around 270 million new cases occur globally each year.
- **Pubic Lice (Crabs):** These are small parasitic insects that can infest pubic hair. They can be transmitted through sexual contact and can cause itching, redness, and small bites on the skin. Pubic lice can be treated with over-the-counter medications or prescription medications from a doctor.
- **Scabies:** Scabies is caused by a tiny mite called *Sarcoptes scabiei* and is transmitted through skin contact, including sexual contact. Symptoms include intense itching, especially at night, and a rash with small red bumps. Scabies can be treated with prescription medications.



3. Global and Regional Scope of the Problem

Treatable Diseases

The World Health Organization (WHO) provides global and regional¹³ estimates of the prevalence and incidence of four of the most common and treatable sexually transmitted infections (STIs) among

¹¹ <https://www.who.int/ar/news-room/fact-sheets/detail/syphilis>

¹² <https://araphily.com/?p=12136>

¹³ <https://www.who.int/data/gho/data/themes/topics/global-and-regional-sti-estimates>

adults aged 15 to 49 years every four years. According to the WHO's 2020 estimates, there were 374 million new cases of the following four STIs: chlamydia (129 million cases), gonorrhoea (82 million cases), syphilis (7.1 million cases), and trichomoniasis (156 million cases). The number of cases varies by region. The Americas lead in the number of syphilis cases (2.48 million), followed by Africa (2.22 million). For chlamydia, the Western Pacific region has the highest number of cases (32.16 million), followed by the Americas (29.78 million) and Africa (23.30 million). The Western Pacific region also leads in the number of gonorrhoea cases (23.15 million), followed by the Southeast Asia region (21.06 million) and Africa (19.24 million). In terms of trichomoniasis, Africa has the highest number of cases (51.23 million), followed by the Americas (32.39 million) and the Western Pacific region (29.06 million).

The incidence rate per thousand population aged 15-49 indicates that the Americas have the highest incidence rate of syphilis (5.0 for males and 4.6 for females). The Americas also have the highest incidence rate for chlamydia (48 for males and 68 for females). Africa has the highest incidence rate for gonorrhoea (37 for males and 34 for females). For trichomoniasis, Africa leads with the highest incidence rate (103 for males and 87 for females).

In the Eastern Mediterranean region, the incidence rates per thousand population for syphilis, chlamydia, gonorrhoea, and trichomoniasis are 1.6 for males and 1.7 for females, 42 for males and 39 for females, 16 for males and 12 for females, and 38 for males and 37 for females, respectively.

Table 1: Incidence rates of four sexually transmitted infections among adults (15-49 years) per 1000 by WHO regions and gender (male-female) in 2020

Region	Syphilis (<i>Treponema pallidum</i>) Male - Female	Chlamydia (<i>Chlamydia trachomatis</i>) Male - Female	Gonorrhoea (<i>Neisseria gonorrhoeae</i>) Male - Female	Trichomoniasis (<i>Trichomonas vaginalis</i>) Male - Female
Africa	4.1 - 4.1	40 - 46	37 - 34	103 - 87
Americas	5.0 - 4.6	48 - 68	21 - 17	63 - 63
Eastern Mediterranean	1.6 - 1.7	42 - 39	16 - 12	38 - 37
Europe	0.6 - 0.6	27 - 31	11 - 7	14 - 14
Southeast Asia	0.3 - 0.3	12 - 16	21 - 17	22 - 20
Western Pacific	1.2 - 1.2	29 - 38	27 - 20	30 - 29
World	1.8 - 1.8	29 - 36	23 - 19	41 - 38

<https://www.who.int/data/gho/data/themes/topics/global-and-regional-sti-estimates>

Untreatable Infections :

• Hepatitis

Globally, the total number of hepatitis B infections for all ages was 254 million cases in 2022. The Western Pacific and Africa regions had the highest number of cases, with 96.8 million and 64.7 million respectively. The Eastern Mediterranean region recorded 15.2 million cases. Only 13% of people with chronic hepatitis B infection were diagnosed across all regions, and 19.5% of them (7 million people) received antiviral treatment by the end of 2022. Data from 187 countries indicate that the estimated number of deaths from viral hepatitis increased from 1.1 million in 2019 to 1.3 million in 2022. Of these deaths, hepatitis B accounted for 83% while hepatitis C accounted for 17%. Hepatitis B and C infections cause the death of 3,500 people daily worldwide¹⁴.

• Herpes Simplex Virus (HSV)

According to the World Health Organization¹⁵, as of 2016 (the latest available estimates), about 3.7 billion people under the age of 50, or 67% of the global population, were infected with HSV-1 (oral or genital). Most HSV-1 infections occur during childhood. Genital herpes caused by HSV-2 affects an estimated 491 million (13%) people aged 15-49 globally (2016 data). Women are nearly twice as likely to be infected with HSV-2 as men, due to easier transmission from men to women. The prevalence of the infection increases with age, although most new infections occur among adolescents.

• AIDS

As of the end of 2022, an estimated¹⁶ 39 million people were living with HIV. In 2022, there were 630,000 deaths from the virus, and 1.3 million new infections. Africa leads in the number of cases (25.6 million people), accounting for two-thirds of the global total, followed by Southeast Asia (3.9 million) and the Americas (3.8 million). In the Eastern Mediterranean region, there were 490,000 cases. By age and gender, there were 20 million cases among females aged 15 and older, 17.4 million cases among males aged 15 and older, and 1.5 million cases among children under 15.

• Human Papillomavirus (HPV)

Based on a descriptive analysis¹⁷ conducted in 2010, the global prevalence of HPV (all types) among adult women was highest in sub-Saharan Africa (24%), followed by Latin America and the Caribbean (16%), Eastern Europe (14%), and Southeast Asia (14%). It is estimated that HPV caused 620,000

¹⁴ World Health Organization 2024, Global hepatitis report 2024: action for access in low- and middle-income countries, <https://www.who.int/publications/i/item/9789240091672>

¹⁵ <https://www.who.int/ar/news-room/fact-sheets/detail/herpes-simplex-virus>

¹⁶ World Health Organization, Epidemiological fact sheet, HIV statistics, globally and by WHO region, 2023

17 منظمة الصحة العالمية لفحاحات فيروس الورم الحليمي البشري. ورقة موقف صادرة عن منظمة الصحة العالمية (تحديث 2022).

new cancer cases among women and 70,000 among men in 2019. In 2022, cervical cancer was the fourth leading cause of cancer and cancer-related deaths among women, causing about 660,000 new cases and 350,000 deaths worldwide. Cervical cancer accounted for 90% of HPV-related cancers in women.



4. The Current Situation Regarding the Prevalence of Sexually Transmitted Infections in Jordan

First: Prevalence of Sexually Transmitted Infections According to the 2023 Population and Family Health Survey

The prevalence rate of sexually transmitted infections (STIs) among women and men aged 15-49 who have ever had sexual intercourse, based on self-reported STI infections in the last 12 months, was 6.9% among women and 4.2% among men. This rate increases to 4.4% among men when the age group is expanded to 15-59 years. The survey results presented the characteristics of those infected, with the main highlights as follows:

- **Age Distribution of Individuals with STIs.** As shown in Table 2, the prevalence of STIs among females increases with age within the 15-39 age group, rising from 5.8% in the 15-19 age group to 7.8% in the 30-39 age group. For males, the prevalence follows a similar trend within the 15-39 age group but at a lower rate compared to females. This difference might be attributed to the interview circumstances in the survey, such as men's reluctance to disclose their infections to female interviewers. However, the prevalence rate among males aged 50-59 increased significantly to 4.6%.

Table (2): Percentage of females and males aged 15-49 years with a history of sexual intercourse who reported sexually transmitted infections in the last 12 months by age

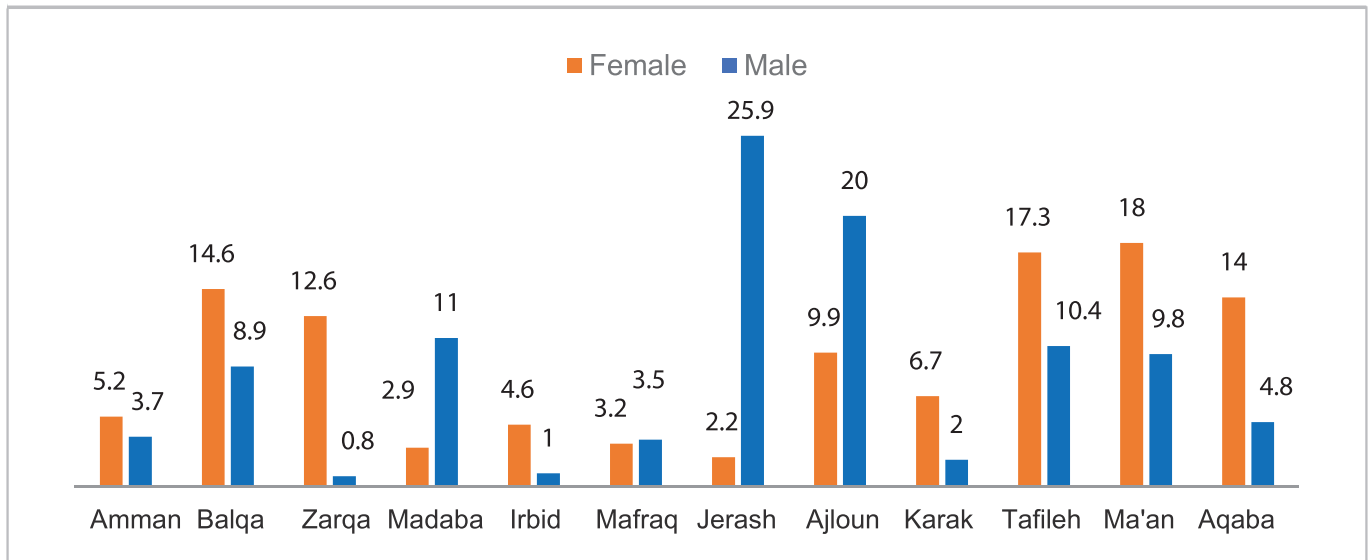
Age Group	Males	Females
15 - 19	0.0	5.8
20 - 24	1.5	6.7
25- 29	7.5	7.7
30 - 39	5	7.8
40 - 49	3.3	5.8
15 - 49	4.2	6.9
15 - 59	4.4	-

¹⁸ The survey question was as follows: "I would like to ask you some questions regarding your health in the past 12 months. During the past 12 months, have you had a sexually transmitted infection?"

• **STI Infections by Governorate**

Figure 3 shows that the highest self-reported STI infection rates among females were in the governorates of Ma'an, Tafila, Balqa, and Aqaba. Among men, the highest self-reported STI infection rates were in the governorates of Jerash and Ajloun. These disparities in infection rates between men and women across different governorates warrant further investigation to understand the underlying causes of these variations.

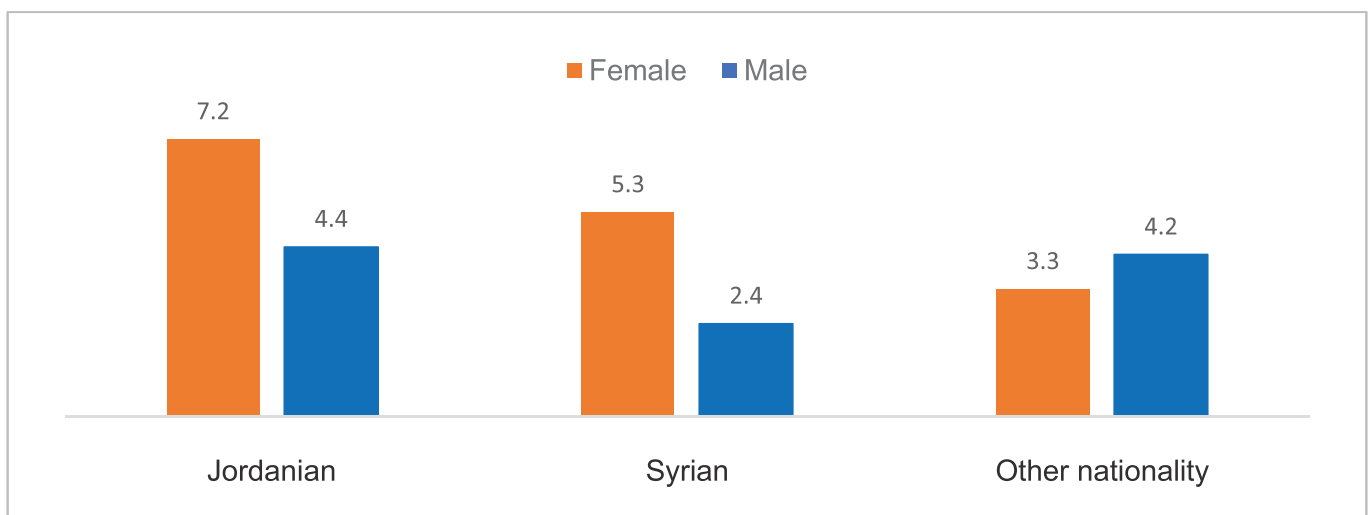
Figure (3) Percentage of women and men aged 15 to 49 years who have had sexual intercourse and reported having sexually transmitted diseases in the past 12 months by governorate.



STI Infections by Nationality

As shown in Figure (4), the rates of infection are higher among Jordanian females compared to females of Syrian and other nationalities. It also increases among Jordanian males compared to males of Syrian nationality.

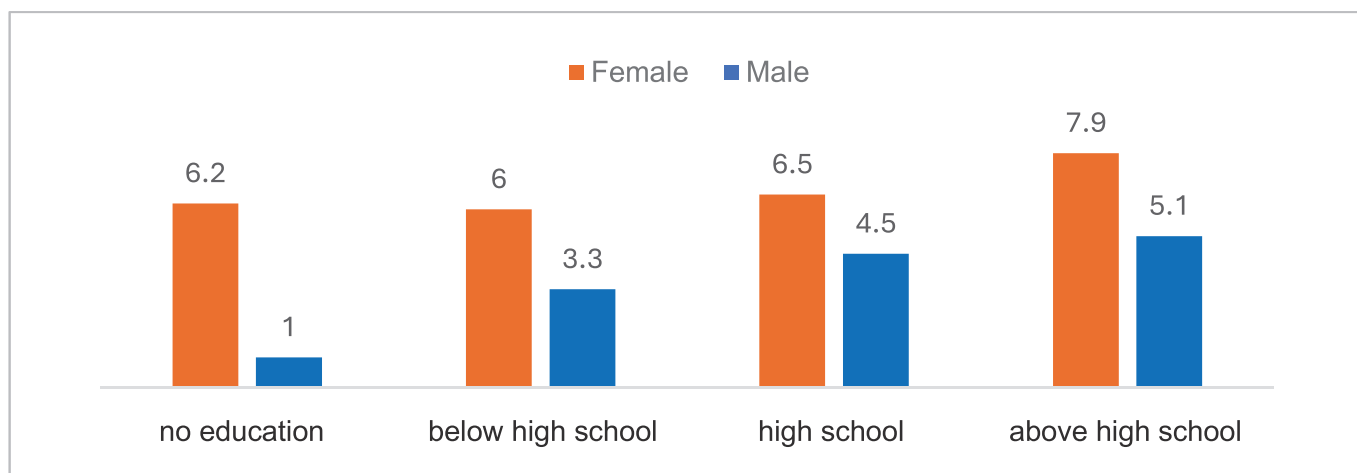
Figure (4): Percentage of females and males aged 15-49 years with a history of sexual intercourse who reported sexually transmitted infections in the last 12 months by nationality



STI Infections by Education Level

Figure 5 shows that the prevalence of sexually transmitted infections (STIs) among individuals with higher education qualifications (above high school) is higher compared to other education levels and also compared to those with no education. This finding warrants further investigation, as one would expect individuals with higher education to have a better understanding of STIs, their transmission routes, and prevention strategies.

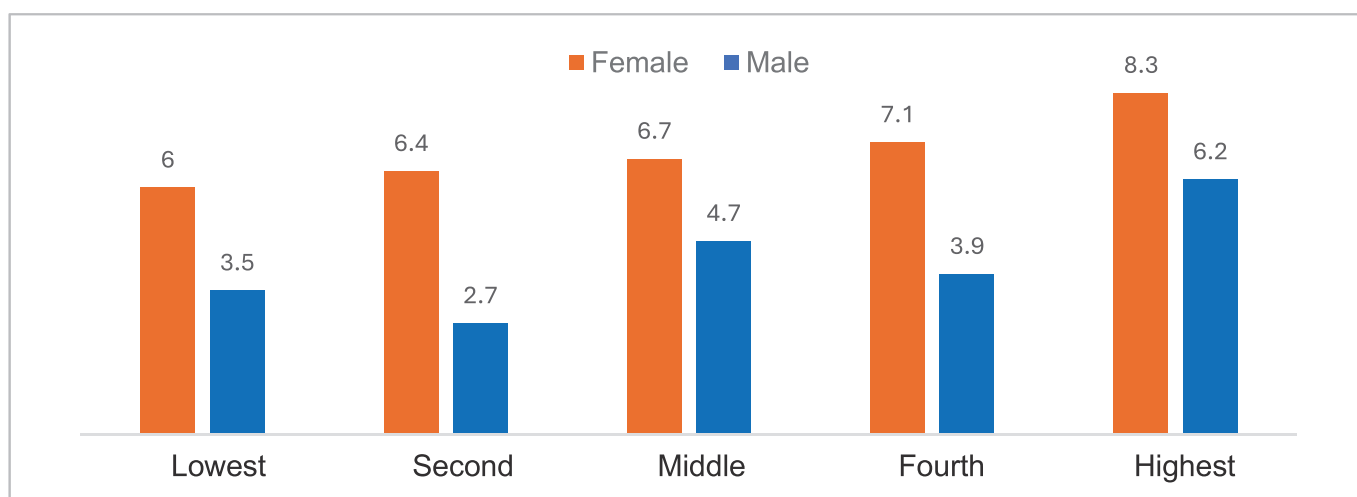
Figure (5): Percentage of females and males aged 15-49 years with a history of sexual intercourse who reported sexually transmitted infections in the last 12 months by education level



Sexually Transmitted Infections by Welfare Level

As illustrated in Figure 6, the prevalence of sexually transmitted infections (STIs) among women increases with rising welfare levels. The STI prevalence among women rises from 6% in the lowest welfare quintile to 8.3% in the highest quintile. This trend is mirrored among men, with the highest STI prevalence observed in the highest welfare quintile compared to the fourth, second, Middle and lowest quintiles.

Figure (6): Percentage of females and males aged 15-49 years with a history of sexual intercourse who reported sexually transmitted infections in the last 12 months by welfare level



Section 2: Prevalence of Sexually Transmitted Infections Based on Laboratory Results

As illustrated in Table (3) of laboratory test results for blood samples from blood donors at Jordan's national blood banks, the prevalence of HIV-1 and HIV-2 infection increased from 0.004% in 2019 to 0.0011% in 2022. Meanwhile, the prevalence of hepatitis B virus (HBV) infection decreased from 0.3% in 2019 to 0.25% in 2022, and the prevalence of syphilis infection decreased from 0.019% in 2019 to 0.014% in 2022. During the period 2019-2022, no cases of cytomegalovirus (CMV) infection (a herpes-virus) were detected in blood donor samples.

Table (3): Percentage of blood donor samples tested positive for infectious markers transmitted through blood transfusion, 2019-2022

Test Type	Test Type	2019	2020	2021	2022
HIV Infection	Anti-HIV I&II	0.004	0.006	0.006	0.011
Hepatitis B	HBsAg	0.3	0.26	0.25	0.25
Syphilis	Syphillis	0.019	0.012	0.014	0.014
Herpes	CMV IgM	0	0	0	0

Source: <https://moh.gov.jo/EchoBusV3.0/SystemAssets/DBB/25TTI%20Markers%20.png>

A study titled¹⁹ "Changing Trends in Serological Prevalence of Blood-Borne Diseases among Blood Donors in Jordan" found that the total number of Jordanians who donated blood or platelets at the King Hussein Cancer Center Blood Bank from 2014 to 2019 was 88,565, while the number of donors at all other national blood banks during the same study period was 1,224,933. All individuals were adults aged 18-60 years. The prevalence of hepatitis B virus (HBV) infection during the study period at the King Hussein Cancer Center was (0.30%, 0.21%, 0.18%, 0.19%, 0.21%, 0.27), while the prevalence according to national blood bank samples was (0.46%, 0.41, 0.40, 0.34, 0.29, 0.30) for the years 2014-2019, respectively. The study concluded that the prevalence of hepatitis B infection among national blood bank donors showed a steady decline between 2014 and 2018, and these rates were significantly lower in Jordan than in neighboring countries.

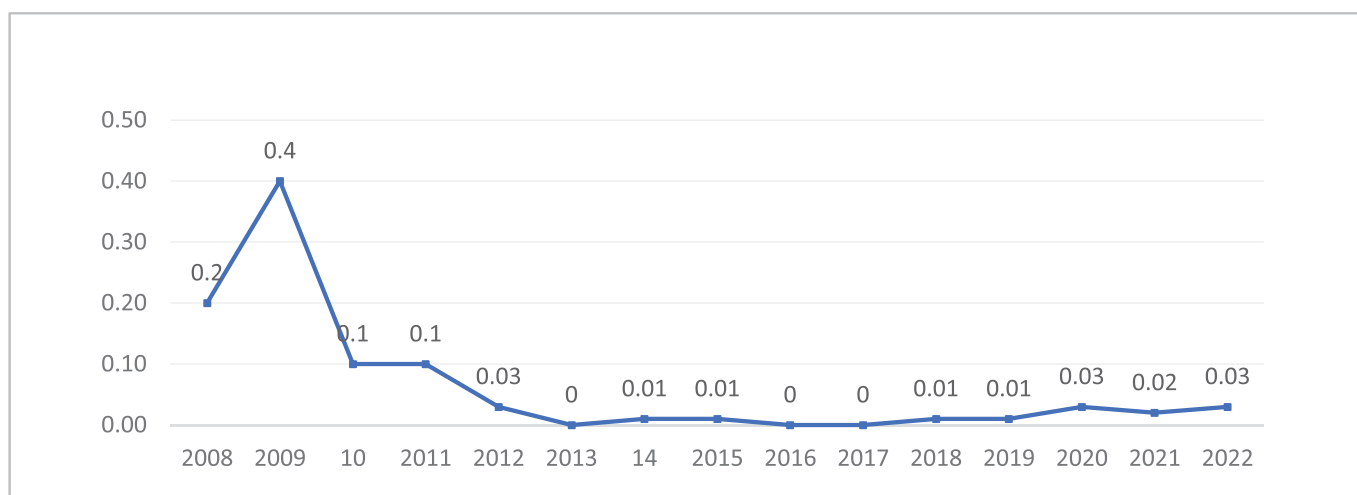
However, there was an increase in the prevalence of hepatitis B infection among blood donors documented in 2019. However, this did not represent a continuous upward trend as shown by the laboratory tests of blood donor samples for the period 2019-2022 in Table (3). National blood bank donor samples

¹⁹ Lina Souan Abstract , Mahmoud Siag, Hala Al-Salahat, Tareq Al-Atrash and Maher A. Sughayer, Changing trends in seroprevalence rates of transfusion-transmitted diseases among blood donors in Jordan, Souan et al. BMC Infectious Diseases (2021) 21:508, <https://doi.org/10.1186/s12879-021-06196-3>

for the years 2019-2022 indicate a downward trend during the period 2019-2022, from 0.3% in 2019 to 0.26% in 2020 and to 0.25% for the years 2021 and 2022.

The study also found no significant differences in HBsAg prevalence rates between donors at the King Hussein Cancer Center Blood Bank and other donors at national blood bank branches in Jordan. The decline in hepatitis B prevalence in Jordan's blood bank may be attributed to the mandatory infant vaccination program that began in 1995, and perhaps to other factors such as increased awareness and proper hygiene practices. This conclusion is supported by the Ministry of Health's statistics in its 2022 Annual Communicable Diseases Report, as shown in the figure.

Figure (7): Hepatitis B prevalence rate per 100,000 population by year



Source: Ministry of Health, Annual Communicable Diseases Report 2022

According to the report of the Blood Bank Directorate affiliated with the Ministry of Health, the results of laboratory tests of blood donor samples in national blood banks showed a decrease in syphilis infection from 0.019% in 2019 to 0.014% in 2022. According to figures from Sawaed Al-Taghyeer Center²⁰, the center discovered around 120 cases of syphilis in 2023 through 4,995 laboratory tests.

According to the latest data²¹ from the World Health Organization (WHO) for 2020, syphilis deaths in Jordan reached 52 deaths or 0.20% of total deaths. The age-standardized death rate due to syphilis was 0.35 per 100,000 population, and Jordan ranks 71st in the world in deaths due to syphilis.

Prevalence of Sexually Transmitted Infections (STIs) in Jordan

A study²² titled "Evaluation of HIV/AIDS Activities in Jordan" presented the number of positive laboratory tests for sexually transmitted diseases detected by Sawaed Al-Taghyeer Center for the years 2017

²⁰ <https://royanews.tv/news/325273>

²¹ <https://www.worldlifeexpectancy.com/jordan-syphilis>

²² Assad Rahhal, Evaluation of HIV/AIDS Activities in Jordan, July 2018, Supported by International Organization for Migration (IOM), Amman

and 2018, as shown in Table (4). The table indicates diverse infections in Jordan, including HIV, syphilis, hepatitis C, gonorrhea, chlamydia, and human papillomavirus (HPV).

Table (4): Results of positive blood tests analyzed by sawaed Al-Taghyeer center for the years 2017 and 2018

Test	2017	2018
Acquired Immunodeficiency Syndrome (AIDS)	9 (4 Jordanians, 2 Syrians, 2 Egyptians, and 1 other nationality)	3 (Jordanians)
Hepatitis B Virus	0	0
Syphilis	13 (10 Jordanians, 1 Syrian, and 2 other nationalities)	5 (3 Jordanians and 2 Iraqis)
Hepatitis C Virus	3 cases (2 Jordanians and 1 Egyptian)	0
Gonorrhea	10 (Jordanians)	4 (Jordanians)
Chlamydia	23 (16 Jordanians and 7 Syrians)	8 (7 Jordanians and 1 Lebanese)
Human Papillomavirus (HPV)	1 (Jordanian)	6 (Jordanians)

Need for STI Screening Programs in Jordan

A 2008 study²³ conducted to determine the prevalence of sexually transmitted infections (STIs) among Jordanian women of reproductive age in order to assess the need for STI screening programs found that the prevalence among symptomatic and asymptomatic women, respectively, was 0.6% and 0.5% for chlamydia trachomatis infection, 0.9% and 2.2% for gonorrhea infection, 0.0% and 0.0% for syphilis infection, and 0.7% and 0.5% for trichomonas infection. These prevalence rates did not differ significantly between symptomatic and asymptomatic women. Based on the low prevalence of detected STIs in this study among Jordanian women, the study questioned the need for screening programs for such infections.

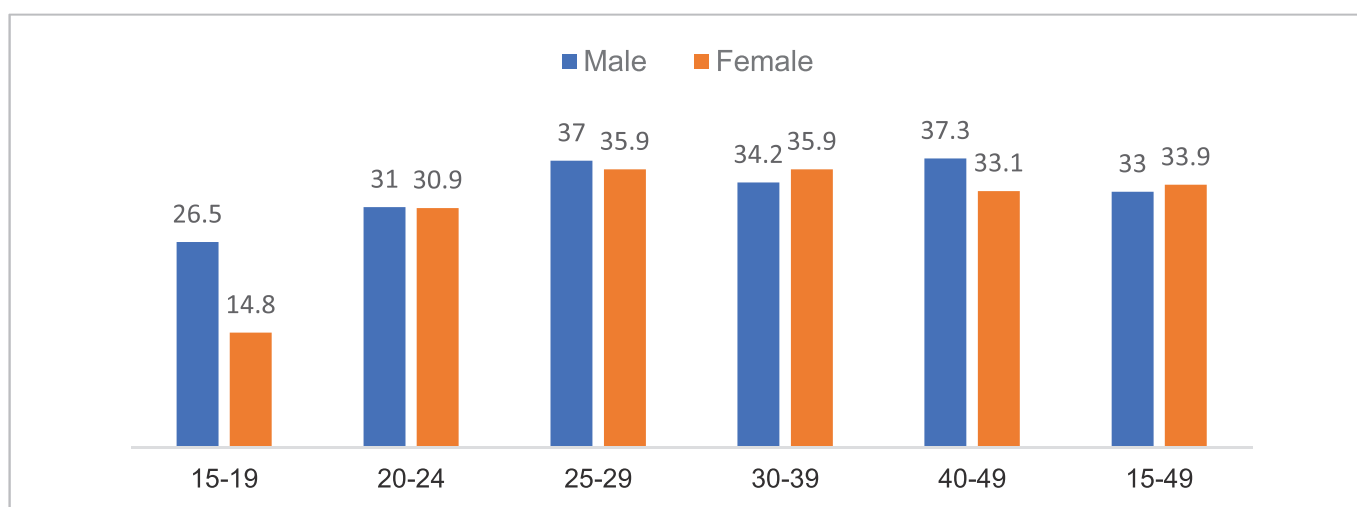
5. Level of Awareness and Comprehensive Knowledge Among the Population About Sexually Transmitted Infections in Jordan

The results of the 2017/2018 Population and Family Health Survey indicate that awareness of STIs, excluding HIV/AIDS, among ever-married men and women aged 15-49 years remains low, as shown in Figure (8). The percentage of men who had ever heard of STIs was 33%, while among women it was 33.9%. Awareness of STIs was lowest among men and women aged 15-19 years, at 26.5% and 14.8%, respectively.

²³ Azmi Mahafzah and others, Prevalence of Sexually Transmitted Infections Among Sexually Active Jordanian Females, Sexually Transmitted Diseases, Vol, pp. 607-610 (4 pages, <https://www.jstor.org/stable/44971020>)

The survey results also showed that awareness among men was lowest in the capital governorate (24.7%), followed by the Jerash governorate (26.2%) and the Mafraq governorate (28.9%). Among women, awareness was lowest in the Mafraq governorate (18.2%), followed by the Balqa governorate (22.6%) and the Irbid governorate (25%). The survey results also showed that the percentage of Jordanian women who know STIs was 34.7%, compared to 24.3% among Syrian women and 35.9% among other nationalities. Among men, the percentage was 33.4% for Jordanians, 29.3% for Syrians, and 30% for other nationalities.

Figure (8) Percentage of men and women who have heard of sexually transmitted diseases other than HIV among those who are married.



A study titled²⁴"Assessment of Knowledge of Sexual Reproductive Health Among Female University Students in Jordan" with a sample of 427 unmarried female students aged 18-25 years from the University of Jordan found that only 26.2% of all participants had adequate knowledge of sexual and reproductive health, and the percentage of those who knew about STIs was 31.4%.

A study²⁵ titled "Knowledge, Attitudes and Practices of Syrian Refugee Mothers Towards Sexually Transmitted Infections" with a sample of 523 Syrian refugee mothers in host communities in Jordan found that the majority of mothers were aware of HIV/AIDS among sexually transmitted infections, with a percentage of (92.1%), followed by bacterial vaginosis (70%), gonorrhea (33.8%), hepatitis B (30%), hepatitis C (25.8%), human papillomavirus (HPV) (20.8%), syphilis (19.6%), and herpes (12.1%). Chlamydia was the least known STI among mothers, with a percentage of (10%).

²⁴ Alkhalili M, Al-Hmaid Y, Kheirallah K, et al. (2024) Assessment of Knowledge of Sexual Reproductive Health Among Female University Students in Jordan. *Cureus* 16(2): e53386. DOI 10.7759/cureus.53386

²⁵ Dua' Al-Maharma, Safadi, and others, Knowledge, Attitudes and Practices of Syrian Refugee Mothers Towards Sexually Transmitted Infections, Volume 11, 2019 - Issue

The study also found that 11.5% of Syrian refugee mothers had a history of STIs. Among these mothers, 11.7% did not seek treatment for STIs for reasons such as not knowing where to go (42.9%), cost (42.9%), embarrassment (28.6%), believing that STI treatment was "ineffective" (14.3%), and fear of not maintaining their privacy (14.3%). Nearly half (46.2%) tried to treat themselves using home remedies and over-the-counter medications or both.

The majority of mothers (88%) who had a history of STIs received treatment and were satisfied with it (80.8%). Nearly half (46.2%) sought treatment at a private clinic or hospital for various reasons, including the ability to afford services themselves (26.9%), proximity (26.9%), availability of health insurance (15.4%), and confidentiality of the service provider (11.5%).

The study concluded that Syrian refugee mothers do not have sufficient knowledge about STIs in general, and especially about the types of STIs and clinical symptoms. This finding is worrisome because knowledge of clinical symptoms is crucial for seeking healthcare services, and delays in treatment can lead to serious consequences. They showed moderate levels of knowledge about preventive measures against sexually transmitted diseases, including condoms, vaccines, abstinence, and having one sexual partner. However, their actual practices for preventing sexually transmitted diseases were poorly implemented. The majority of Syrian mothers and their husbands ignored regular screening for sexually transmitted diseases, especially younger mothers with shorter marriage durations. Similarly, two-thirds of mothers reported that their husbands refused to use condoms during sexual intercourse. A study²⁶ titled "Evaluation of hepatitis B knowledge, practices, and beliefs among the Jordanian population" with a sample of 432 individuals aged 18 years and above in Jordan assessed knowledge through questions focusing on the etiology, signs and symptoms, transmission, treatment, and management of hepatitis B virus infection. The questionnaire scale ranged from 22 (maximum) to 0 (minimum). A score level of.

A score level of less than 13 was considered weak. The study concluded that even though most participants in the study had a university education or higher, their general knowledge regarding hepatitis B virus infection was weak. The study found that the overall average knowledge score regarding hepatitis B symptoms, transmission methods, and treatment was 12.28 ± 3.2 . Seventeen percent (17%) of the sample had never heard of hepatitis B infection before. Their correct answers about the ways to get hepatitis B were satisfactory. On the other hand, most of their answers were incorrect about knowing

²⁶ Bayan Othman, Muna Barakat, Amin Omar¹, Amani Al-Rawashdeh, Yazan Qashou¹, Rafat ZrieqID, Mohammad A. A. Al-NajjarID, Evaluation of hepatitis B knowledge, practices, and beliefs among the Jordanian population: A cross-sectional study, PLOS ONE | <https://doi.org/10.1371/journal.pone.0277186> November 4, 2022

the treatment and whether the disease was curable. Participant knowledge regarding symptoms included nausea, vomiting, and loss of appetite (16.9%). Over 80% of them had good knowledge about the complications of hepatitis B infection.

The study also showed weak knowledge and a low vaccination rate against hepatitis B. It is important to note that the Jordanian Ministry of Health began a mandatory vaccination program for newborns against hepatitis B in 1995.

Although most participants in the study were young (average = 21 years old), which suggests that most, if not all, of them should have received the mandatory vaccination at birth, only five out of ten reported being vaccinated against hepatitis B. Therefore, implementing a comprehensive educational program for the public that highlights the importance of hepatitis B vaccination is crucial. The study found that 64.8% reported schools/universities as the primary source of information, followed by television/internet/social media (63.9%).



6. The reality of preventive and therapeutic services for those infected and at risk in Jordan

The Ministry of Health leads national efforts in providing preventive and therapeutic services in dealing with infections and sexually transmitted diseases in cooperation with national and international institutions and partners such as community organizations, non-governmental organizations, government agencies, international organizations, and the World Health Organization.

- The Directorate of Communicable Diseases/STD Prevention Department at the Ministry of Health has a counseling²⁷ and voluntary testing center for sexually transmitted diseases, providing comprehensive counseling over the phone as well as face-to-face counseling. All inquiries and data are treated with full confidentiality, respecting everyone's dignity without prejudice or the need for personal identification. The department provides counseling services as follows:

- Providing sexual health counseling and education. Educational programs aim to disseminate information about sexually transmitted diseases and prevention methods through the Ministry of Health website - the Communicable Diseases Directorate, and social media channels.
- Voluntary testing for sexually transmitted diseases.
- Providing free tests for everyone.
- Providing the necessary treatment plan for sexually transmitted diseases.

²⁷ <https://moh.gov.jo/Default/Ar>

- The Jordanian Ministry of Health offers a hotline service to answer all questions and inquiries regarding sexually transmitted diseases, testing locations, and treatment. Qualified specialists answer inquiries with complete confidentiality.
- The Ministry of Health's Communicable Diseases Directorate has a specific system for monitoring sexually transmitted diseases in Jordan, mandatory for all health sectors including private sector clinics, to report cases weekly and monthly.
- The ministry provides treatment and medical examinations at specialized clinics for sexually transmitted diseases, including dermatology and reproductive clinics.
- Liaison officers are present in Ministry of Health hospitals across provinces, trained and provided with courses to deal with infected patients.
- The hepatitis B vaccine is provided in Ministry of Health centers and Royal Medical Services hospitals.

Among civil society institutions, Sawad al-Taghyeer Center,²⁸ established in 2012, is a Jordanian non-governmental organization working in the field of HIV/AIDS in cooperation with partners in the public, private, and civil society sectors. It offers services related to HIV/AIDS and sexually transmitted diseases as follows:

- Providing counseling and voluntary testing by managing dialogue with the service applicant about the problem they are facing, aiming to help them make decisions regarding this problem, especially regarding rapid testing for HIV/AIDS and sexually transmitted diseases. This service is based on three principles (confidentiality, privacy, and free of charge).
- Providing medical consultations by contracting with specialized doctors in addiction, psychiatry, and sexually transmitted diseases, as well as through memoranda of understanding with service providers and laboratories in the private sector.
- Providing a hotline to answer citizens' inquiries about these diseases through dedicated phone numbers manned by specialists who answer callers' inquiries about various issues and guide them on how to benefit from the services.
- Sawad has a network of organized relationships with a large number of partners, integrating with them to serve beneficiaries by referring them, whether partners in the public sector or civil society organizations.

²⁸ <https://sawaedjo.org/AR/List/%D8%AE%D8%AF%D9%85%D8%A7%D8%AA%D9%86%D8%A7>

Case management involves listening to beneficiaries, identifying their problems, collaborating with them, and engaging them in developing plans to help them manage their problems and keep them in safe conditions to reduce their exposure to risks and maintain their safety.

- Educational materials are produced and disseminated through various media, whether printed, audio, or visual.

Among foreign organizations, Planned Parenthood Global provides testing and treatment services for sexually transmitted diseases through a health center²⁹ in southern Jordan.

The private sector participates through medical laboratories in conducting tests for sexually transmitted diseases, while specialized clinics for sexually transmitted diseases, including dermatology and reproductive clinics, provide treatment and medical examinations.



7. Key Strategic and Executive Transformations Required for the Elimination of Sexually Transmitted Infections

The World Health Organization (WHO)³⁰ has developed global health sector strategies for sexually transmitted infections (STIs) for the period 2022-2030. It has identified the following key strategic and executive transformations required to eliminate STIs as a public health concern by 2030:

1. Create an environment that enables individuals to speak openly about their sexual health, adopt safer sexual practices, and seek treatment for STIs.
2. Strengthen primary prevention and increase access to STI testing.
3. Increase access to high-quality, people-centered STI treatment interventions provided by public, private, and non-governmental service providers.
4. Integrate STI prevention services into primary healthcare, sexual and reproductive health, family planning, adolescent health, and HIV/AIDS services.
5. Ensure adequate funding for STI prevention services within national health financing mechanisms.
6. Strengthen the capacity of national health information systems to ensure timely collection and analysis of disaggregated data to guide health policies, treatment guidelines, and resource allocation.
7. Support the acceleration of research and development activities on STI prevention technologies, diagnostics, therapeutics, and vaccines.

²⁹ <https://www.plannedparenthood.org/health-center/utah/south-jordan/84095/south-jordan-health-center-3442-91730>

³⁰ منظمة الصحة العالمية، 2022، الاستراتيجيات العالمية لقطاع الصحة بشأن فيروس العوز المناعي البشري (فيروس الإيدز) والتهاب الكبد الفيروسي والعدوى المنقولة جنسيا على التوالي للفترة 2022 - 2030.



Conclusion

- The preparation of this paper revealed a scarcity of national research on the prevalence of sexually transmitted infections and diseases in Jordan.
- The scientific evidence presented in the paper revealed a diversity of STIs in Jordan and a discrepancy in statistics on the number of cases, indicating a general weakness in monitoring cases and weak reporting to official authorities.
- There is still a halo of misconceptions that hinder progress in the field of monitoring and treating sexually transmitted diseases, which calls for strengthening the dialogue on sexual health and raising awareness of its importance in society in general, in order to mitigate the cultural and social barriers that may prevent individuals from seeking diagnosis and treatment from specialists or from seeking information.
- Efforts should be made to increase awareness of the modes of transmission of sexually transmitted infections, their risks, and the possibility of treatment in case of early diagnosis and a relationship based on trust and confidentiality with the partner and the sponsoring health authorities. This will increase individuals' commitment to taking preventive measures during sexual relations, encourage regular screening for sexually transmitted infections, and ensure that they are not transmitted or treated quickly.
- Enhance access to health services, including vaccinations, and keep pace with scientific developments in access to vaccines that contribute to reducing the transmission of sexually transmitted infections.
- Strengthen the multi-sectoral approach to develop comprehensive programs for awareness, prevention, diagnosis, and treatment, which requires cooperation between different sectors (public and private sectors, civil society institutions, and relevant international organizations).
- Further integrate STI prevention services into primary healthcare, sexual and reproductive health, family planning, adolescent health, and HIV/AIDS services.



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