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## Forgoing healthcare during the COVID-19 pandemic in Geneva, Switzerland – A cross-sectional population-based study

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## 1. Introduction

Owing to the rapid transmission of the SARS-CoV-2, responsible of the coronavirus disease 2019 (COVID-19), healthcare systems experienced major disruptions worldwide, including the temporary closure of medical practices, and cancellation or postponement of non-emergency and elective procedures (Baggio et al., 2021; Feral-Pierrssens et al., 2020). These have induced individuals to forgo healthcare in preventive medicine, chronic disease diagnosis and management, and emergency medicine, as reported in several countries (Baggio et al., 2021; Gonzalez et al., 2021; Smolić et al., 2021). In Switzerland, a study conducted among vulnerable outpatients in the Geneva University Hospitals in June 2020 indicated that 38.5% had renounced healthcare since the start of the pandemic. (Guessous et al., 2012). However, this study relied on patient populations, whereas data from the general population remains limited. One such study in the United States showed that 41% of adults forwent healthcare between March and mid-June 2020 (Anderson et al., 2021). To date, no study has reported on the prevalence of forgoing healthcare during the COVID-19 pandemic in the general population of countries with universal healthcare coverage. This information is important to understand the extent to which the pandemic-related disruptions in the healthcare system may have impacted access to healthcare, particularly among vulnerable and socioeconomically underprivileged population groups. Indeed, forgoing or delaying healthcare may have health consequences (Chen et al., 2011). In particular, forgoing healthcare for chronic and emergency conditions can lead to increased complications and costs (Ahn et al., 2020; Gheorghe et al., 2021), while missing preventive care appointments, such as cancer screenings, can result in a delayed diagnosis and poorer prognosis (Baggio et al., 2021). In this paper, we used a population-based sample of the adult population living in Geneva, Switzerland to estimate the prevalence of forgoing healthcare during the COVID-19 pandemic and to assess the effect of anti-SARS-CoV-2 serological status, general health, and sociodemographic factors on the likelihood of forgoing healthcare. We use the term “renounced care” as synonymous with forgone or delayed healthcare.

## 2. Methods

### 2.1. Study design

Our study population is part of SARS-CoV-2 serosurvey studies conducted in Geneva, Switzerland. Participants were randomly selected from this population at two periods. First, between April and June 2020, Geneva residents who were former participants of a yearly health survey representative of the general population, were invited for a free anti-SARS-CoV-2 serology, along with their family members, with a participation rate of 30–40% (Stringhini et al., 2020). Second, between November and December 2020, former participants were invited again to a second serosurvey (participation rate 69%) and additional Geneva residents were randomly selected from a sex- and age-stratified cantonal register and invited with a participation rate of 17–19% (Stringhini et al., 2021). Adult participants from both studies were subsequently invited to participate in a longitudinal follow-up; the Specchio-COVID19 study, with a participation rate of 61% (Baysson et al., 2021). The Specchio-COVID19 study was approved by the Cantonal Research Ethics Commission of Geneva, Switzerland (Project ID 2020–00881) and informed consent was obtained from all participants. Participants completed a baseline questionnaire between November 2020 and January 2021 that collected demographic, socioeconomic, health and lifestyle information, including forgoing healthcare.

### 2.2. Study variables

All variables, apart from the SARS-CoV-2 serological status, were extracted from the Specchio-COVID19 baseline questionnaire. We

defined forgoing healthcare as having answered “yes” to the question, “Since the start of the COVID-19 pandemic, have you renounced certain types of healthcare or treatment (by choice or constraint)?”. If the answer was “yes”, a following multiple-choice question collected information about the type of forgone healthcare. Options included: surgery; general practitioner; specialist; medication; dental; screening; inpatient rehabilitation; outpatient rehabilitation; medical devices; health center care; home nursing care; and other, from which we created three extra categories: “physiotherapy”, “mental care”, and “alternative care”, such as acupuncture or therapeutic massage. A second multiple-choice question collected information about the reason for forgoing healthcare: cancelled or postponed appointment by the healthcare provider due to the COVID-19 pandemic; fear of being infected when seeking healthcare; financial reasons; inability to attend the appointment because of quarantine, isolation, family or professional reasons, referred to as organizational issues; participant self-isolating due to possible SARS-CoV-2 exposure; and other, from which we created two more categories: “conscious”, for participants postponing healthcare to avoid overloading healthcare facilities, and “lethargy” for participants who suggested a disinclination for making the effort to seek healthcare (Appendix A). It was assumed that participants who did not report forgoing healthcare in the first place would not have selected any of these choice if they were asked to.

As potential risk factors, we included: country of birth, education (divided into *lower*, i.e. compulsory or no formal education; *medium* i.e. secondary education; and *higher* i.e. tertiary education), general health (derived from the question “In general, outside the pandemic context, how would you evaluate your health?”; answers were coded as *good* if “very good” or “good”, *medium* if “medium” and *poor* if “poor” or “very poor”), and financial situation (this was defined as *very good* if participants answered they could save money to the question “Currently, how would you assess your financial situation?”, *good* if they could afford minor unexpected expenses, and *average to poor* if they chose one of following statements; “I have to be careful with my expenses and an unexpected event could put me in financial difficulty” or “I cannot cover my needs with my income and I need external support”) (Appendix A). We also included anti-SARS-CoV-2 serological status as covariate, measured as following. In the first serosurvey, seropositivity was detected with an enzyme-linked immunosorbent assay (Euroimmun, Lübeck, Germany #EI 2606–9601 G). Positive and indeterminate (IgG ratio for detection  $\geq 0.5$ ) results were ascertained with a recombinant immunofluorescence assay, as previously detailed (Stringhini et al., 2020). For the second serosurvey, values  $\geq 0.8$  U/mL of the Elecsys anti-SARS-CoV-2 S (Roche Diagnostics, Rotkreuz, Switzerland) (Elecsys® Anti-SARS-CoV-2 S - Immunoassay for the Quantitative Determination of Antibodies to the SARS-CoV-2 Spike Protein, 2020) were considered positive.

### 2.3. Statistical analysis

Upon excluding one participant with missing data on forgoing healthcare, we conducted a series of descriptive analyses. Chi-square tests were used to compare characteristics between those that did forgo healthcare, and those that did not. A multivariable logistic regression model separately assessed the above-mentioned risk factors for forgoing healthcare in general, adjusting for age and sex. This model was further stratified by the four most common reasons for forgoing healthcare. Analyses were done with R 4.0.3.

## 3. Results

In total, we included 5393 participants [55.3% women (0.4% intersex); mean age (standard deviation): 51.7 (15.2) years], of which 434 (8.0%) declared to have forgone healthcare since the start of the COVID-19 pandemic (Table 1). Among participants who reported forgoing healthcare, 63.6% were women, 25.8% were in a self-reported

**Table 1**

Participants' characteristics according to forgoing healthcare status, type of forgone healthcare and reason for forgoing healthcare - Specchio-COVID19 Study, Geneva population, Switzerland, 2020.

	N	Forgone healthcare		p-value
		No N (%)	Yes N (%)	
Total	5393	4959 (92.0)	434 (8.0)	
Age				
18–34	726	672 (92.6)	54 (7.4)	0.107
35–64	3407	3113 (91.4)	294 (8.6)	
65+	1260	1174 (93.2)	86 (6.8)	
Sex				
Men	2386	2231 (93.5)	155 (6.5)	0.001
Women	2985	2709 (90.8)	276 (9.2)	
Intersex	22	19 (86.4)	3 (13.6)	
Country of birth				
Switzerland	3215	2971 (92.4)	244 (7.6)	0.147
Other	2178	1988 (91.3)	190 (8.7)	
Education				
Higher	12	11 (91.7)	1 (8.3)	0.002
Medium	2002	1865 (93.2)	137 (6.8)	
Lower	2120	1968 (92.8)	152 (7.2)	
Other	845	733 (86.7)	112 (13.3)	
Financial situation				
Very good	426	393 (92.3)	33 (7.7)	<0.001
Good	530	449 (84.7)	81 (15.3)	
Medium to poor	66	50 (75.8)	16 (24.2)	
No answer	4562	4190 (91.8)	372 (8.2)	
General health				
Good	831	769 (92.5)	62 (7.5)	0.544
Average	281	261 (92.9)	20 (7.1)	
Poor	1675	1574 (94.0)	101 (6.0)	
Anti-SARS-CoV2-serology				
Negative	3425	3113 (90.9)	312 (9.1)	0.002
Positive	4797	4460 (93.0)	337 (7.0)	

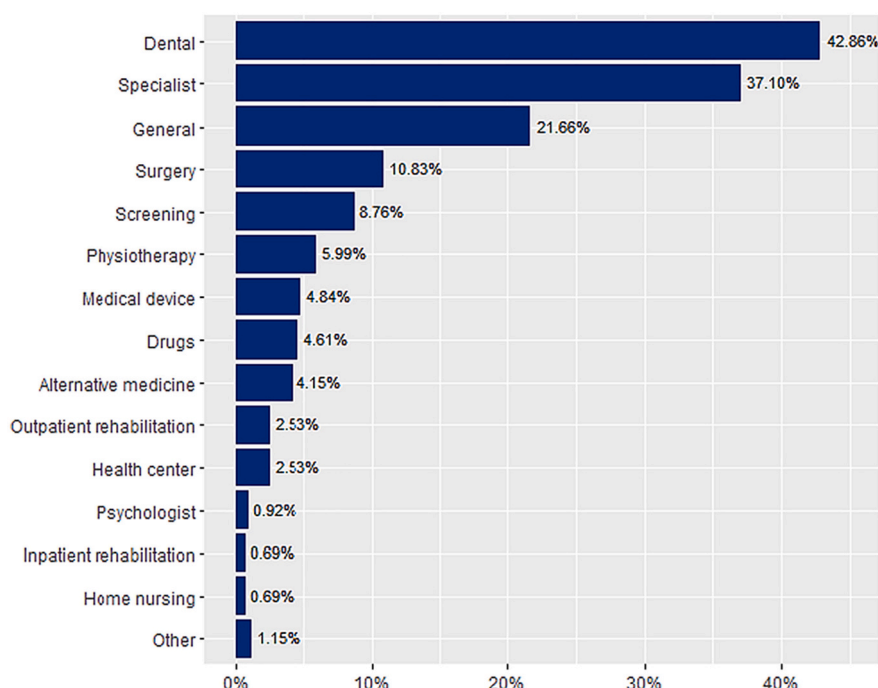
Results are Numbers (%). P-values are from Chi-Square Test. All variables are self-reported, except anti-SARS-CoV-2 serology (see Methods).

average-to-poor financial situation, and 22.4% reported an average or low health.

The most common types of forgone healthcare were dental care (42.9%), appointments with a specialist (37.1%), general practitioner (21.7%), and surgical procedures (10.8%) (Fig. 1). Reasons for forgoing healthcare could stem from the supply side, as appointment cancellation (53.9%), or the demand side (67.1%), with factors such as fear of infection (35.3%), organizational issues (11.1%), and financial reasons (8.8%). Additionally, 5.3% of participants who renounced healthcare reported doing so to avoid overloading the healthcare system (Fig. 2).

The multivariable analysis showed that participants reporting an average (OR = 2.54; 95% CI: 1.94–3.31) or poor health (OR = 4.40; 95% CI: 2.39–7.67), or who were in a self-reported medium to poor financial situation (OR = 2.04; 95% CI: 1.56–2.65) were more likely to forgo healthcare than healthy participants or those with a very good financial situation (Table 2). Participants with a medium education level were less likely than participants with a higher education level to forgo healthcare (OR = 0.63; 95% CI: 0.50–0.79); the same pattern was observed for those with a low versus high level of education, though not significant. Country of birth and anti-SARS-CoV-2 serological status were not associated with forgoing healthcare.

Other patterns emerged when assessing reasons for forgoing healthcare (Table 2). Compared with participants born in Switzerland, those born elsewhere were more likely to forgo healthcare due to fear (OR = 1.53; 95% CI: 1.11–2.12) and for organizational issues (OR = 2.04; 95% CI: 1.07–3.97). SARS-CoV-2 seropositive participants were less likely to forgo healthcare due to fear (OR = 0.48; 95% CI: 0.26–0.82) than seronegative, whereas participants with an average reported health were more likely to forgo healthcare due to fear (OR = 2.79; 95% CI: 1.82–4.16) and cancelled appointments (OR = 2.95; 95% CI: 2.09–4.11) compared with those declaring a good health. On the opposite, participants with a medium education level were less likely to forgo healthcare due to cancelled appointments (OR = 0.60; 95% CI: 0.43–0.81) or fear (OR = 0.46; 95% CI: 0.29–0.69), compared with participants with a higher education level. When compared with the most financially privileged participants, individuals in a medium to poor financial situation were more likely to forgo healthcare for financial reasons (OR = 42.18; 95% CI: 12.83–260.20), organizational issues (OR



**Fig. 1.** Types of forgone healthcare among participants reporting forgoing healthcare ( $N = 434$ ). Participants could select multiple choices in the questionnaires.

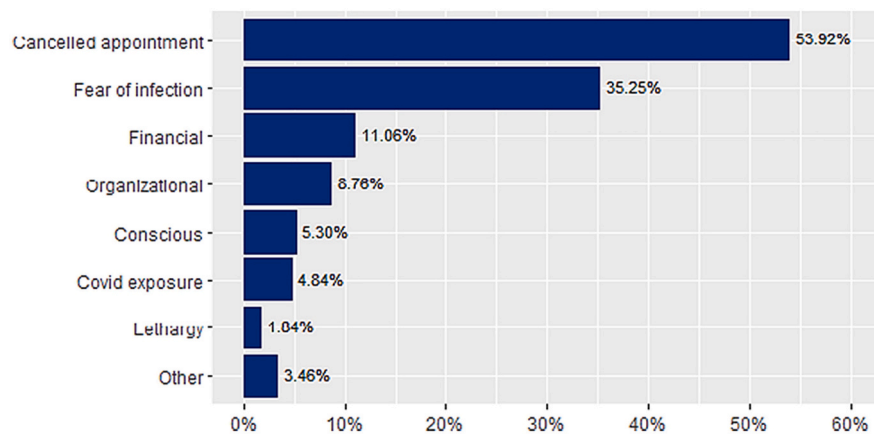


Fig. 2. Reasons for forgoing healthcare among participants reporting forgoing healthcare ( $N = 434$ ). Participants could select multiple choices in the questionnaires.

Table 2

Association of sociodemographic risk factors, chronic disease and SARS-CoV-2 serology with forgoing healthcare, overall and for specific reasons - Specchio-COVID19 Study, Geneva population, Switzerland, 2020 ( $N = 5'393$ ).

	Any reason OR (95% CI)	Fear of infection OR (95% CI)	Organizational OR (95% CI)	Cancelled appointment OR (95% CI)	Financial OR (95% CI)
Country of birth					
Switzerland	–	–	–	–	–
Other	1.15 (0.94–1.40)	1.53 (1.11–2.12)*	2.04 (1.07–3.97)*	1.09 (0.84–1.42)	1.08 (0.60–1.92)
Education					
Higher	–	–	–	–	–
Medium	0.63 (0.50–0.79)**	0.46 (0.29–0.69)**	0.47 (0.19–1.01)	0.60 (0.43–0.81)**	0.79 (0.40–1.46)
Lower	0.75 (0.45–1.17)	1.04 (0.50–1.91)	0.38 (0.02–1.80)	0.76 (0.38–1.35)	0.35 (0.02–1.64)
Other	0.89 (0.05–4.61)	Undefined <sup>a</sup>	Undefined <sup>a</sup>	Undefined <sup>a</sup>	Undefined <sup>a</sup>
Financial situation					
Very good	–	–	–	–	–
Good	1.04 (0.82–1.32)	0.88 (0.59–1.30)	1.59 (0.68–3.99)	0.99 (0.72–1.36)	4.20 (1.08–27.56)
Medium to poor	2.04 (1.56–2.65)**	1.51 (0.97–2.33)	2.72 (1.07–7.17)*	1.85 (1.30–2.63)**	42.18 (12.83–260.20)**
No answer	1.09 (0.72–1.60)	1.06 (0.55–1.91)	2.87 (0.93–8.44)	1.01 (0.57–1.69)	2.01 (0.09–21.16)
General health					
Good	–	–	–	–	–
Average	2.54 (1.94–3.31)**	2.79 (1.82–4.16)**	1.70 (0.57–4.08)	2.95 (2.09–4.11)**	1.02 (0.30–2.56)
Poor	4.40 (2.39–7.67)**	2.63 (0.78–6.56)	2.54 (0.14–12.24)	6.80 (3.48–12.40)**	Undefined <sup>a</sup>
Serology					
Negative	–	–	–	–	–
Positive	0.89 (0.66–1.17)	0.48 (0.26–0.82)*	1.76 (0.80–3.56)	0.93 (0.63–1.33)	1.09 (0.49–2.18)

Results are odds ratios (OR) and 95% confidence intervals (CI) from multivariable logistic regression, adjusted for age and sex.

\* Indicates  $p < 0.05$ ; \*\* Indicates  $p < 0.01$ .

<sup>a</sup> Sample size was too small in this category to allow for informative estimates.

= 2.72; 95% CI: 1.07–7.17) and cancelled appointment (OR = 1.85; 95% CI: 1.30–2.63).

#### 4. Discussion

In a population-based sample of the adult population of Geneva, Switzerland, 8.0% of participants reported having forgone healthcare eight to ten months after the start of the COVID-19 pandemic, which contrasts with the much higher 41% reported by adults in the United States four to five months into the pandemic (Anderson et al., 2021). Since our study was conducted later into the pandemic, healthcare that was initially forgone may have been rescheduled, leading to fewer reports of forgone healthcare. This remains concerning as delayed healthcare can also lead to unfavorable health outcome (Chen et al., 2011; Gheorghe et al., 2021). Additionally, unlike the United States, healthcare coverage in Switzerland is universal (Papanicolas et al., 2018), which may also explain part of this difference. As previously reported in Europe (Baggio et al., 2021; Smolić et al., 2021), we found

that participants with an average or bad health, and those in a self-reported disadvantaged financial situation were more likely to forgo healthcare than healthy and affluent participants. Interestingly, around 5% of participants who renounced healthcare reported having forgone their healthcare appointments with the intention to prevent overburdening the system and to allow access for those with greater medical care needs. As this reason was not explicitly listed in the survey question but rather reported in the “other” option, the proportion of people who chose to forgo healthcare for altruistic reasons may be higher, especially concerning non-urgent healthcare. The most frequent type of forgone healthcare were dental, specialist, and general medicine, which reflects findings in the United States (Gonzalez et al., 2021). A study conducted before the pandemic among adults in Geneva found that 13.8% and 10.9% reported forgoing healthcare and dental care for economic reasons, respectively, which are a higher rate than in our sample (Guessous et al., 2014; Guessous et al., 2012). The discrepancy could be attributed to our shorter study period and to how our survey question was interpreted; it defined forgoing healthcare since the beginning of the



pandemic, but participants who would have renounced healthcare regardless may have not felt concerned.

One-third of participants who reported forgoing healthcare did so due to fear of SARS-CoV-2 infection. This reason was less common among SARS-CoV-2 seropositive participants than seronegative; perhaps because they felt protected by the previous infection. Reverse causality is also possible, behavior that increases exposure to SARS-CoV-2 and thereby, the risk of infection. Fear of being exposed to the virus in healthcare facilities is not exclusive to the COVID-19 pandemic; it has been well described in other infectious disease epidemics, including HIV and SARS (Ornell et al., 2020). Participants with a higher level of education were more likely to forgo healthcare due to fear; this was unexpected, given that this population also claimed to have fewer health concerns during the COVID-19 pandemic than those with a lower level of education (Bou-Hamad et al., 2021; Yildirim et al., 2021). However, avoiding healthcare centers could be considered as a COVID-19 preventive behavior, which seems to be more common among people with higher education levels (Yildirim et al., 2021). Participants who reported average or poor health were more likely to renounce healthcare due to fear, probably because they felt more at-risk of severe COVID-19 outcomes (Gao et al., 2021). A similar pattern was observed among participants born outside of Switzerland, which may reflect increased difficulties to navigate and access reliable information in a foreign healthcare system (Zanchetta and Poureslami, 2006), especially during health crises. Clear and widespread messaging about the risks of forgoing needed healthcare are necessary to limit this phenomenon. The increased likelihood for migrant populations to forgo healthcare due to fear or organizational issues, as compared to people born in Switzerland is suggestive of the large impact the COVID-19 pandemic may have had on immigrants and their families. Previous studies have noted risks of SARS-CoV-2 infection is higher for immigrants than their native-born counterparts, due to a range of socio-economic vulnerabilities (OECD, 2020). However, because of the cross-sectional nature of this survey, we are not able to determine whether disparities by migration status, already present pre-pandemic, have been aggravated or not.

Over half of all forgone healthcare was a result of the healthcare facility cancelling appointments, which parallels findings in the United States (Gonzalez et al., 2021). While all other variables examined pertain to the demand of healthcare by a patient, the cancellation of appointments by a healthcare facility concerns difficulties in supply at the provider side. This is a subtle, but relevant distinction that warrants future research. Improving healthcare-specific supply-chain strategies and management practices are urgently needed to optimize scarce resources when demands surge. In this study, participants reporting an average or poor health were more likely to have a medical appointment cancelled than healthy participants. This could be attributed to those with health condition having more scheduled consultations that were cancelled when healthcare facilities reallocated resources for COVID-19 patients, and may point to underlying gaps in both the capacity and accessibility of public health infrastructure in the wake of an epidemic. More research is needed to estimate how a decrease in the frequency of medical follow-up may affect people with existing health condition.

Many hospitals have reported between 23% to 49% decreased healthcare utilization during the COVID-19 pandemic (Ahn et al., 2020). Decreases in consultations with both general practitioners and physicians alike may have adverse health consequences, including complications and hospitalizations (National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division, Board on Health Care Services, Committee on Health Care Utilization and Adults with Disabilities, 2018). There is great concern that this decreased interaction with the healthcare system could also result in decreased access to routine childhood immunization services (Schmid-Küpke et al., 2021), and screening for comorbidities. The risk of forgoing healthcare can result in unfavorable health outcomes; a publication from the United States' Urban Institute's September 2020 Coronavirus Tracking Survey (Gonzalez et al., 2021) illustrated that one in three adults who forwent

or delayed healthcare during the COVID-19 pandemic had negative affects to their health, and ability to work or perform other daily activities. Another study found that 33% of the excess deaths observed between March and July 2020 in the United States was not attributed to COVID-19, whether due to undocumented SARS-CoV-2 infection or healthcare disruption (Woolf et al., 2020). Other side-effects of the pandemic such as an increase in household violence or suicides might also play a role (David et al., 2021). In this context, hospitals and medical centers are increasingly using telemedicine-based services to improve patient care and provide consultations to patients who are unable to attend in-person appointments (Nittas and von Wyl, 2020), though this aspect was not evaluated in the current study.

To our knowledge, this is among the few studies that present the type of renounced healthcare and reasons for forgoing it during the COVID-19 pandemic in a population-based sample (Anderson et al., 2021). The cross-sectional design is a limitation to our findings, as it prevented us from examining changes in forgoing healthcare patterns since the start of the COVID-19 pandemic. The baseline questionnaire also limited the scope of our analysis; we were unable to assess if forgone healthcare had any negative health impacts, clarify whether those that have forgone care actually had healthcare needs, nor make the distinction between renounced or delayed healthcare. Forgoing healthcare may have been underestimated in our study due to social desirability recall bias and because of the potential underrepresentation of underprivileged populations. Finally, while our study did not explicitly exclude participants who spoke other languages, the questionnaire was administered in French. The chances of language barriers limiting our results are slim, because study participants with any concerns were able to contact the research team directly.

## 5. Conclusion

In conclusion, in the Geneva adult population, only 8.0% of people reported forgoing healthcare since the beginning of the COVID-19 pandemic, 8 to 10 months after the first lockdown. People with a disadvantaged financial situation, and those reporting an average or poor health were more likely to forgo healthcare than their more affluent and healthier counterparts. Forgoing healthcare has long-standing repercussions for morbidity and mortality, and these results highlight the risk of widening gaps between privileged and vulnerable populations. Further exploration of underlying reasons for delaying or avoiding healthcare altogether are needed for epidemic-preparedness planning. More research also is needed to better understand the implications of forgoing healthcare for individuals with health condition. In the interim, increasing accessibility of medical and telehealth services, especially for vulnerable groups, might help prevent delay of needed care.

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## Ethics and dissemination

The Specchio-COVID19 study was approved by the Cantonal Research Ethics Commission of Geneva, Switzerland (CCER Project ID 2020-00881).

## Author contributions

All authors have read, critically revised and approved the final version of this manuscript.

## CRediT authorship contribution statement

**Lakshmi Krishna Menon:** Conceptualization, Methodology, Writing – original draft. **Viviane Richard:** Conceptualization, Methodology, Formal analysis, Writing – original draft. **Carlos de Mestral:** Conceptualization, Methodology, Supervision. **Helene Baysson:** Methodology. **Silvia Stringhini:** Conceptualization, Methodology, Supervision, Project administration, Funding acquisition.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Appendix A. Original survey questions in French

**Depuis le début de la pandémie COVID-19, avez-vous renoncé (par choix ou contrainte) à certains types de soins ou traitements?**

- ☐ Oui.  
☐ Non.

**Si oui, pour quelle raison? (Plusieurs réponses possibles)**

- ☐ Mon rendez-vous a été reporté ou annulé en raison de la pandémie de COVID-19.  
☐ J'ai eu peur de me faire contaminer en me déplaçant ou en allant me faire soigner.  
☐ J'ai préféré reporter mon rendez-vous pour des raisons financières.  
☐ Je ne pouvais pas me rendre au rendez-vous (garde d'enfant, empêchement familial, professionnel, quarantaine ou auto-isolément).  
☐ J'ai été exposé-e au SARS-CoV-2.  
☐ Autre.

Si autre, merci de préciser: .....

**Si oui, de quels types de soins ou de traitement s'agissaient-ils? (Plusieurs réponses possibles)**

- ☐ Chirurgie.  
☐ Soins délivrés par un généraliste (médecine générale et interne).  
☐ Soins délivrés par un spécialiste (cardiologie, gynécologie, gastro-entérologie, ophtalmologie, dermatologie, urologie, ORL, etc.)  
☐ Médicaments (adaptation ou renoncement).  
☐ Soins dentaires.  
☐ Dépistage du cancer (sein, côlon, etc.)  
☐ Réadaptation en milieu hospitalier.  
☐ Réadaptation ambulatoire.  
☐ Appareillages (auditif, lunettes, déambulateur, etc.)  
☐ Soins dans un centre médicalisé.  
☐ Soins infirmiers à domicile.  
☐ Autre.

Si autre, merci de préciser: .....

**Dans quel pays êtes-vous né-e?**

- ☐ Suisse.  
☐ Portugal.  
☐ Italie.  
☐ France.  
☐ Espagne.  
☐ Allemagne.  
☐ Autre.

Si autre, merci de préciser: .....

**Quel est le diplôme le plus élevé que vous avez obtenu?**

- ☐ Aucun.  
☐ Scolarité obligatoire (école primaire et/ou cycle d'orientation).  
☐ Secondaire - Maturité professionnelle ou spécialisée (Ecole de culture générale (ECG), Ecole de commerce, ou équivalent).  
☐ Secondaire - Maturité gymnasiale (collège); baccalauréat en France.  
☐ Formation professionnelle - Apprentissage certifié (CFC; CAP ou équivalent en France).  
☐ Formation professionnelle - Apprentissage non-certifié.  
☐ Formation professionnelle - Formations professionnelles supérieures (écoles supérieures, brevets ou diplômes/maîtrises fédéraux suite à un CFC; BTS en France).  
☐ Tertiaire - Université, Haute Ecole Spécialisée (HES), écoles polytechniques.  
☐ Tertiaire – Doctorat.  
☐ Autre.

Si autre, merci de préciser: .....

**Actuellement, diriez-vous que financièrement**

- ☐ Je suis à l'aise, l'argent n'est pas une source d'inquiétude et il m'est facile d'épargner.  
☐ Mes revenus permettent de couvrir mes dépenses et de pallier d'éventuels imprévus mineurs.  
☐ Je dois faire attention à mes dépenses et un imprévu pourrait me mettre en difficulté financière.  
☐ Je n'arrive pas à couvrir mes besoins avec mon revenu et j'ai besoin d'un soutien externe pour fonctionner (endettement, crédits, aides financières diverses).  
☐ Je ne souhaite pas répondre.

**De manière générale, c'est-à-dire hors contexte épidémique, comment évaluez-vous votre santé?**

- ☐ Très bonne.  
☐ Bonne.  
☐ Moyenne.  
☐ Mauvaise.  
☐ Très mauvaise.

## References

- Ahn, S., Kim, S., Koh, K., 2020. Changes in Healthcare Utilization, Spending, and Perceived Health during COVID-19: A Longitudinal Study from Singapore (SSRN Scholarly Paper No. ID 3669090). Social Science Research Network, Rochester, NY. <https://doi.org/10.2139/ssrn.3669090>.  
Anderson, K.E., McGinty, E.E., Presskreischer, R., Barry, C.L., 2021. Reports of forgone medical care among US adults during the initial phase of the COVID-19 pandemic. JAMA Netw. Open 4, e2034882. <https://doi.org/10.1001/jamanetworkopen.2020.34882>.

- Baggio, S., Vernaz, N., Spechbach, H., Salamun, J., Jacquierioz, F., Stringhini, S., Jackson, Y., Guessous, I., Chappuis, F., Wolff, H., Gétaz, L., 2021. Vulnerable patients forgo health care during the first wave of the COVID-19 pandemic. *Prev. Med.* 150, 106696 <https://doi.org/10.1016/j.ypmed.2021.106696>.
- Baysson, H., et al., 2021. The Specchio-COVID19 Study Cohort: A Web-Based Prospective Study of SARS-CoV-2 Serosurveys Participants in the Canton of Geneva (Switzerland) (Submitted).
- Bou-Hamad, I., Hoteit, R., Harajli, D., 2021. Health worries, life satisfaction, and social well-being concerns during the COVID-19 pandemic: insights from Lebanon. *PLoS One* 16, e0254989. <https://doi.org/10.1371/journal.pone.0254989>.
- Chen, J., Rizzo, J.A., Rodriguez, H.P., 2011. The health effects of cost-related treatment delays. *Am. J. Med. Qual.* 26, 261–271. <https://doi.org/10.1177/1062860610390352>.
- David, K.B., Aborode, A.T., Olaye, D.Q., Enang, N.V., Oriyomi, A.K., Yunusa, I., 2021. Increased risk of death triggered by domestic violence, hunger, suicide, exhausted health system during COVID-19 pandemic: why, how and solutions. *Front. Sociol.* 6, 648395 <https://doi.org/10.3389/fsoc.2021.648395>.
- Elecsys® Anti-SARS-CoV-2 S - Immunoassay for the Quantitative Determination of Antibodies to the SARS-CoV-2 Spike Protein, 2020.
- Feral-Pierrssens, A.-L., Claret, P.-G., Chouihed, T., 2020. Collateral damage of the COVID-19 outbreak: expression of concern. *Eur J Emerg Med.* <https://doi.org/10.1097/MEJ.0000000000000717>.
- Gao, Y., Ding, M., Dong, X., Zhang, J., Azkur, A.K., Azkur, D., Gan, H., Sun, Y., Fu, W., Li, W., Liang, H., Cao, Y., Yan, Q., Cao, C., Gao, H., Brügggen, M.-C., van de Veen, W., Sokolowska, M., Akdis, M., Akdis, C.A., 2021. Risk factors for severe and critically ill COVID-19 patients: a review. *Allergy* 76, 428–455. <https://doi.org/10.1111/all.14657>.
- Gheorghe, A., Maringe, C., Spice, J., Purushotham, A., Chalkidou, K., Rachet, B., Sullivan, R., Aggarwal, A., 2021. Economic impact of avoidable cancer deaths caused by diagnostic delay during the COVID-19 pandemic: a national population-based modelling study in England, UK. *Eur. J. Cancer* 152, 233–242. <https://doi.org/10.1016/j.ejca.2021.04.019>.
- Gonzalez, D., Karpman, M., Kenney, G.M., Zuckerman, S., 2021. Delayed and Forgone Health Care for Nonelderly Adults during the COVID-19 Pandemic [WWW Document]. Urban Inst.. URL: <https://www.urban.org/research/publication/delayed-and-forgone-health-care-nonelderly-adults-during-covid-19-pandemic> (accessed 7.12.21).
- Guessous, I., Gaspoz, J.M., Theler, J.M., Wolff, H., 2012. High prevalence of forgoing healthcare for economic reasons in Switzerland: a population-based study in a region with universal health insurance coverage. *Prev. Med.* 55, 521–527. <https://doi.org/10.1016/j.ypmed.2012.08.005>.
- Guessous, I., Theler, J.-M., Izart, C.D., Stringhini, S., Bodenmann, P., Gaspoz, J.-M., Wolff, H., 2014. Forgoing dental care for economic reasons in Switzerland: a six-year cross-sectional population-based study. *BMC Oral Health* 14, 121. <https://doi.org/10.1186/1472-6831-14-121>.
- National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division, Board on Health Care Services, Committee on Health Care Utilization and Adults with Disabilities, 2018. Factors That Affect Health-Care Utilization. National Academies Press (US).
- Nittas, V., von Wyl, V., 2020. COVID-19 and telehealth: a window of opportunity and its challenges. *Swiss Med. Wkly.* 150 <https://doi.org/10.4414/smww.2020.20284>.
- OECD, 2020. What Is the Impact of the COVID-19 Pandemic on Immigrants and their Children?.
- Ornell, F., Schuch, J.B., Sordi, A.O., Kessler, F.H.P., 2020. “Pandemic fear” and COVID-19: mental health burden and strategies. *Braz. J. Psychiatry* 42, 232–235. <https://doi.org/10.1590/1516-4446-2020-0008>.
- Papancolas, I., Woskie, L.R., Jha, A.K., 2018. Health care spending in the United States and other high-income countries. *JAMA* 319, 1024–1039. <https://doi.org/10.1001/jama.2018.1150>.
- Schmid-Küpke, N.K., Matysiak-Klose, D., Siedler, A., Felgendreiff, L., Wieler, L., Thaiss, H. M., Betsch, C., 2021. Cancelled routine vaccination appointments due to COVID-19 pandemic in Germany. *Vaccine* 39, 100094. <https://doi.org/10.1016/j.jvax.2021.100094>.
- Smolić, S., Čipin, I., Medimurec, P., 2021. Access to healthcare for people aged 50+ in Europe during the COVID-19 outbreak. *Eur. J. Ageing*. <https://doi.org/10.1007/s10433-021-00631-9>.
- Stringhini, S., Wisniak, A., Piumatti, G., Azman, A.S., Lauer, S.A., Baysson, H., De Ridder, D., Petrovic, D., Schrempft, S., Marcus, K., Yerly, S., Arm Vernez, I., Keiser, O., Hurst, S., Posfay-Barbe, K.M., Trono, D., Pittet, D., Gétaz, L., Chappuis, F., Eckerle, I., Vuilleumier, N., Meyer, B., Flahault, A., Kaiser, L., Guessous, I., 2020. Seroprevalence of anti-SARS-CoV-2 IgG antibodies in Geneva, Switzerland (SEROCoV-POP): a population-based study. *Lancet Lond. Engl.* 396, 313–319. [https://doi.org/10.1016/S0140-6736\(20\)31304-0](https://doi.org/10.1016/S0140-6736(20)31304-0).
- Stringhini, S., Zaballa, M.-E., Perez-Saez, J., Pullen, N., de Mestral, C., Picazio, A., Pennacchio, F., Wisniak, A., Richard, A., Baysson, H., Loizeau, A., Balavoine, J.-F., Trono, D., Pittet, D., Posfay-Barbe, K., Flahault, A., Chappuis, F., Kherad, O., Vuilleumier, N., Kaiser, L., Azman, A.S., Guessous, I., Specchio-COVID19 Study Group, 2021. Seroprevalence of anti-SARS-CoV-2 antibodies after the second pandemic peak. *Lancet Infect. Dis.* 21, 600–601. [https://doi.org/10.1016/S1473-3099\(21\)00054-2](https://doi.org/10.1016/S1473-3099(21)00054-2).
- Woolf, S.H., Chapman, D.A., Sabo, R.T., Weinberger, D.M., Hill, L., Taylor, D.D.H., 2020. Excess deaths from COVID-19 and other causes, March–July 2020. *JAMA* 324, 1562–1564. <https://doi.org/10.1001/jama.2020.19545>.
- Yıldırım, M., Geçer, E., Akgül, Ö., 2021. The impacts of vulnerability, perceived risk, and fear on preventive behaviours against COVID-19. *Psychol. Health Med.* 26, 35–43. <https://doi.org/10.1080/13548506.2020.1776891>.
- Zanchetta, M.S., Pouraslami, I.M., 2006. Health literacy within the reality of Immigrants' culture and language. *Can. J. Public Health* 97, S28–S33. <https://doi.org/10.1007/BF03405370>.