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Short Communication

Vulnerable patients forgo health care during the first wave of the Covid-19 pandemic

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ABSTRACT

During the first wave of the Covid-19 pandemic, access to health care was limited, and patients encountered important delays for scheduled appointments and care. Empirical data relying on patients' reports of forgoing health care are scarce. This study investigated Covid-19-related self-reports of forgoing health care in a sample of vulnerable outpatients in Geneva, Switzerland. We collected data from 1167 adult outpatients, including clinically vulnerable patients (with chronic diseases), geriatric patients (involved in a health care network for people aged 60 or older), and socially vulnerable patients (involved in a migrant health program or a mobile outpatient community care center) in June 2020. Data on sociodemographic factors, forgoing health care, and anti-SARS-CoV-2 antibodies were collected. Of the patients, 38.5% reported forgoing health care. Forgoing health care was more frequent for younger patients, women, patients with a low level of education, and patients with a chronic disease ($p < .001$). There was no significant association between the presence of anti-SARS-CoV-2 antibodies and forgoing health care ($p = .983$). As the decrease in routine management of patients might have important and unpredictable adverse health consequences, avoiding delayed health care is crucial.

1. Introduction

During the first wave of the Covid-19 pandemic, access to health care was limited for non-Covid-19 patients. Clinical appointments and elective surgeries were cancelled or postponed to save health care resources and avoid the risk of viral transmission to health practitioners and patients (Negrini et al., 2020). Consequently, patients encountered delays in health care for the management of chronic diseases, emergency medicine, and preventive medicine (Ahn et al., 2020; Bruno and Rose, 2020; Cano-Valderrama et al., 2020; Feral-Pierssens et al., 2020; Lazzzerini et al., 2020; Metzler et al., 2020). In addition, patients were reluctant to seek care because of a semi-lockdown and due to fear of contracting Covid-19, willingness to preserve health care resources, and unawareness of health services still being available (Lazzzerini et al., 2020). To date, most studies relied on hospital data with a focus on

pediatrics and emergency care, rather than on patients' reports of forgoing health care (Ahn et al., 2020). Some recent studies showed a high proportion of forgone care (41% among US adults from March to mid-June 2020, Ke et al., 2021), but individual empirical data in countries with a universal health care coverage are still needed to achieve a better understanding of the problem. This study investigated Covid-19-related self-reports of forgoing health care in a large sample of adult outpatients, focusing on patients with chronic diseases and socially vulnerable outpatients in Geneva, a high-income region severely hit by the first wave of the pandemic (Salathé et al., 2020).

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2. Methods

2.1. Study design and participants

We conducted a prospective single-center study of outpatients of Geneva University Hospitals (HUG), Geneva, Switzerland. Data were collected after the first wave of the epidemic in June 2020. This study was a side project of a larger study which focused on seroprevalence rates of anti-SARS-CoV-2 antibodies among vulnerable patients (unpublished data).

Participants were eligible for study participation if 1) they were aged 18 years or older, 2) had an outpatient visit in one of the following divisions of the HUG: cardiology, endocrinology, geriatrics (age ≥ 60 years), immunology, infectious diseases (HIV clinic), primary care (migrant health program and mobile outpatient community care center), nephrology, neurology, oncology, pneumology, and rheumatology, and 3) had a chronic health condition (except for patients from the migrant health program and mobile outpatient community care center).

All participants gave written informed consent before participation. The Cantonal Ethics Research Committee of Geneva approved the study protocol (no. 2020-00932).

2.2. Procedures

All patients were invited to participate if they had a planned outpatient visit at the HUG in June 2020, until the desired sample size was reached. A physician first invited patients to participate and briefly presented the aims and procedures of the study. Those who agreed met a nurse to sign a written consent form and complete a questionnaire. A blood sample was also collected.

2.3. Measures

2.3.1. Groups

Patients were classified into three groups: “clinically vulnerable patients” (patients with an increased risk of complications in case of SARS-CoV-2 infection because of a chronic disease), defined here as patients having outpatient appointments in cardiology, endocrinology, immunology, infectious diseases, nephrology, neurology, oncology, pneumology, or rheumatology; “geriatric patients,” defined here as patients belonging to a health care network for aging people with access to medical consultations at home; or “socially vulnerable patients” (patients with an increased risk of SARS-CoV-2 infection because of precarious and crowded life conditions), defined here as patients seen in a migrant health program or a mobile outpatient community care center that provides primary care to people in precarious situations, such as homelessness, absence of legal status, and/or health insurance coverage. These patients could also have chronic health diseases and therefore be clinically vulnerable. On the contrary, “clinically vulnerable patients” and “geriatric patients” were not socially vulnerable.

2.3.2. Forgoing health care

Questions on forgoing health care were adapted from the European SHARE survey (Baggio et al., 2018). Participants were asked whether they did forgo any kind of health care to avoid SARS-CoV-2 infection or due to willingness to preserve health care resources, or whether health care appointments had been cancelled by health services since the beginning of the pandemic. The question covered a period of five months (February to June 2020). Then, participants were asked which kind of health care they did forgo: surgery, general practitioner care, care from a specialist physician, drugs, dental care, inpatient rehabilitation, outpatient rehabilitation, aids and appliances, nursing home care, home care, and paid home support.

2.3.3. Seroprevalence of anti-SARS-CoV-2 IgG antibodies

Antibodies were assessed using a commercially available ELISA

(Euroimmun; Lübeck, Germany #EI 2006–9601 G), which targets the S1 domain of the spike protein (Meyer et al., 2020).

2.3.4. Sociodemographics

Sociodemographic variables included age, gender, and level of education (primary or secondary vs. tertiary level of education).

2.4. Statistical analyses

We computed descriptive statistics for all variables (means and standard deviations or percentages and n according to the type of variables) and 95% confidence intervals (CIs) for health care renunciation. We then compared proportions of forgoing health care between groups using logistic regression. Associations between covariates and forgoing health care were tested using multivariate logistic regression, including age, gender, level of education, having any chronic disease, and having SARS-CoV-2 antibodies as covariates.

All analyses were performed using Stata 15 (StataCorp®). A *p*-value of 0.05 or below was considered significant.

3. Results

A total of 1167 participants were included in the study, with a response rate of 78.8%. Participants were on average 52.4 ± 17.7 years old, and 53.6% were female. Of the sample, 5.9% of patients had antibodies (95% CI: 4.7; 7.4). Detailed descriptive statistics for each group are reported in Table 1. Kinds of forgoing health care are described in

Table 1
Descriptive statistics for the sample.

	Overall <i>n</i> = 1167	Groups		
		Clinically vulnerable <i>n</i> = 744 (63.7%)	Geriatric patients <i>n</i> = 85 (7.3%)	Socially vulnerable <i>n</i> = 338 (29.0%)
Age in years ¹	52.4 (17.7)	54.6 (16.1)	80.8 (8.5)	40.7 (12.0)
Gender ²				
Female	52.1 (700)	51.2 (381)	61.2 (52)	57.1 (193)
Male	47.9 (643)	48.8 (363)	38.8 (33)	42.9 (145)
Level of education ²				
Primary/ secondary	63.7 (854)	52.2 (387)	72.9 (62)	75.1 (253)
Tertiary	36.3 (486)	47.8 (355)	27.1 (23)	24.9 (84)
Presence of any chronic disease ²	80.0 (934)	100 (744)	100 (85)	31.1 (105)
Forgone health care ²				
Overall	38.5 (449)	47.2 (351)	9.4 (8)	26.6 (90)
Surgery	2.8 (33)	4.3 (32)	0.0 (0)	0.3 (1)
General practitioner	8.8 (103)	7.4 (55)	2.4 (2)	13.6 (46)
Specialist	25.9 (302)	33.5 (249)	4.7 (4)	14.5 (49)
Drugs	4.0 (47)	5.9 (44)	0.0 (0)	0.9 (3)
Dental care	6.1 (71)	7.8 (58)	1.2 (1)	3.6 (12)
Inpatient rehabilitation	0.9 (10)	1.3 (10)	0.0 (0)	0.0 (0)
Outpatient rehabilitation	4.5 (52)	6.9 (51)	1.2 (1)	0.0 (0)
Aids and appliances	0.3 (4)	0.5 (4)	0.0 (0)	0.0 (0)
Nursing home	4.0 (47)	5.4 (40)	0.0 (0)	2.1 (7)
Home care	0.6 (7)	0.8 (6)	0.0 (0)	0.3 (1)
Paid home help	2.4 (28)	3.6 (27)	1.2 (1)	0.0 (0)

¹ Mean and standard deviation are reported.

² Percentages and n are reported.

Table 1. The most frequent was visiting a specialist (25.9%), followed by visiting a general practitioner (8.8%) and dental care (6.1%).

In the multivariate model (Table 2), age, gender, level of education, and having a chronic disease were significantly associated with forgoing health care. Older participants (OR = 0.99 for every one year difference in age, $p < .001$) and men (OR = 0.53, $p < .001$) were less likely to forgo care. On the contrary, participants with a tertiary level of education (OR = 1.37, $p = .014$) and participants with a chronic disease (OR = 2.92, $p < .001$) were more likely to forgo health care. Having anti-SARS-CoV-2 antibodies was not associated with forgoing health care (OR = 1.01, $p = .983$).

4. Discussion

We found a large proportion of patients reporting forgoing health care during the first wave of the Covid-19 epidemic in the spring of 2020, even though our sample included a substantial proportion of outpatients already included in health networks (geriatrics and socially vulnerable patients) and therefore less likely to forgo care. Among these patients, 5.9% had anti-SARS-CoV-2 antibodies in June 2020, compared to an estimation of 10.8% in the general population in Geneva in May 2020 (Stringhini et al., 2020).

Overall, 38.5% of vulnerable outpatients did forgo health care because of the Covid-19 pandemic between February and June 2020. The HUG, where the study took place, was the sole hospital with dedicated Covid-19 wards in the canton of Geneva during the first wave of the pandemic (from March 13, 2020), accounting for around 500,000 residents. It set up a series of unprecedented major fundamental reorganizational actions, including dedicated Covid-19 wards and screening centers, scaled-up intensive and intermediary care units, postponed elective activities, and reduced outpatient consultations. Our findings using self-reports of forgone care are in line with hospitals' reports of decreased health care utilization (−23% to −49%) during the Covid-19 pandemic (Ahn et al., 2020). Our results are also in line with recent findings showing a high proportion of forgone care in other regions, especially among vulnerable individuals (e.g., unemployed people or people without health insurance) (Ke et al., 2021). Overall, the pandemic might increase health disparities (Guessous et al., 2012; Wolff et al., 2011).

Our sample included vulnerable patients in need of outpatient care, known to have an important health care burden (Krütilová, 2016; Malmusi, 2015): patients with chronic health conditions, elderly patients, and socially vulnerable individuals (among which 31.1% had at least one chronic disease). The decrease in routine management of patients with chronic conditions might have important and unpredictable adverse health consequences. Indeed, forgoing health care is associated with worse health outcomes, including complications and hospitalization (Heisler et al., 2010; Okumura et al., 2013). Thus, alternatives to avoid delayed health care are needed. Teleconsultation has influenced non-Covid-19 patient care with promising results (Gianmarco et al., 2020). However, it was insufficiently used in our sample during the first wave of the epidemic, even though home consultations were increased (+60% in 2020 compared to 2019, also including follow-up of Covid-19 patients, Mazouri-Karker et al., 2020). Teleconsultation should be more widely used, and further studies monitoring and evaluating the efficacy and impact of teleconsultation are needed. In the current subsequent waves of the pandemic, it is essential to minimize adverse consequences of delayed care for non-Covid-19 patients. Even if health care resources are strained, future efforts should not ignore patients with chronic conditions, likely to suffer adverse (long-term) health consequences. Measures to reduce forgoing health care could benefit the health care system more generally by reducing hospital bed occupancy and later health care use. It could also reduce the use of emergency services, as barriers to health care can increase their use (Rust et al., 2008).

Another important finding was that forgoing health care was not associated with presence of SARS-CoV-2 antibodies. Because patients

Table 2

Multivariate logistic regression of covariates on forgoing health care.

	OR	95% CIs	p
Age (continuous: in years)	0.99	0.98; 0.99	<0.001
Gender (ref. female)	0.53	0.41; 0.68	<0.001
Level of education (ref. primary/secondary)	1.37	1.07; 1.76	0.014
Presence of chronic disease (ref. no)	2.92	2.03; 4.19	<0.001
Presence of anti-SARS-CoV-2 antibodies (ref. no)	1.01	0.60; 1.89	0.983

OR: odd-ratio; CIs: confidence intervals.

could forgo health care because of fear of being infected, this is an important and reassuring finding that should be used to promote seeking health care during further waves of the pandemic.

This study had some limitations. Because we used a sample of outpatients with scheduled appointments or engaged in a health care network, the true prevalence rate of forgoing health care among vulnerable populations might have been underestimated. Furthermore, comparisons between well-defined groups of patients are also needed, as the groups included in this study overlapped. Population-based studies are also needed to provide a better overview of the consequences of the pandemic on health care behaviors. Another shortcoming was that we did not ask for the specific reasons why patients forwent care (e.g., fear of being infected, desire to reduce the burden on health services, cancelled appointments by the hospital). Future studies should explore more precisely these reasons, and especially after the second/third wave (s) of the pandemic, as reasons and access to health services might have changed. In addition, forgoing care for economic reasons is prevalent among vulnerable economic populations, and other reasons of forgoing care should be included in future studies to provide a better overview of forgone care among vulnerable populations (Guessous et al., 2012; Wolff et al., 2011). Comparisons with non-vulnerable populations are also needed.

5. Conclusion

Our study showed that the pandemic led to a high rate of forgoing health care among vulnerable populations. Because delay in health care is associated with worse health outcomes and potentially increased health care use, minimizing adverse consequences for patients and the entire health care system is crucial.

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Author contributions

Conceptualization: SB, NV, HS, JS, FJ, SS, YJ, IG, FC, HW, and LG; methodology: SB, NV, HS, JS, FJ, SS, YJ, IG, FC, HW, and LG; formal analysis: SB; data curation: SB and LG; writing original draft: SB; writing editing and review: NV, HS, JS, FJ, SS, YJ, IG, FC, HW, and LG; project administration: LG; funding acquisition: LG; supervision: HW.

Declaration of Competing Interest

None.

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