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Original article

Recovery of the increasing pattern of sexually transmitted infections (STI) after the COVID-19 pandemic: The case of gonorrhea in Catalonia, Spain



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ABSTRACT

Introduction: Sexually transmitted infections (STI) have shown a sustained increase in recent years. Changes in epidemiological patterns highlight the need to adapt public health strategies for their prevention and control. The objective of this study is to describe the trend of reported gonorrhea cases in Catalonia (Spain) from 2017 to 2023 and to compare the epidemiological pattern of reported cases before, during, and after the COVID-19 pandemic.

Methods: Descriptive analysis of reported gonorrhea cases in Catalonia among individuals aged ≥ 14 years between 2017 and 2023. Incidence rates (IR) were calculated overall and by sex, age, and origin. A descriptive analysis was conducted to compare reported cases across the pre-pandemic (2017–2019), pandemic (2020), and post-pandemic (2021–2023) periods.

Results: The IR of gonorrhea showed an average increase of 32.9% between 2017–2019 and 37.9% between 2021–2023, reaching 164.0 cases per 100,000 inhabitants in 2023. During the pandemic, there was an increase in the proportion of cases among MSM (13.3%), alcohol use (40.0%), having ≥ 6 sexual partners (30.5%), and new sexual partners (74.3%). In the post-pandemic period, the highest percentage increase was observed in women (115.7%), Spanish nationals (124.9%), cases reported in sexual and reproductive health units (30.9%), symptomatic cases (58.0%), and reinfections (33.0%). Additionally, there was a decrease in the average age, particularly among women, in contact tracing studies (13.1%), and in antibiotic resistance.

Conclusions: Gonorrhea continues to rise, especially among young people and women. Strengthening its visibility and prioritizing it in STI prevention and control programs is crucial to mitigate its impact on public health.

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Recuperación del patrón de incremento de las infecciones de transmisión sexual (ITS) después de la pandemia de COVID-19: el caso de la gonococia en Cataluña, España

R E S U M E N

Palabras clave:
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Introducción: Las infecciones de transmisión sexual (ITS) han mostrado un incremento sostenido los últimos años. Los cambios en los patrones epidemiológicos subrayan la necesidad de adaptar estrategias de salud pública para su prevención y control. El objetivo de este estudio es describir la tendencia de los casos notificados de gonococia en Cataluña (España) durante el período 2017–2023 y comparar el patrón epidemiológico de los casos notificados antes, durante y después de la pandemia e COVID-19.

Métodos: Análisis descriptivo de los casos de gonococia notificados en Cataluña en ≥ 14 años entre 2017–2023. Se calcularon tasas de incidencia (TI) globales, por sexo, edad y origen. Se realizó un análisis descriptivo comparando los casos notificados según el periodo prepandémico (2017–2019), pandémico (2020) y pospandémico (2021–2023).

Resultados: La TI de gonococia mostró un incremento promedio del 32,9% entre 2017–2019 y del 37,9% entre 2021–2023, alcanzando 164,0 casos por 100.000 habitantes en 2023. Durante la pandemia se observaron aumentos en la proporción de casos en GBHSH (13,3%), consumo de alcohol (40,0%), ≥ 6 parejas sexuales (30,5%) y nueva pareja sexual (74,3%). Postpandemia, el incremento porcentual fue mayor en mujeres (115,7%), españoles (124,9%), los casos notificados en unidades de salud sexual-reproductiva (30,9%), casos sintomáticos (58,0%) y reinfecciones (33,0%). Además, disminuyó la media de edad sobre todo en mujeres, los estudios de contactos (13,1%) y la resistencia antibiótica.

Conclusiones: La gonococia continúa en aumento, especialmente entre jóvenes y mujeres. Es crucial fortalecer su visibilidad y priorizarla en los programas de prevención y control de ITS para mitigar su impacto en la salud pública.

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Introduction

Sexually transmitted infections (STI) are an increasingly important public health problem, both due to their high incidence and the consequences for sexual and reproductive health.¹ Over the last ten years resistance rates in Europe of *Neisseria gonorrhoeae* to macrolides, tetracyclines and quinolones have increased, but not to ceftriaxone, which remains below 0.1%–0.2%.²

According to data from Spain's Centro Nacional de Epidemiología [National Epidemiology Centre], in recent years Catalonia has become the autonomous region with the highest incidence rates (IR) of chlamydia and gonorrhoea, with IR double the national average; 2023 figures show 78.9 cases and 71.5 cases/100,000 population respectively, mainly affecting gay males, bisexual males and other males who have sex with males (GBMSM) as well as young adults.^{3,4} In 2020, coinciding with the COVID-19 pandemic, gonorrhoea and particularly chlamydia infections in Catalonia and Spain decreased by 22.0% and 19.7% and by 28.2% and 21.0% respectively.^{3,4}

The implementation of preventive measures and the adaptation of health services to the health crisis reduced the number of diagnostic tests, they significantly altered social and sexual interactions and this led to a lower reported incidence.^{5–7} Previous studies found that women or people living in disadvantaged areas were more affected.⁸

After chlamydia, gonorrhoea is therefore the curable STI with the highest reported incidence.^{3,4} Also in Europe, the latest report from the European Centre for Disease Prevention and Control (ECDC) highlights that, in 2022, the notification rate of gonorrhoea in the European Union/European Economic Area (EU/EEA) was the highest since 2009, with an increase of 42% compared to 2021.⁹ In addition, an increase was found in cases among heterosexuals and among those aged ≥ 25 , especially females. Spain was fourth on the list of EU/EEA countries with the most notifications reported in 2022,⁹ with an annual change in IR of 18.5% from 2009 to 2020, and 30.4% from 2020 to 2022.³ As in other countries, this trend has been observed in previous years and is concentrated in the groups

that accumulate more cases, such as young adults aged 25–34 and GBMSM.^{3,9,10}

Given the growth in the number of reported cases, exceeding pre-pandemic levels, the aims of this study were: 1) to describe the trend of reported cases of gonorrhoea in Catalonia during the period 2017–2023; and 2) to compare the epidemiological pattern of the gonorrhoea epidemic before, during and after the COVID-19 pandemic.

Material and methods

The surveillance and control of STIs in Catalonia is regulated within the framework of European and national monitoring. There are two information systems for surveillance: the registry of notifiable diseases and the microbiological notification system, which make up the Catalonia STI registry, which is part of the Sistema Integrado de Vigilancia Epidemiológica de la Sida/VIH/ITS/HV (SIVES) [Integrated Epidemiological Surveillance System for AIDS/HIV/STI/HV].¹¹ The data from these systems are integrated into the Repositori Epidemiològic de Catalunya [Catalonia Epidemiological Repository], which facilitates the complementarity of variables and the identification of cases. The declaration of gonorrhoea includes an epidemiological survey with clinical-behavioural information which accompanies the case notification.¹²

We carried out a descriptive analysis of reported cases of gonorrhoea during the period 2017–2023 in people aged ≥ 14 . We estimated the incidence and compared the clinical-behavioural characteristics of the notifications in the period before, during, and after the pandemic, defined according to: 1) pre-pandemic, including cases from 2017 to 2019; 2) pandemic, with cases from 2020; and 3) post-pandemic, the cases reported from 2021 to 2023.

Study variables

Demographic variables included gender, age and origin, grouped according to whether the individual was born in Spain or

Table 1

Changes in the incidence rate per 100,000 population of gonorrhoea by gender and origin, Catalonia 2017–2023.

Year	Total	Gender		Origin	
		Male	Female	Spanish	Foreign
<i>Pre-pandemic</i>					
2017	47.7	80.2	16.5	27.3	101.7
2018	56.5	93.2	21.3	37.6	135.8
2019	83.2	135.6	32.9	54.7	198.2
Average annual increase	32.9%	30.9%	41.8%	41.6%	39.7%
<i>Pandemic</i>					
2020	64.9	107.9	23.5	42.6	148.6
<i>Post-pandemic</i>					
2021	90.8	153.4	30.1	61.2	200
2022	140.0	227.3	55.5	96	295.4
2023	163.9	263.9	67	111.7	346.1
Average annual increase	35.6%	32.1%	52.6%	36.6%	32.4%

another country. The clinical variables included were HIV co-infection, diagnosis of STI other than gonococcal disease in the 12 months prior to the reported diagnosis, symptoms, and re-infection, defined as a new gonococcal infection in a period ≥ 3 months since the previous diagnosis. The reporting department was included and classified according to whether it was a sexual-reproductive health care department (SRHCU), primary care (PC) department, STI department (STIU) or other departments (including urology, dermatology) and the beginning of the study of contacts. The microbiological variables of diagnostic technique, biological sample and antibiotic susceptibility were also incorporated.

Behavioural information on sexual orientation was included, categorised as: GBMSM, males who have sex with females (male-heterosexual) and females who have sex with males (female-heterosexual). Having a new sexual partner in ≤ 3 months prior to the reported episode, the number of sexual partners (0–2, 3–5, 6–10 and more than 10 partners), consumption of alcohol or other drugs, and the practice of engaging in prostitution.

Statistical analysis

The trend of reported cases during the period 2017–2023 was described through a trend analysis, applying the segmented regression model to detect change points in the number of cases per year. Annual IR per 100,000 population were calculated overall and according to gender, age group and origin. The population denominators used to calculate the rates were obtained from the Instituto de Estadística de Cataluña [Statistical Institute of Catalonia], according to the population as of 1 June of each year studied.

A descriptive analysis was performed comparing the variables of the cases reported in the three study periods. Frequencies and proportions were calculated for categorical variables and the mean and standard deviation for continuous variables. Proportions were compared using the Pearson chi-square statistical test. Differences in continuous data were assessed using ANOVA and Tukey test. All data were analysed using R software.

Ethical considerations

We used data from the EDO system, governed by the Spanish Organic Law 3/2018, of 5 December, on the Protection of Personal Data and the Guarantee of Digital Rights, and General Public Health Law 33/2011, of 4 October. Personal data were anonymised after analysis.

Results

During the period 2017–2023, 140,598 STI were notified in Catalonia. Gonorrhoea was, with 50,363 cases (35.8%), the second most notified STI after chlamydia, with 15,422 cases and representing 48.7% of all notified STI. The gonorrhoea IR showed an average annual increase of 26.9%, going from 3576 notifications and an IR of 47.7 cases/100,000 population in 2017, to 13,066 notifications and an IR of 164.0 cases/100,000 population in 2023, except for the year 2020, where IR was reduced by 22.1%, with 5010 notifications and an IR of 64.9 cases/100,000 population (Table 1). The largest annual change in IR was seen in the period 2021–2022, with an increase of 54.1%. In addition, gonorrhoea was the STI with the highest percentage increase post-pandemic (37.1%), followed by lymphogranuloma venereum (27.6%), chlamydia (22.9%) and syphilis (7.5%) (Fig. 1 and Table 1). The trend analysis identified a significant change ($P=.04$) in 2020. Before 2020, there was a moderate average rate increase in the number of cases of 744.5 cases/year and after 2020 a mean of 3,013.5 cases/year.

Among the total cases of gonorrhoea, 40,596 (80.6%) corresponded to men and 9767 (19.4%) to women IR increased in both men and women, although the largest increase occurred in women, with an average annual increase of 33.9%, compared to 25.4% in men, and especially in the post-pandemic period compared to the pre-pandemic period: 115.7% and 108.6% respectively. In 2017, the IR in men was 80.2 cases, increasing to 263.3 cases in 2023. In women, the IR were 16.5 and 67.0 cases respectively (Table 1). By age group, the IR was higher for women, especially among those aged 19–29, with an IR that increased from 80.7 cases in 2017 to 319.7 in 2023. In men, the IR increased, especially among those aged 29–39, from 267.0 cases in 2017 to 850.0 in 2023 (Fig. 2).

The IR in foreigners was three times higher than that among Spaniards for the entire period. In foreigners, IR increased from 101.7 cases in 2017 to 346.1 in 2023, with an average annual increase of 28.7%. In Spanish nationals it went from 27.3 to 111.7 cases, with an average annual increase of 31.0%. The largest post-pandemic increase occurred in Spaniards, at 124.9%, compared to 93.2% among foreigners (Table 1).

Comparing the clinical-epidemiological characteristics of the cases reported before, during and after the pandemic (Table 2), a 30.9% increase in cases was found in SRHCU post-pandemic, decreasing by 11.2% and 10.5% in PC and STIU respectively. During the pandemic, SRHCU represented 40.4% of reported cases.

Women had a lower mean age at diagnosis than men, 28.7 (SD: 10.8) versus 33.7 (SD: 9.9), with a downward trend, going from 30.2 to 28.4 between the pre- and post-pandemic period, while

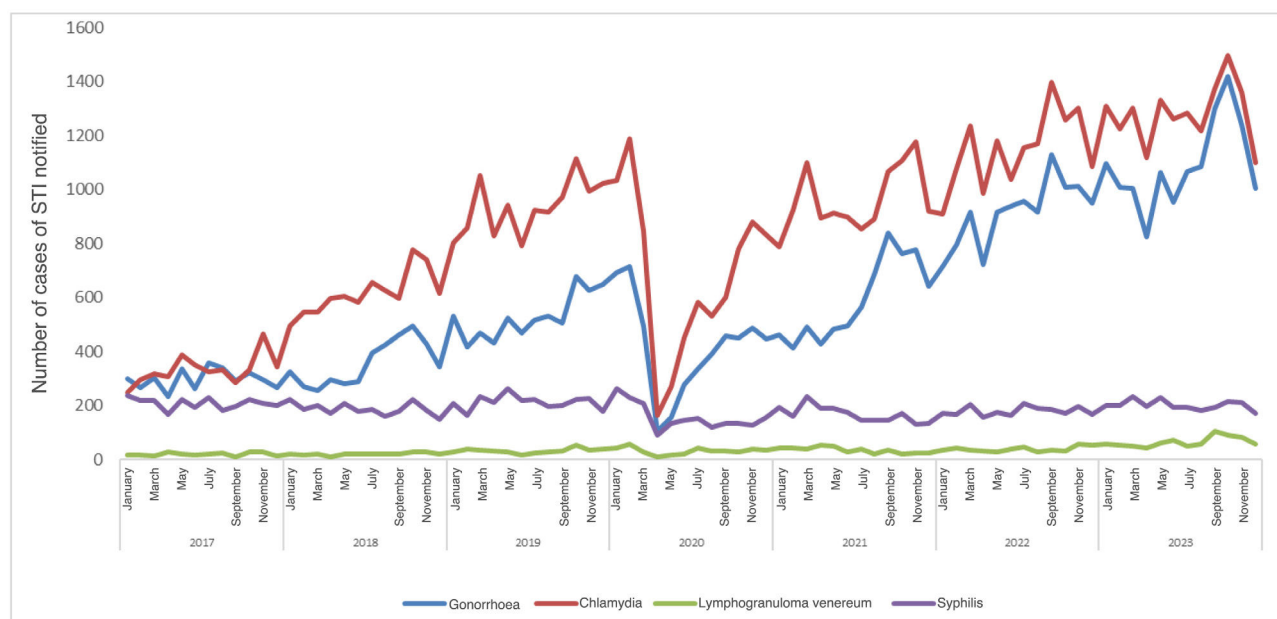


Fig. 1. Changes in the number of STI cases reported in Catalonia during the period 2017–2023.

men went from an average age of 32.8 pre-pandemic to 33.9 post-pandemic ($P < .001$).

The proportion of symptomatic cases was significantly higher in the post-pandemic period (58.0%) compared to the pre-pandemic period (56.4%) and the pandemic period (57.9%). Similarly, the proportion of re-infections increased significantly during and after the pandemic: 26.7% and 33.0% respectively. In contrast, HIV co-infection decreased by 10.2% post-pandemic compared to the pre-pandemic period, and having a previous STI decreased during and after the pandemic by 65.7% and 60.3% respectively.

Among the behavioural characteristics, although GBMSM were the majority group in all periods (60.9%) and the group in which the greatest increase was seen during the pandemic (13.3%), cases among heterosexual women also increased by 14.4% from the pandemic period to the post-pandemic period. The proportion of cases with a new sexual partner increased to 74.3% during the pandemic period, decreasing by 13.6% post-pandemic. The same pattern was seen with alcohol consumption, being as high as 40.0% consumption during the pandemic, and having ≥ 6 sexual partners, which increased by 30.5%. The contact tracing showed a significant downward trend, from 25.1% pre-pandemic to 13.1% post-pandemic.

Among the microbiological characteristics, culture increased by 22.9% between the pre- and post-pandemic period. As regards the type of sample, a significant change was found between periods; the urethral sample was predominant before (49.5%) and during the pandemic (33.0%), while post-pandemic, pharyngeal sampling increased (31.6%). In terms of antibiotic susceptibility testing, among the cases with culture performed, 15.6% were resistant to ciprofloxacin and 4.8% and 4.3% were resistant to tetracyclines and penicillin respectively. Resistance to third-generation cephalosporins was $\leq 0.5\%$. Antibiotic resistance decreased or remained stable between the pre- and post-pandemic periods (Table 2).

Discussion

In Catalonia, there was an increase in reported cases of STI in surveillance systems,⁴ as was found at both national³ and

European⁹ levels. Although chlamydia is still the STI with the highest incidence, a notable increase in reported cases of gonorrhoea was found, especially during the period 2021–2023, representing the STI with the highest percentage increase after the COVID-19 pandemic. This increase, which mainly affected women aged 19–29, was also found in Spain and in the EU/EEA.^{3,9} The ECDC reported an increase in cases in women aged ≤ 25 and ≤ 30 of more than 70% and 25% of expected cases in the second half of 2022, and 88% and 30% in the first half of 2023.^{9,13} This increase is believed to be indicative of behavioural changes following the relaxation of measures taken to curb the spread of COVID-19. Although social distancing and healthcare reorganisation led to a temporary decrease in reported IR,^{14–16} our data show that infections in GBMSM and some risky sexual behaviours, such as alcohol consumption or number of sexual partners, remained steady during the pandemic, suggesting a persistent transmission pattern despite the imposed control measures. Similarly, the increase in the proportion of symptomatic cases and re-infections and a decrease in contact tracing would point to a prioritisation of cases treated and less access during the health crisis. In the United States, where they compared cases from 2018 to 2019 to 2020–2021, they concluded that more cases with re-infections were notified during the second period.¹⁷ Among the hypotheses raised, some studies suggest that the lineage of *N. gonorrhoeae* circulating among the heterosexual population could cause asymptomatic or mild infections and/or greater transmissibility in contrast to circulating variants, especially among GBMSM.¹³ A case analysis conducted in Denmark showed that strains among heterosexuals were resistant to antibiotics recommended as first-line therapy and therefore one of the possible causes of the increase in cases and re-infections in this population group.¹⁸ Although our results do not indicate any increase in antibiotic resistance, particularly to third-generation cephalosporins, the observed susceptibility patterns for antibiotics recommended as first-line therapy indicate the need for enhanced surveillance of antimicrobial resistance and monitoring of treatment outcomes, as previously emphasised by the Euro-GASP Network.¹⁹ This is essential for the timely detection of any emergence of resistant strains and the prompt adjustment of antimicrobial treatment guidelines.

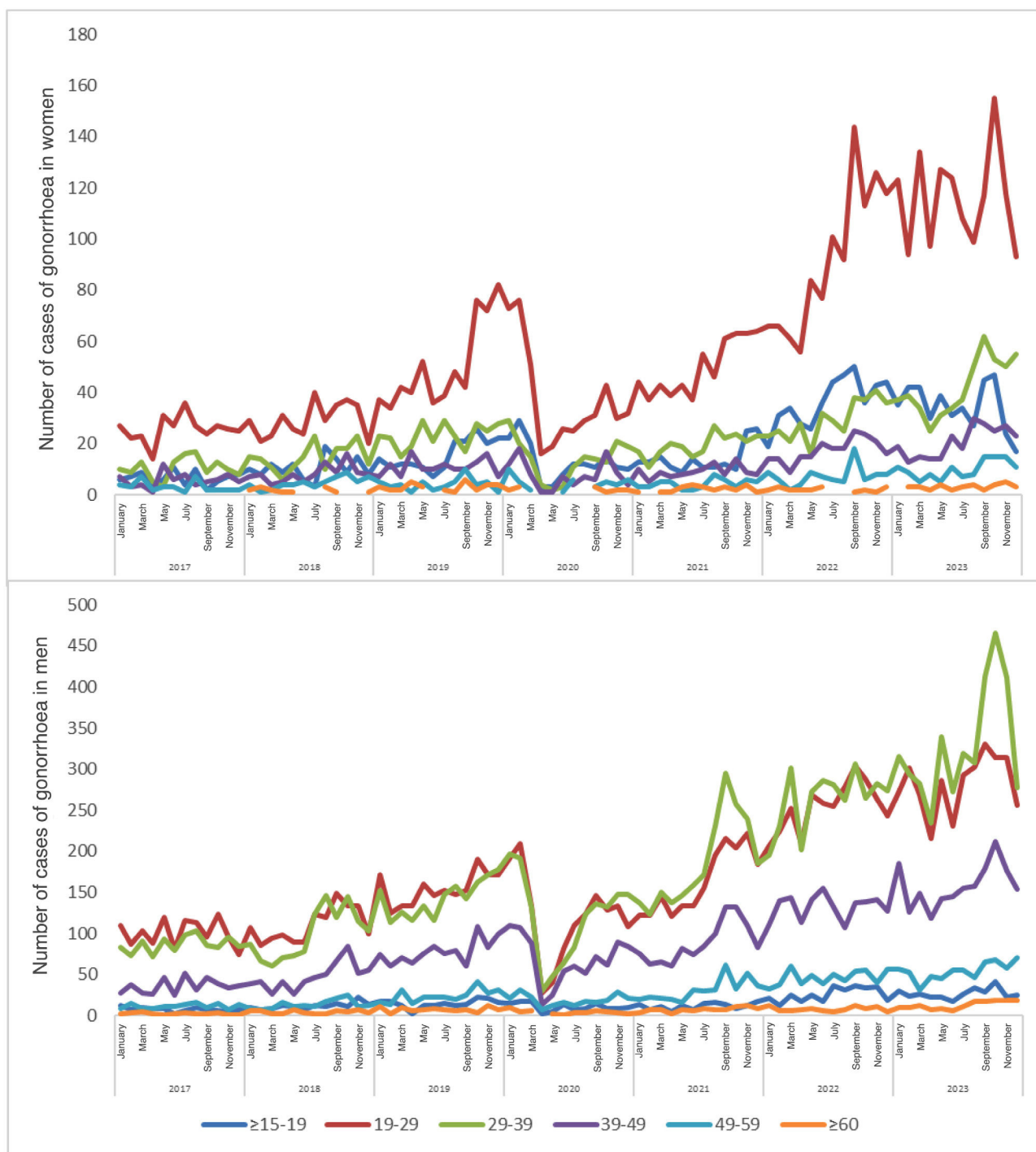


Fig. 2. Changes in the number of cases of gonorrhoea reported in Catalonia during the period 2017–2023 by gender and age group.

With the relaxation of restrictions, the number of cases exceeded previous levels, due to probable escalation of many of the risk behaviours after the confinement.^{13,20–23} In our context, although GBMSM continue to be the predominant transmission group for gonorrhoea,^{3,4} we must not forget the role played by bridging populations, such as men who have sex with women and men, given the significant post-pandemic increase observed among women.^{16,18}

Among the limitations to be considered in this study, we highlight the under-reporting of the epidemiological survey to the Catalonia surveillance network, meaning the behavioural variables are limited and may be underestimated. Identifying the charac-

teristics of the affected population and the risk factors related to infection are crucial for the development of prevention policies; therefore, reinforcing compliance with the epidemiological survey by healthcare professionals is crucial. Another limitation for interpreting our results is the lack of data on the total number of annual tests performed. Although the apparent reduction in cases during the pandemic was partly due to the interruption of services, the literature supports the idea of an increase in cases not only attributable to an increase in post-pandemic tests, but, as we mentioned above, to the escalation of risk behaviours, especially in the young population. In England, there were post-pandemic increases in diagnosis in young people, which far exceeded the growth in

Table 2

Clinical-epidemiological characteristics of notified cases of gonorrhoea in Catalonia according to the study period, 2017–2023.

Variables	Total		Pre-COVID-19 (2017–2019)		COVID-19 (2020)		Post-COVID-19 (2021–2023)		P
	n	%	n	%	n	%	n	%	
Total reported cases	50,363		14,187	28.2	5015	10.0%	31,161	61.9%	
<i>Reporting department</i>									<.001
Other	2302	21.3%	717	22.5%	85	13.0%	1500	21.6%	
SRHCU	3011	27.9%	713	22.4%	265	40.4%	2033	29.3%	
PC	3625	33.6%	1160	36.4%	221	33.7%	2244	32.3%	
STIU	1852	17.2%	599	18.8%	85	13.0%	1168	16.8%	
<i>Mean age (SD)</i>									
Overall	31.2	10.3	31.5	10.6	31.2	10.2	31.2	10.2	<.001
Male	33.7	9.9	32.8	9.8	33.7	9.7	33.9	9.9	
Female	28.7	10.8	30.2	11.4	28.6	10.8	28.4	10.6	
<i>Symptoms</i>									.023
Yes	16,875	57.4%	5890	56.4%	1725	57.9%	9260	58.0%	
No	12,515	42.6%	4562	43.6%	1255	42.1%	6698	42.0%	
<i>HIV coinfection</i>									<.001
Yes	4081	30.3%	1531	32.0%	456	32.4%	2094	28.7%	
No	9402	69.7%	3255	68.0%	952	67.6%	5195	71.3%	
<i>Reinfection</i>									<.001
Yes	14,255	28.3%	2633	18.6%	1338	26.7%	10,284	33.0%	
No	36,108	71.7%	11,554	81.4%	3677	73.3%	20,877	67.0%	
<i>Previous STI</i>									<.001
Yes	3158	26.5%	326	74.2%	329	25.5%	1889	29.5%	
No	8743	73.5%	940	25.8%	962	74.5%	4519	70.5%	
<i>Study of contacts</i>									<.001
Yes	8762	17.4%	3568	25.1%	1126	22.5%	4068	13.1%	
No	41,601	82.6%	10,619	74.9%	3889	77.5%	27,093	86.9%	
<i>Sexual orientation</i>									<.001
Heterosexual female	9767	27.8%	2730	26.0%	924	25.4%	6113	29.1%	
Heterosexual male	3960	11.3%	1711	16.3%	337	9.3%	1912	9.1%	
GBMSM	21,411	60.9%	6045	57.6%	2374	65.3%	12,992	61.8%	
<i>No. partners</i>									<.001
≤2	6872	60.2%	1117	34.4%	242	23.2%	1847	41.2%	
3–5	1698		528	16.3%	130	12.5%	1041	23.2%	
6–10	1488	16.9%	584	18.0%	240	23.0%	663	14.8%	
>10	1356	27.2%	1016	31.3%	431	41.3%	936	20.9%	
<i>New partner ≥ 3 months</i>									<.001
Yes	6530	68.1%	2660	71.1%	864	74.3%	3006	64.2%	
No	3056	31.9%	1079	28.9%	299	25.7%	1678	35.8%	
<i>Drug and/or alcohol use</i>									.057
Yes	3060	38.1%	1059	36.4%	274	40.0%	1727	38.9%	
No	4979	61.9%	1852	63.6%	411	60.0%	2716	61.1%	
<i>Sex work</i>									<.001
Yes	355	4.5%	142	4.9%	47	6.9%	166	3.8%	
No	7587	95.5%	2735	95.1%	639	93.1%	4213	96.2%	
<i>Biological sample</i>									<.001
Urethral	12,671	32.3%	4469	48.0%	1152	33.0%	7050	26.4%	
Vaginal	3033	7.7%	615	6.6%	251	7.2%	2167	8.1%	
Urine	3505	8.9%	632	6.8%	396	11.3%	2477	9.3%	
Pharyngeal	10,425	26.6%	1231	13.2%	885	25.3%	8309	31.2%	
Anal	6284	16.0%	1161	12.5%	525	15.0%	4598	17.2%	
Endocervical	2796	7.1%	922	9.9%	276	7.9%	1598	6.0%	
Other samples	523	1.3%	248	2.7%	9	0.3%	266	1.0%	
<i>Diagnostic technique</i>									<.001
Culture	38,646	76.7%	9164	64.6%	3339	66.6%	26,117	83.8%	
PCR without culture	11,717	23.3%	5023	35.4%	1676	33.4%	5044	16.2%	
<i>Antibiotic resistance</i>									<.001
Ceftriaxone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Spectinomycin	23	0.1%	6	0.1%	1	0.0%	16	0.1%	
Ciprofloxacin	6035	15.6%	2046	22.3%	416	12.5%	3573	13.7%	
Penicillin	1663	4.3%	719	7.8%	202	6.1%	742	2.8%	
Tetracycline	1844	4.8%	478	5.2%	97	2.9%	1269	4.9%	
Cefoxitin	15	0.0%	14	0.2%	1	0.0%	0	0.0%	
Azithromycin	1235	3.2%	327	3.6%	58	1.7%	850	3.3%	
Cefixime	76	0.2%	46	0.5%	0	0.0%	30	0.1%	

testing rates. This suggests a genuine increase in gonorrhoea transmission within the population.¹⁶

Addressing the substantial increases in STI cases requires urgent attention. Prioritising sexual health education and risk perception, combating the stigma associated with STI and expanding and improving access to testing and treatment are essential for any long-term strategy.^{24,25} Many of these recommendations are already being implemented in different countries. In Ireland,

a campaign targeting 17–30-year-olds stresses the importance of condoms and raises awareness about the free *home-testing service*.²⁶ Education and awareness initiatives are vital to empower people to make decisions about their sexual health. Promoting the use of barrier methods and encouraging open dialogue about STI, highlighting the importance of combining different prevention approaches to reduce their spread and promoting comprehensive sexual health, can help reduce transmission rates, especially given

the undervalued use of condoms. Several studies show a worrying trend towards a decrease in condom use, especially among young people and GBMSM.²⁷ In Spain, only 58% of young people aged 18–26 used condoms regularly, down from 62% reported in 2021. Also, only 6% use condoms during oral sex.²⁸

It is also crucial to maintain close surveillance, to better understand the factors driving this upward trend and to identify whether this is a temporary phenomenon or whether elevated levels persist, and to be able to act accordingly. The limited implementation of contact tracing, a fundamental strategy for controlling and preventing the spread of these infections, may play an important role in their growth. Effective implementation of contact tracing, which requires collaboration between patients, healthcare professionals and health authorities, is therefore still a target we need to achieve.²⁹

In conclusion, gonococcal infection continues to be a public health problem. The COVID-19 pandemic affected the reporting dynamics and characteristics of this infection. The changes seen in diagnostic departments, the variation in demographic characteristics and the impact on sexual behaviours and diagnostic methods suggest that STI such as gonorrhoea continued to affect the population during the pandemic, but with modified patterns. Following the pandemic, although certain population groups such as GBMSM continue to be more affected, an increase in cases has been confirmed in other population groups, such as women and young adults. Therefore, the implementation of interventions for controlling STI in our setting must be adapted to the most affected populations and include awareness of the increasing risk of STI, including educational environments, the promotion of the use of barrier methods, screening and contact notification, in addition to collecting timely and quality surveillance data.

In summary, gonorrhoea is an infection that is clearly on the rise among different population groups, with individual and population repercussions, including vertical transmission and increased antibiotic resistance. It is essential to give this infection the importance it requires and, alongside syphilis, prioritise it in prevention and control programmes and interventions for STI.

Ethical considerations

Informed consent was not required.

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Declaration of competing interest

The authors have no conflicts of interest to declare.

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