

COVID-19 diffusion and its impact on dental practice in distant countries with similar ethnic background

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1 | INTRODUCTION

Epidemiology of COVID-19 and diffusion patterns of the novel coronavirus (SARS-CoV-2) are still poorly understood, as they differ substantially among countries and even in neighboring regions within the same country. It is not clear whether differences in viral spreading depend on population age, genetic influences, specific environmental factors (e.g., season of the year), socioeconomic conditions, or a combination of these.

Some authors hypothesized that differences in models of SARS-CoV-2 diffusion may be explained also on the basis of ethnic influences (Pareek et al., 2020). Under such perspective, it seems rational to compare the Italian experience to that of Uruguay. These two countries have completely different geographical and socioeconomic conditions, but they share similar ethnic background. In fact, about 40% of population of Uruguay has some degree of Italian ancestry, particularly deriving from Piedmont, Veneto, and Lombardy, which are among the Italian regions with highest prevalence of COVID-19. (Di Comite & Moreno, 1995). Moreover, viral strains identified in Italy and South America have a very strong phylogenetic proximity, the Uruguayan strain most probably deriving from Europe (Genomic epidemiology of novel coronavirus, 2020; Montevideo Portal, 2020; Zehender et al., 2020).

2 | DIFFUSION OF SARS-COV-2 IN ITALY AND IMPACT ON DENTAL PRACTICE

It is still debated when the novel coronavirus started to actively circulate in Italy (Zehender et al., 2020). The first two cases (a couple of Chinese travelers from the Hubei region arrived in Italy on January 23rd) which were thought to be “isolated” cases were confirmed on January 31, 2020 (Giovanetti, Benvenuto, Angeletti, & Ciccozzi, 2020). One month later (20 February), the first Italian case of COVID-19 was diagnosed in Lombardy, in an otherwise healthy 38-year-old man (so-called “case 1”) (Farina et al., 2020)⁷. The first death associated with the novel coronavirus infection was reported after only 4 days (Europost, 2020).

In the following 2 months, Italy faced the most tremendous socioeconomic and health crisis since World War II. According to the Civil Protection (the Italian surveillance system for the novel coronavirus outbreak), as of May 7th, 215.858 persons in Italy were infected and 29.981 patients died of COVID-19 (mortality rate: 13.88%) (Italian Civil Protection, 2020). The impact on the public health system has been dramatic, with 4.068 patients in intensive care units and 28.748 patients allocated in other departments, at the moment of highest emergency (April 4) (Europost, 2020). All in all, after only 44 days from the diagnosis of “case 1,” 32.816 patients were hospitalized for COVID-19

causing an amount of health needs, which could barely be sustained, in some regions (Italian Civil Protection, 2020).

Very surprisingly, not all Italian regions were affected by the SARS-CoV-2 diffusion in the same way, the northern part (Lombardy, Emilia-Romagna, Veneto and Piedmont) being more affected. For example, three regions with similar population from the North, Center, and South (Emilia-Romagna, Lazio and Apulia) counted 26.487, 7.034, and 4.245 infected and 3.766, 543, and 441 deaths for COVID-19, respectively (May 7) (Italian Civil Protection, 2020). Reasons for such disparities are mostly unknown even if the number of viral tests performed in each region may have played some role (Emilia-Romagna: 217.039; Lazio: 165.340; Puglia: 72.796) (Italian Civil Protection, 2020).

Starting from March 9th up to May 4th (so-called "Phase 1"), nationwide lockdown (including schools and university) was decreed by the Italian government. At the beginning of the subsequent "Phase 2" (easing of restrictive measures), after 55 days of lockdown, the outbreak effects were significantly reduced, particularly in terms of number of patients needing intensive cares (1.479) and patients hospitalized (16.823) (Italian Civil Protection, 2020).

Both private and public dental activities were profoundly affected by the outbreak. On one side, the lockdown measures and the diffuse fear of infection prevented most patients from seeking dental cares. On the other hand, guidelines developed by national dental associations suggested to strictly limit dental activities to emergency cares (e.g. abscesses and acute pain) encouraging management via telemedicine (Izzetti, Nisi, Gabriele, & Grazianim, 2020). Also, measures for preventing SARS-CoV-2 spreading (e.g. use of specific DPI, and spatial and time distancing between patients) were recommended to be strongly implemented, as dental settings were classified among places at higher risk of viral diffusion, because of procedures generating aerosols and droplets.

The convergence of these factors led to a previously unfaced, radical crisis in the dental field. A confidential survey performed by one of the authors on 10 dental private practices in the Province of Parma highlighted a dramatically low number of accesses (average of 3 per month).

It is worthy to mention that, in specific regions (e.g. Emilia Romagna), most dentists working for the public health system were employed in the management of patients with mild manifestations of COVID-19, through various activities such as performing oropharyngeal and nasal swabs and/or telephone surveillance.

A possible short-term effect of the outbreak strictly related to the lockdown period, specifically concerns oral medicine. It is highly probable that patients with chronic inflammations, potentially malignant disorders and undiagnosed malignant lesions of the oral mucosa, will receive a somewhat late diagnosis, which can profoundly impact on treatment.

3 | DIFFUSION OF SARS-COV-2 IN URUGUAY AND IMPACT ON DENTAL PRACTICE

SARS-CoV-2 entered Uruguay in the first days on March (between 3 and 7) through 4 passengers from Europe (two from Milan, one

from Madrid, and the other from Barcelona). The infection was probably in the incubation phase, as patients did not report symptoms. (Uruguayan National Emergency System, 2020). One patient attended a wedding with almost 500 guests in Montevideo, the Uruguayan capital, which has approximately 1.300.000 inhabitants (40% of the national population). Two other infected persons traveled for 6 hr, by public transport, from the capital to the other side of the country, in the city of Salto (third most populous city in Uruguay, with approximately 102.000 inhabitants) (National Institute of Statistics of Uruguay, 2020).

On March 13th, the Ministry of Public Health officially confirmed the first cases of COVID-19 and the government declared the status of health emergency. On March 28th (15 days after the diagnosis of the first cases), the first death associated with the novel coronavirus was recorded. (Uruguayan National Emergency System, 2020).

On March 14th, the country was declared in "Phase 2: risk of spread" and by presidential decree, all activities in schools and in the University of the Republic (the only public Uruguayan University), as well as all aggregation activities, were suspended by presidential decree. (Uruguayan National Emergency System, 2020). On March 15th, the health authorities confirmed the beginning of "Phase 3: Multisectoral Coordinated Response." In addition, all passengers on flights arriving from risk areas had to complete forms for their mandatory 14 days isolation and subsequent control. On March 20th, all flights from Europe were suspended. On March 24th, borders were closed for foreign citizens (Uruguayan National Emergency System, 2020).

As of May 7th, 673 people were confirmed to be infected by SARS-CoV-2 and 17 patients died for COVID-19 (mortality rate: 2, 53%) (Uruguayan National Emergency System, 2020).

With regard to professional dental practice, at present, only emergency cares are provided. Basically, the protocol consists of recording anamnesis by telephone and, in case of need, to prescribe analgesics, antibiotics, and/or anti-inflammatories. On the other hand, when it is not possible to manage cases by phone, patients are treated in a dental setting, following specific protocols issued by the Ministry of Health and the Faculty of Dentistry (Faculty of Dentistry & University of the Republic, 2020; Uruguayan Ministry of Public Health, 2020).

In Uruguay, the entire population has health coverage either in public or private hospitals. Cases of dental emergencies are referred to these hospitals.

4 | CONCLUSIONS

North of Italy and Uruguay share very similar ethnic background, but they have quite different socioeconomic and climatic conditions as well as general population characteristics (Di Comite & Moreno, 1995). Even though the SARS-CoV-2 subtypes are the same and the measures for outbreak restraint are very similar in both countries, the epidemiology and impact of COVID-19 have been dramatically different, so far. On the basis of the current knowledge, it

is not possible to elucidate which factors can influence the patterns of the novel coronavirus diffusion in different countries. The present, provisional epidemiologic data seem to suggest that the ethnic background should not be of paramount importance in the outbreak diffusion.

AUTHOR CONTRIBUTIONS

Marco Meleti: Conceptualization, formal analysis, investigation, supervision, validation, writing – original draft, writing – review & editing. **Diana Cassi:** Conceptualization, data curation, investigation, methodology, writing – original draft; writing – review & editing. **Luis Bueno:** Conceptualization, data curation, writing – original draft. **Ronell Bologna-Molina:** Conceptualization, data curation, formal analysis, investigation, supervision, writing – original draft, writing – review & editing.

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