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Short Communication

Impact of COVID-19 on birth rate trends in the Italian Metropolitan Cities of Milan, Genoa and Turin



A.F. De Rose, F. Ambrosini*, G. Mantica, C. Terrone

Department of Urology, Policlinico San Martino, Largo Rosanna Benzi, Genoa, Italy

ARTICLE INFO

Article history:

Received 10 May 2021

Received in revised form

11 June 2021

Accepted 29 June 2021

Available online 8 July 2021

Keywords:

Pandemic

SARS-CoV-2

Global health

Birth rate

Government

ABSTRACT

Objectives: The COVID-19 pandemic has led to major changes in the lives of people worldwide, including changes in personal and social habits. Faced with this global health emergency, governments have imposed strict mitigation measures. Within this context, and considering data from previous epidemics, it has been proposed that birth rates may have been negatively impacted. This study aimed to assess the trends in birth rates in three main industrial cities in Northern Italy during the COVID-19 pandemic.

Study design: This was a retrospective and observational study.

Methods: Data on birth rates were collected and compared for the cities of Milan, Genoa and Turin from November 2019 to January 2020 (i.e. before the COVID-19 pandemic) and during the same period of the following year (i.e. during the COVID-19 pandemic).

Results: Birth rates in the cities of Milan, Genoa and Turin decreased by 55%, 12% and 33%, respectively.

Conclusions: The decrease in birth rates during the COVID-19 pandemic in these three industrialised cities is in line with the demographic effects of previous pandemics. The negative impact of COVID-19 on conception may be a result of various underlying factors. Further studies are required to verify how social and demographic factors may influence birth rates during pandemics.

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The COVID-19 pandemic has impacted almost every country in the world. The World Health Organisation declared COVID-19 as a Public Health Emergency on 30 January 2020, and by 11 March 2020, it was declared a global pandemic. In Italy, a total lockdown was imposed from 10 March to 4 May 2020. Despite this, viral spread continued, and the consequences are continuing to have devastating effects on the lives of people worldwide, including changes in personal and social habits.

Although governments introduced public health measures to curb the spread of the virus, population habits changed, along with an increasing burden on mental health.

Evidence from previous epidemics with high fatality rates has shown important demographic changes and declines in birth rates. For example, during the Spanish influenza pandemic of 1918, approximately 50 million people died worldwide, resulting in the deadliest epidemic in modern history. Fertility rates between 1913 and 1918 were stable; however, they declined to their lowest numbers in 1919. More recently, a similar trend was observed

during the severe acute respiratory syndrome epidemic (2003) and the Zika virus outbreak (2015–2016).¹

Considering these data, it has been hypothesised that the COVID-19 pandemic may also have a negative impact on birth rates. It has been previously reported that the birth rate in the Metropolitan City of Genoa declined by 12% when comparing the period from November 2019 to January 2020 with the same period the following year.²

However, preliminary data from a single city may not reflect the reality of other communities. Thus, we have collected demographic data from the Metropolitan Cities of Turin and Milan to assess the birth rate trends of two additional important business and cultural centres in Northern Italy.

From November 2019 to January 2020, 1579 births were registered in the City of Turin, while, during the same period the following year, 1043 were recorded; thus, 536 fewer births (33% decline). Similarly, in the City of Milan, 4187 and 2325 births were recorded from November 2019 to January 2020 and during the same quarter of 2020–2021, respectively (55% reduction)³ (see Fig. 1).

The declining birth rate trends have been confirmed in both Milan and Turin. Indeed, compared with the City of Genoa, Turin and Milan showed a much greater reduction in births. The reason

* Corresponding author. Department of Urology, Policlinico San Martino Hospital, University of Genoa, Largo Rosanna Benzi, 10, 16132 Genoa, Italy. Tel.: +3480497079
E-mail address: f.ambrosini1@gmail.com (F. Ambrosini).



Fig. 1. Birth rates from November 2019 to January 2020 (before the COVID-19 pandemic) and during the same period of the following year (during the COVID-19 pandemic) in the cities of Milan, Genoa and Turin (Italy).

for this variability remains unclear. It could be suggested that both general social factors, such as different age distribution of the populations in the three cities, and pandemic-related factors, such as different restrictive measures, may have impacted the birth rates. Interestingly, in Milan and Turin, the restrictive measures were in place for a longer period because of the increased transmission rates in these cities compared with Genoa.

The decreasing birth rate trends seen in this 'Industrial triangle' may have different explanations. First, it is currently well established that the public health measures adopted to limit viral spread have impacted greatly on the well-being of the population, resulting in profound psychological distress.⁴ Anxiety, frustration and boredom may not only compromise social activities but could also impact reproduction motivation. Moreover, mental health affects sexual desire, and it has been reported that reduced sexuality was observed during the pandemic, particularly among hospital workers and their relatives.⁵

Additional factors that may be contributing to the declining birth rates may include increased unemployment, growing financial losses and general economic uncertainty. Irregular employment with limited job security, few new job opportunities and, at the same time, concerns about the costs of raising a newborn may influence the decision to have a child.

However, these data need to be interpreted with caution. Interestingly, the results of the present study are consistent with the decreasing trend in birth rates previously reported for the City of Genoa and also with demographic evidence from previous epidemics. Nevertheless, the impact of the COVID-19 pandemic in the Italian 'Industrial triangle' may not be representative of other Italian cities or of the situation in other countries.

To the best of the authors' knowledge, to date, no studies have been published in the literature regarding a decline in birth rates during the current COVID-19 pandemic. In some geographical

areas, local newspaper articles have reported the number of births during the COVID-19 pandemic; however, these data are limited to specific locations. Some research is now available examining the potential effect of the COVID-19 pandemic on future birth rates.⁶

Further data collection is required to determine exactly how the global COVID-19 health emergency is impacting birth rates.

Author statements

Acknowledgements

The authors thank Dr. Claudio Critelli, Dr Paola D'Antuono and Dr Piera Villata for the kind support in providing birth rate data from the Metropolitan City of Genova, Milan and Turin, respectively. The authors thank ISTAT (Istituto Nazionale di Statistica) for providing data regarding Italian birth rates <https://www.istat.it/it/archivio/nascite> (Press Room, Genoa City Hall).

Ethical approval

Not required.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Competing interests

None declared.

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