



Original Article

Care-seeking in the presence of signs of sexually transmitted infections in Moroccan women: A comparison between the COVID-19 pandemic and pre-pandemic eraNezha Nacer^{1,2*}, Nadia Ouzennou^{1,2}, Samia Rkha¹¹Department of Biology, Faculty of Sciences Semlalia, Cadi Ayyad University, Marrakech, Morocco²Higher Institute of Nursing and Health Techniques of Marrakech, Ministry of Health and Social Protection, Morocco

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ABSTRACT

Background & Aim: The emergence of COVID-19 has had significant effects on access to screening services for sexually transmitted infections (STIs). This study aimed to describe the effects of the COVID-19 pandemic on care-seeking in the presence of signs of STIs among women of childbearing age in the Essaouira province of Morocco between April and June 2020.**Materials & Methods:** A comparative and cross-sectional approach was used for the objectives of the study. It was a comparative analysis of the programmatic data from April, May, and June 2019 and from April, May, and June 2020. In addition, data were collected from women of childbearing age in 2021 via a questionnaire.**Results:** Among the 1,100 selected women, 425 who reported having experienced symptoms of STIs during the COVID-19 pandemic were interviewed. 72.2% reported seeking health care from a qualified professional. The study revealed a relationship between women's healthcare seeking during the COVID-19 pandemic ($p < 0.05$) and factors such as place of residence, education, marital status, socioeconomic status, and distance from healthcare facilities. The analysis of the distribution of data regarding syndromic reporting of STIs, between 2019 and 2020, revealed a difference of 17.2%.**Conclusion:** The COVID-19 pandemic hindered the search for treatments for signs of STIs in women of childbearing age, with a 17.2% decrease in cases in the second quarter of 2020 compared to the same period in 2019. However, the role of healthcare professionals remains crucial for maintaining awareness, screening, and treatment of these infections.**Introduction**

The COVID-19 pandemic has had a significant impact on access to screening services for sexually transmitted infections (STIs). Temporary closures of many health facilities and restrictions on non-urgent medical visits have limited the options for people seeking to get tested (1). Furthermore, fears about the spread of the virus have deterred many people from going to health facilities, even for essential services (2). Indeed, the use of health system resources to combat the pandemic has profoundly undermined the provision of basic care in all countries (3). These measures have had a negative impact on STI prevention, treatment, and care programs and have compromised human rights (4). In

Morocco, as in other countries, the pandemic has led to an exclusive focus of public health services on the treatment of patients with COVID-19 and the fight against the spread of the virus. As a result, the private sector, which usually supports 90% of the insured citizens and 50% of the overall population, has experienced a significant decrease or even interruption in its activities (5). In addition, sanitary confinement measures introduced by the Moroccan authorities to curb the spread of the virus and address the gaps in the national health system have had a significant impact on access to health services for women of childbearing age with signs of STIs (6). In fact, data from public health services and non-

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governmental organizations (NGOs) in Morocco shows an average annual number of cases of STIs of 400,000, ranging in recent years between 517,000 in 2017 and 285,600 in 2020. It is difficult to determine whether this decrease is actually due to an actual decreased number of STIs, COVID-19-related screening and reporting problems, or other factors (6). In addition, STIs monitoring was severely disrupted by the COVID-19 pandemic in the second quarter of 2020, resulting in a significant decrease in the number of STIs during the initial confinement measures (1). By the end of 2020, the number of cases will have started to rise, which may lead to increased use of services as health facilities have reopened and individuals have sought treatment as soon as possible (7). The increasing number of diagnosed cases could also indicate an increased spread of the disease. Indeed, given limited access to care, individuals with STIs may have been infected for a longer period of time, allowing them to transmit the infection to their sexual partners. This decrease in access to STI screening has had worrying consequences for the health of the most vulnerable, including women of childbearing age (8). Delays in diagnosis and treatment have increased the risk of complications and transmission (9). In addition, the uncertainty and isolation associated with the pandemic had a negative impact on women's mental health and well-being, exacerbating the challenges they were already facing (10,11). In the face of this situation, WHO has issued recommendations to countries to implement specific measures to reorganize and maintain access for people suffering from STIs to safe and quality essential health services in order to achieve the Millennium Development Goals (MDGs) and WHO goals to eradicate all STIs in the world by 2030 (12). To achieve these goals, WHO has invited countries to develop strategies to improve access to HIV screening during pandemics (3). This involves expanding remote testing options, such as virtual consultations and home delivery services. In addition, awareness-raising efforts must be undertaken to highlight the importance of regular screening, even in pandemic times (3). Despite the limited number of available studies,

recent research indicates that the COVID-19 pandemic, along with the measures and restrictions imposed by state and local authorities, could create both individual and structural barriers to engagement and access to testing and care related to STIs (13). Indeed, many access restrictions to care for STIs have been implemented, limiting access for individuals with appointments and prioritizing care for those who exhibit symptoms. Furthermore, the fear of contracting Covid-19 has discouraged some individuals from seeking care (14,15).

Taking into account these findings, the study of the search for care in the presence of signs of STIs in Moroccan women by comparing the period of the COVID-19 pandemic and the pre-pandemic era proved very conducive. It is crucial to deepen our understanding of these effects in order to establish targeted interventions to maintain continuity of care and avoid the repercussions of delay or disruption of services. This study aims to compare STI reports by the provincial health authorities for the period of the COVID-19 pandemic (second quarter of 2020) with the second quarter of 2019 (pre-pandemic era) and to analyze the search for care for signs of STIs in women of childbearing age in the province of Essaouira in Morocco during the COVID-19 period.

Methods

Study design

This was a comparative study to compare STI reports by the provincial health authorities for the period of the COVID-19 pandemic (second quarter of 2020) with the second quarter of 2019 (pre-pandemic era) and the search for care in the presence of signs of STIs during the Covid period among women of childbearing age.

Study setting

The survey took place from January to March 2021 and included 20 primary healthcare facilities among the 69 urban and rural primary healthcare facilities in the province. A health center has been selected by

the health constituency to represent the entire province. These centers are located at distances ranging from 0 to 132 km from the city of Essaouira (capital of the province).

Sample selection

A stratified random sampling was adopted to identify the number of participants per center based on how many women of childbearing age were served by each center. For example, the sample size was calculated on the basis of a 5% error range and a 95% confidence interval (IC) for a total population of 65037 women of childbearing age in the province of Essaouira. Participants were randomly selected during their visits to health centers until the number per center was reached. Among the 1100 selected women, 425 (38.6%) of them, showing symptoms of STIs during the COVID-19 pandemic, were included in the study.

Data collection

- Existing survival data: The historical data included statistics on cases diagnosed and treated in the province of Essaouira. These data were extracted from the balance sheets of the national database "Health in Figures" for 2019 (16) and 2020 (17) and for the second quarter, data for the two years 2019 and 2020 were generated from the data of the epidemiological surveillance of the province of Essaouira (18). In Morocco, STIs are a priority focus of the Ministry of Health and Social Welfare. In this context, the Syndromic Approach for the Diagnosis and Treatment of STIs, initiated by the World Health Organization (WHO), was adopted and extended to all primary health facilities in Morocco in 2000 (19). For the diagnosis of STIs, a clinical examination is carried out, followed by an inspection of the perineal, vulvar, vaginal, and cervical regions of each woman for ulcers, discharge, inflammation, or sensitivity. Finally, a speculum examination is performed to detect an IST syndrome. Thus, the algorithms used for the treatment of STI syndromes in women include vaginal loss (isolated vaginitis and/or cervicitis), genital ulcers, pelvic inflammatory diseases, and condylomas (17). The algorithms

proposed by WHO required work of validation and adaptation to the Moroccan context (17). In Morocco, STIs are compulsory infections.

- Data from the interview with women: The interview data were collected using a questionnaire administered to women of childbearing age who reported experiencing signs of STIs during the Covid-19 pandemic while attending primary healthcare facilities, where the study took place, for various services such as family planning, vaccination, pregnancy monitoring, treatment of infections, and other health issues. After receiving treatment for their visit, they were asked about the presence of signs of STIs during the COVID-19 pandemic period and how to seek treatment for these signs. This implies that the sample includes both women who went to health facilities for care and those who, due to fear of COVID-19, were unable to go to health institutions. The women who received assistance from a qualified health professional were treated in accordance with the recommended care protocol in Morocco, which provides for a follow-up visit after treatment. We structured the questionnaire into two parts. One concerns the characteristics of the population to be studied (place of residence, age, marital status, level of education, occupational activity, socioeconomic level, and social coverage). The second part deals with seeking care in the presence of signs of STIs in the context of COVID-19. The interviews were conducted by the lead author. Participants who accepted the study were invited to participate in this interview, which consisted of fifteen closed questions and lasted an average of 15 minutes. The interviews were conducted in a quiet and isolated location, thus ensuring respect for the anonymity and confidentiality of the answers provided.

Data analysis

The data collected was entered and analyzed using the software "SPSS", version 25.0 (IBM Statistical Package for the Social Sciences). The results were presented as frequencies, averages, and standard deviations. To examine the factors that favor or hinder the search for health care in the presence of signs of STIs by women of childbearing age during the COVID-19 pandemic, a bivariate analysis of the

frequency of seeking care was carried out based on the various potential determinants. The dependent variable was the seeking of healthcare in the presence of STI symptoms during the pandemic among 425 (38.6%) women out of the 1,100 selected. It was studied in two categories: women who sought care for signs of STIs and women who did not seek care for STI symptoms. The independent variables included demographic, socio-economic, organizational, and health factors that could positively or negatively influence the seeking of care for signs of STIs during the COVID-19 pandemic.

Ethical considerations

All ethical standards have been meticulously followed, including the approval of the ethics committee of the Moroccan Association for Research and Ethics (MARE) of Taroudanet [No. 01/REC/2021], as well as the authorization from health authorities for data collection. We ensured that their human rights were respected, particularly by guaranteeing confidentiality and the right to withdraw from the study without any repercussions. Participants who gave their verbal consent also signed a consent form.

Results

The study's findings are divided into two sections: the first section provides historical data on STI diagnoses, and the second section focuses on findings about how the COVID-19 health crisis affected women of childbearing age's decision to seek care when showing symptoms of STIs.

Historical data on diagnosed and STI cases

The distribution of STI syndrome declarations among women in the province of Essaouira for the years 2019 and 2020 (Table 1) revealed a difference of 1038 STI cases, representing a gap of 17.2% between 2019 (n=5417) and 2020 (n= 4479).

All of the STI syndromes recorded declines in cases between the second quarter of 2019 and the same period in 2020. The number of cases reported by the health authorities in the second quarter of 2019 (n=1390) is significantly higher than in the same period in 2020, with a difference of 32.8%.

Table 1. Distribution of STI syndrome declarations among women in the province of Essaouira, years 2019 and 2020

Syndrome Statements of STIs	Distribution of declarations of STI syndrome for the year 2019	Distribution of declarations of STI syndrome for the year 2020	% of change	Events April, May and June 2019	Events April, May and June 2020	% of change
Isolated vaginitis	2817	2546	-9.6	710	526	-26
Cervicitis	1636	1275	-22	420	268	-36.2
Inflammatory pelvic disease	718	524	-27	188	107	-43.1
Genital ulceration	214	112	-47.7	61	35	-42.6
Condylomas	32	22	-31.2	11	7	-36
Total	5417	4479	-17.3	1390	934	-32.8

Seeking health care in the presence of STI signs

The average age of the women surveyed was 31.2 ±5.3. The proportion of women from the city of Essaouira was 41.2%, and that of those from the countryside was 58.8%. The average distance to the nearest care facility was 5.6 km (σ=6.3). Educated women accounted for 53.6% and uneducated women

for 46.4%. Married women accounted for 90.4%. The proportion of inactive women was 72%. In connection with health coverage, 67% of them were covered by health insurance. In particular, the majority (60.8%) benefited from the Economically Disadvantaged Health Care Scheme (EDHCS), a health insurance scheme for people living in poverty and vulnerable in Morocco (Table 2).

Among the 425 women surveyed, 307 (72.2%) reported seeking care from a qualified healthcare professional, while 118 women (27.8%) had not consulted a qualified healthcare professional (Table 3). The search for health care for symptoms of STIs during the COVID-19 pandemic was influenced by various factors (Table 3). For example, it is observed that the place of residence ($p < 0,05$) may have an impact on seeking health care in the presence of signs of STIs during the pandemic. In urban areas, 77.1% of women sought care for signs of STIs during the COVID-19 pandemic, compared to 68.8% in rural areas. Furthermore, the educational level of women is correlated with this search for care ($p < 0,01$). 79.3% of educated women sought care for symptoms of STIs during the COVID-19 pandemic, compared to 67.5% of illiterate women. The marital status of women is also a

factor in this search for care ($p < 0,001$), as 77.9% of married women and only 19.5% of unmarried women sought care in the presence of signs of STIs. Furthermore, the distance to the nearest health facility is also associated with seeking care for signs of STIs ($p < 0,001$), with 82.8% of women living less than six kilometers seeking treatment for symptoms of STIs, compared with 71.4% of women who live more than six miles away ($p < 0,001$). In addition, 73.7% of women with health insurance sought care for symptoms of STIs, compared to 69.3% of women without health insurance, with a significant difference ($p < 0,001$). Furthermore, it is important to note that the level of family income has an impact on seeking care for signs of STIs, as 77.3% of women with an income equal to or greater than STIs have sought care, while only 69.1% of women who have less than the STI did so ($p < 0,05$).

Table 2. General participant’s characteristics (n=425)

Variables	n	%
Place of residence	Urban	41.2
	Rural	58.8
Educational level	Uninstructed	46.4
	Instructed	53.6
Marital status	Married	90.4
	Unmarried	9.6
Professional activity	Active (CSP 1; CSP 2)	28
	Inactive (CSP 3)	72
Socio-economic level by household income	≤ GIMW	61.7
	> GIMW	38.3
Distance to care facilities	< 6 Km	57.4
	≥ 6 Km	25.6
Social security cover	Yes	67
	No	33

N: Number; %: Percentage; Km: kilometer; GIMW: guaranteed interprofessional minimum wage; SPC: Socio-professional category; SPC 1: Large-scale retailers and the professions, civil servants and executives; SPC 2: Craftsmen, salaried employees, blue-collar workers, white-collar workers, farmers, laborers, cab and truck drivers, shop assistants...; SPC 3: No profession

Table 3. Analysis of the association between seeking care by women of childbearing age in the presence of signs of STIs during the COVID-19 pandemic and their socio-demographic characteristics (n=425)

Search for treatment in the presence of signs of STIs during the COVID-19 pandemic	Search for treatment (n=307)		No search for treatment (n=118)		χ ²	
	n	%	n	%		
Place of residence	Urban	135	77.1	40	22.9	3.57*
	Rural	172	68.8	78	31.2	
Educational level	Uninstructed	133	67.5	64	32.5	4.08**
	Instructed	174	76.3	54	23.7	
Marital status	Married	299	77.9	85	22.1	62.89***
	Unmarried	08	19.5	33	80.5	
Professional activity	Active (CSP 1; CSP 2)	109	84.5	10	15.5	0.04 ^{NS}
	Inactive (CSP 3)	198	64.7	108	35.3	
Socio-economic level by household income	≤ GIMW	181	69.1	81	30.9	3.38*
	> GIMW	126	77.3	37	22.7	
Distance to care facilities	< 6 Km	202	82.8	42	17.2	37.47***
	≥ 6 Km	105	71.4	76	28.6	

Search for treatment in the presence of signs of STIs during the COVID-19 pandemic	Search for treatment (n=307)		No search for treatment (n=118)		χ^2
	n	%	n	%	
Social security cover	Yes	205	72	80	0.67 ^{NS}
	No	102	72.8	38	

N: Number; %: Percentage; Km: kilometer; GIMW: guaranteed interprofessional minimum wage; SPC: Socio-professional category; SPC 1: Large-scale retailers and the professions, civil servants and executives; SPC 2: Craftsmen, salaried employees, blue-collar workers, white-collar workers, farmers, laborers, cab and truck drivers, shop assistants...; SPC 3: No profession; ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; NS: Non significant: $p > 0.05$.

Discussion

STIs represent a significant public health challenge on a global scale, including in Morocco. This research focused on 425 women who reported symptoms of STIs during the COVID-19 period. The average age of the participants was 31.2 ± 5.3 years. Among them, 41.2% lived in urban areas, 53.6% were educated, 90.4% were married, and 72% were unemployed. Furthermore, 307 women (72.2%), reported having consulted a qualified healthcare professional to address symptoms related to STIs, while 27.8% did not seek care from a healthcare professional.

Moroccan health authorities have implemented various initiatives to raise public awareness about the prevention and treatment of STIs (19). However, such actions can be hampered and impede the achievement of national targets, especially during pandemic times such as COVID-19. In fact, the fight against the spread of COVID-19 in Morocco has required the mobilization of a large health system, in particular in terms of staff, within the health institutions of the country. This situation has affected many patients, especially women, who have experienced difficulties in seeking and/or continuing adequate treatment (20). The objective of this study was to identify the effects of the COVID-19-related health crisis on seeking care in the presence of signs of STIs in order to support improved continuity of care in combating these infections in times of health emergencies.

Indeed, the COVID-19 pandemic has had an impact on the research and supply of care in the presence of signs of STIs in women of childbearing age in Morocco. For example, the distribution of syndromic cases of STIs among women in the province of Essaouira for the years 2019 (before the pandemic) and 2020 (pandemic period) revealed a disparity of 1038

cases of IST, representing a difference of 19.2% between 2019 (n=5417 cases) and 2020. Moreover, the observed decrease in the number of cases in the second quarter of 2020 was not surprising. This difference between the two periods could be explained by the emergence of the health crisis related to COVID-19 and the strict lockdown during the second quarter of 2020. Moreover, in a report on ‘‘The difficulties of access to health care during COVID-19’’, the Office of the High Commissioner for the Plan (HCP) reveals that women have experienced enormous difficulties in accessing health services, including maternal and reproductive health services. According to these data, 27.3% of them did not have access to care during the COVID-19 pandemic (20). Furthermore, our findings confirm what other international studies have already highlighted: that measures taken by countries to address health emergencies, such as isolation, physical distancing, and confinement, have an impact on people’s access to essential health services (2).

Indeed, as COVID-19 closed and workplaces imposed restrictions on access to health facilities, one likely explanation for the drop in cases in 2020 is a decrease in the screening and diagnosis of STIs. During this phase of the pandemic, many healthcare facilities restricted visits to emergencies or closed completely (17).

Regarding the search for healthcare for STI symptoms, 72.2% of women consulted healthcare professionals, while 27.8% did not. Studies have also shown that individuals exhibiting symptoms of STIs may have delayed or avoided consulting a professional due to lockdown measures, reduced public transport services, or fear of exposure to COVID-19 (9,19, 20).

Indeed, the bivariate analysis revealed an association between the search for health care by women of childbearing age during the

COVID-19 pandemic and factors such as place of residence, educational level, marital status, socio-economic level, and distance from the nearest health facility. For example, the proportion of urban women seeking health care for signs of STIs during the pandemic exceeded that of rural women (77.1% and 68.8%, respectively). This is corroborated by HCP data that indicated that during the pandemic, the lack of access to sexual and reproductive health services was higher in rural areas, with 28%, compared to 16.7% in urban areas (20). Furthermore, educated women (76.3%) were more likely to seek care for signs of STIs during the COVID-19 pandemic than uneducated women (67.5%). Educated people are often better informed about health issues and have more resources to access health care (21,22). Therefore, they may be more inclined to take proactive measures to preserve their health, even in times of crisis such as the COVID-19 pandemic (23,24). Furthermore, according to the results of this study, women with an income equal to or greater than the Smig (77.3%) are more likely to seek care than those with a lower income (69.1%). These findings are corroborated by other studies that indicate that changes in the use of health services as a result of the pandemic are evident, both in terms of the provision of health care services and in the ability of consumers to access them, in particular in relation to their financial resources (25,26). Moreover, married women (77.9%) were more likely to seek care for signs of STIs than unmarried women (19.5%). This difference can be explained by various factors, such as family and marital support, shared responsibility within the couple for health, or differences in social and cultural standards associated with marriage (27,28). Similarly, women living less than six kilometers from the nearest health facility (82.8%) appear to be more inclined to seek care than their counterparts living more than seven kilometers away (71.4%). This trend has been highlighted by several studies showing that geographical distance influences access to primary health care in Morocco during the pandemic (28). Furthermore, it is important to note that many people with STIs have no symptoms, making it

difficult to detect these infections. Due to this absence of symptoms, many people may be unaware of their infectious status and not being tested. Therefore, the data collected in this study may not reflect the true extent of the problem. It is therefore likely that the estimates provided are significantly inferior to the reality, as they do not take into account these asymptomatic infections.

To overcome these obstacles, strategies to improve access for women to STI screening are essential. This involves expanding remote testing options, such as virtual consultations and home delivery services. In certain contexts, in order to ensure that people with STIs do not delay routine care, telemedicine services have been established in several countries (24,29). However, in Morocco, the legal basis for telemedicine is relatively recent, and its implementation remains a challenge that seems to face budget constraints and a shortage of qualified human resources (28, 30).

This study presents research avenues regarding access to sexual and reproductive health services, particularly the management of STIs, especially during health crises. The research axes could aim to strengthen the skills of stakeholders in the management of STIs, improve the quality of care provided, and promote the rapid integration of new technologies into the Moroccan healthcare system.

Strengths and limitations

This study presents some strengths that enhance its credibility and relevance. By collecting data on the official statistics of reported cases of sexually transmitted infections (STIs) for the years 2019 (before the pandemic) and 2020 (during the pandemic), as well as on the healthcare-seeking behavior of women of childbearing age presenting symptoms of STIs, this provides a comprehensive analysis that allows for the identification of gaps and factors related to seeking care during a health crisis.

However, the study has limitations. This was conducted solely in health centers, so the results may not be generalizable to other populations and medical facilities.

Conclusion

The emergence of the COVID-19 pandemic has caused changes in the functioning of health services. This health crisis has negatively influenced the search for care by women of reproductive age in the presence of signs of STIs. The number of cases reported by health authorities during this pandemic has declined sharply compared to previous years. Indeed, the distribution of STI cases for the years 2019 and 2020 recorded a decrease of almost 20 % of cases between 2019 and 2020. In relation to seeking health care for signs of STIs, 72.2 % of women consulted with health professionals, while 28.8 % did not.

We therefore recommend strengthening community resources and services to provide adequate support and guidance to women who need to be tested or treated, even during pandemic times. Thus, the development of skills and knowledge by health professionals involved in the management of STIs, including nurses and midwives, is strongly demanded. Thus, by working proactively to overcome these challenges, we can ensure that women continue to have access to the essential care they need to maintain their health and well-being.

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Conflict of interest

The researchers claim no conflicts of interest.

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References

1. Rogers B, Tao J, Murphy M, Chan PA. The COVID-19 pandemic and sexually transmitted infections: where do we go from here?. *Sexually Transmitted Diseases*. 2021 Jul 1;48(7):e94-6.
2. Eghbali M, Negarandeh R, Froutan R. COVID-19 epidemic: Hospital-level response. *Nursing Practice Today*. 2020 Apr 1;7(2):81-3.
3. WHO. COVID-19 continues to disrupt essential health services in 90% of countries. 2021.

Available at: <https://www.who.int/en/news/item/23-04-2021-covid-19-continues-to-disrupt-essential-health-services-in-90-of-countries>. Accessed July 11, 2023.

4. UNAIDS. COVID-19 and HIV Progress Report 2020. 2020. Available at: https://www.unaids.org/sites/default/files/media_asset/COVID-19_%26_HIV_FR.pdf. Accessed July 10, 2024.

5. Belyagou, Y., & Mellouki, A. Accès aux soins au Maroc à l'épreuve de la pandémie du Coronavirus à Covid 19: Le chemin vers l'équité. *International Journal of Accounting, Finance, Auditing, Management and Economics*. 2002; 3(2-1), 205-220.

6. Ministry of Health. National Strategic Plan to Combat AIDS. Extension plan 2023. 2021. Available at: https://www.sante.gov.ma/Publications/Manual/Documents/2021/PSNL%20SIDA_EXE%20Edit%C3%A9.pdf. Accessed Oct 11, 2023.

7. Pagaoa M, Grey J, Torrone E, Kreisel K, Stenger M, Weinstock H. Trends in nationally notifiable sexually transmitted disease case reports during the US COVID-19 pandemic, January to December 2020. *Sexually Transmitted Diseases*. 2021 Oct 1;48(10):798-804.

8. Ogunbodede OT, Zablotska-Manos I, Lewis DA. Potential and demonstrated impacts of the COVID-19 pandemic on sexually transmissible infections: Republication. *Current Opinion in HIV and AIDS*. 2021 Mar 1;16(2):115-20.

9. Leclerc L. Estimating the impact of the COVID-19 pandemic on the use of routine HIV care: a single-center cohort study in Montreal, Canada. 13 mars 2024.

10. Riley T, Sully E, Ahmed Z, Biddlecom A. Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low-and middle-income countries. *International Perspectives on Sexual and Reproductive Health*. 2020 Jan 1;46:73-6.

11. Giami A. COVID-19 and sexuality: The emergence of a new paradigm of sexuality. *Sexologies*. January 2021;30(1):1-7.

12. World Health Organization. Global health sector strategy on sexually transmitted infections 2016-2021: toward ending STIs. In *Global health sector strategy on sexually transmitted infections 2016-2021: Toward ending STIs 2016*.

13. Hill BJ, Anderson B, Lock L. COVID-19 pandemic, pre-exposure prophylaxis (PrEP) care, and HIV/STI testing among patients receiving care

- in three HIV epidemic priority states. *AIDS and Behavior*. 2021 May;25(5):1361-5.
14. Napoleon SC, Maynard MA, Almonte A, Cormier K, Bertrand T, Ard KL, Chan PA. Considerations for STI clinics during the COVID-19 pandemic. *Sexually Transmitted Diseases*. 2020 Jul 1;47(7):431-3.
 15. Gabster A, Erausquin JT, Michielsen K, Mayaud P, Pascale JM, Pericas C, Marks M, Katz J, Talavero GC, de Argote M, Murillo A. How did COVID-19 measures impact sexual behavior and access to HIV/STI services in Panama? Results from a national cross-sectional online survey. *Sexually Transmitted Infections*. 2022 Aug 1;98(5):332-40.
 16. Ministry of Health. Health in figures 2019. 2019. Available at: <https://www.sante.gov.ma/Documents/2021/12/Sante%20en%20digits%202019%20.pdf>. Accessed August 2, 2023.
 17. Ministry of Health. Health in figures 2020. 2020. Available at: <https://www.sante.gov.ma/Documents/2022/11/Sante%20en%20digits%202020%20VF.pdf>. Accessed August 7, 2023.
 18. Sres Essaouira. The annual balance sheet of the province of Essaouira. Essaouira: Bureau of Statistics. 2022.
 19. Ministry of Health and Social Welfare. National AIDS Report 2023. 2023. Available at: <https://www.sante.gov.ma/Documents/2023/11/Rapport%20national%20sida%20healthy%CC%81%2025-10-2023%20VF.pdf>. Accessed June 24, 2022.
 20. HCP. Difficulties in accessing health care during COVID-19 [Internet]. 2022 [cited 12 Oct 2023]. Available at: <https://www.maroc-hebdo.press.ma/hcp-difficultes-access-care-services-health-covid19>. Accessed May 21, 2022.
 21. Czeisler MÉ. Delay or avoidance of medical care because of COVID-19-related concerns—United States, June 2020. *MMWR. Morbidity and Mortality Weekly Report*. 2020;69.
 22. Shipman, C. Disability and access to healthcare in Morocco: Social and cultural influences” (2021). Independent Study Project (ISP) Collection. 3424. Available at: https://digitalcollections.sit.edu/isp_collection/3424.
 23. Cipriano M, Giacalone A, Ruberti E. Sexual behaviors during COVID-19: the potential risk of transmission. *Archives of Sexual Behavior*. 2020 Jul;49(5):1431-2.
 24. Berzkalns A, Thibault CS, Barbee LA, Golden MR, Khosropour C, Kerani RP. Decreases in reported sexually transmitted infections during the time of COVID-19 in King County, WA: decreased transmission or screening? *Sexually Transmitted Diseases*. 2021 Aug 1;48(8S):S44-9.
 25. Salavati S, Rahimaghaee F, Seylani K. Co-creation: A new keyword in advancing the objectives of health organizations in COVID-19 crisis. *Nursing Practice Today*. 2022;9(1):1-3.
 26. Podubinski T, Townsin L, Thompson SC, Tynan A, Argus G. Experience of healthcare access in Australia during the first year of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*. 2021 Oct 12;18(20):10687.
 27. Levesque JF, Harris MF, Russell G. Patient-centred access to health care: conceptualizing access at the interface of health systems and populations. *International Journal for Equity in Health*. 2013 Dec;12:1-9.
 28. Belattar, L., Mokhtari, H. E., & Asraoui, I. The impact of Covid 19 on the socioeconomic situation of Moroccan women. *French Journal of Economics and Management*. 2023 Jul 15;4(7).
 29. Hassambay R, Bennis FZ, Rwegera B, du Loû AD. The community approach to health: A lever for protecting vulnerable people in times of health crisis? *Les Tribunes de la sante*. 2022;72(2):83-92.
 30. Jallal M, Serhier Z, Berrami H, Othmani MB. Current State and Prospects of Telemedicine in Morocco: Analysis of Challenges, Initiatives, and Regulatory Framework. *Cureus*. 2023 Dec;15(12).