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COVID-19-related stigma and its sociodemographic correlates: a comparative study

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Abstract

Background: Coronavirus disease 2019 (COVID-19) is closely associated with physical and mental health problems; however, little is known about the severity of stigma caused by COVID-19 among its survivors. Thus, the aim of this study was to compare differences in stigma experiences of COVID-19 survivors versus healthy controls after the COVID-19 outbreak peak in China.

Methods: This cross-sectional study comprised 154 COVID-19 survivors and 194 healthy controls recruited through consecutive and convenience sampling methods, respectively. COVID-19 related stigma was measured by the Social Impact Scale (SIS). Stigma differences between the two groups were compared with analysis of covariance (ANCOVA) and a generalized linear model (GLM) was used to identify independent correlates of COVID-19-related stigma in this study.

Results: Compared with healthy controls, COVID-19 survivors reported more overall stigma ($F_{(1,347)} = 60.82$, $p < 0.001$), and stigma in domains of social rejection ($F_{(1,347)} = 56.54$, $p < 0.001$), financial insecurity ($F_{(1,347)} = 19.96$, $p < 0.001$), internalized shame ($F_{(1,347)} = 71.40$, $p < 0.001$) and social isolation ($F_{(1,347)} = 34.73$, $p < 0.001$). Status as a COVID-19 survivor, having family members infected with COVID-19, being married, economic loss during the COVID-19 pandemic, and depressive symptoms were positively associated with higher overall stigma levels (all p values < 0.05).

Conclusion: COVID-19-related stigma is commonly experienced among COVID-19 survivors even though the outbreak has been well-contained in China. Routine assessment of stigma experiences should be conducted on COVID-19 survivors and appropriate psychological assistance, public education, and anti-stigma campaigns and policies should be enforced to reduce stigma within this vulnerable subpopulation.

Keywords: COVID-19 survivors, Stigma

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Introduction

Coronavirus disease 2019 (COVID-19) was first reported in Wuhan, Hubei province, China at the end of 2019, and subsequently emerged in other parts of the world [66, 67]. COVID-19 was eventually declared to be a pandemic on 11 March 2020 by the World Health Organization (WHO) [69]. By early November 2020, around 50 million individuals had been infected [28], of whom, over 32 million have recovered from this disease [28]. In China the COVID-19 outbreak has been well controlled nationwide, except for occasional cases imported from overseas since early 2021 [13, 15].

Individuals suffering from COVID-19 may also have common psychiatric comorbidities and related problems such as depression, anxiety, stress and stigma [17, 26, 31, 48, 53, 54, 61]. Stigma refers to disapproval of or negative attitudes toward persons with certain characteristics or diseases that distinguish these persons from other members of society [23, 64]. In contrast, discrimination refers to the act of identifying and treating members of stigmatized groups unfairly compared to members of majority groups [4, 5, 9]. Persons who perceive they are being stigmatized may report guilt, self-blaming behaviour, self-depreciation, self-isolation, low self-esteem, and being excluded or ignored by others [35]. Stigma is closely associated with mental health problems particularly depression. Previous studies have found strong positive associations between stigma and depression; depression and stigma also have certain shared symptoms including feelings of guilt, self-blame, and low self-esteem [12, 52].

During the COVID-19 pandemic, stigma has become a public health challenge. COVID-19 related stigma refers to a disapproving or negative self-attitude, stemming from being infected with, or having close contacts with COVID-19, that results in "a spoiled identity" [41]. Recent findings suggest that some COVID-19 survivors and their family members are rejected by their neighbors, landlords and even employers in China [10]. Certain sub-populations such as persons suspected of having COVID-19, discharged individuals from quarantine, and people returning from overseas also experience various forms of stigmatization including social exclusion, stereotyping and being insulted [2]. Individuals suffering from social stigma may feel ashamed of themselves, and experience self-condemning behaviour or persistent fear of contacting their relatives and friends [10, 17]. For instance, Duan et al. [17] found that 16% of Hubei province residents reported being stigmatized during the peak of the COVID-19 outbreak and felt ashamed, blameworthy and shunned simply because Hubei was the COVID-19 epicenter. Another study from Vietnam found that 18% of healthcare workers felt unsafe to work in healthcare facilities after they undertook quarantine; 10% felt blameworthy by relatives and friends and 34% avoided contacts with neighbors or others in the community due to feeling stigmatized [16].

COVID-19 related stigma can lead to a range of negative consequences such as psychological stress [2], discrimination [18, 39], health-related violence [8, 42] and, worst of all, suicide [56] for affected populations including COVID-19 survivors, suspected or quarantined cases, and people returning from overseas. In addition, COVID-19-related stigma [25] could become a barrier to the control and prevention of COVID-19 because people who experience high levels of stigma are less likely to disclose their health status [2], thus deterring professional help-seeking behaviors [17], and refusing to take COVID-19 tests [19]. As stated by the WHO director-general Dr. Tedros Adhanom Ghebreyesus, "*stigma, to be honest, is more dangerous than the [corona] virus itself*" [68].

To date, some commentaries and reviews of COVID-19-related stigma have been published [29, 43, 50], but relevant quantitative studies are scant. Thus far, three studies focused on COVID-19-related stigma in healthcare workers [16, 51, 74], and one study investigating stigma in Hubei residents [17] have concluded these groups experience high stigma levels. A qualitative study has also assessed COVID-19-related stigma in two COVID-19 survivors and five family members [2].

Stigma related to infectious diseases is related to clinical features of such diseases and socio-cultural factors [33]. For instance, hepatitis A survivors rarely suffer from stigma yet hepatitis B and C survivors often experience high stigma levels due to more serious long-term effects [14]. Stigma related to infectious diseases is also common in East Asian countries and territories [33]. Previous studies found severe acute respiratory syndrome (SARS) survivors suffered from elevations in mental health problems including stigma in the post-SARS era [40, 57]. Thus, it is reasonable to assume that COVID-19 survivors experience more stigma than do uninfected peers.

Because COVID-19 is caused by a novel virus, it is not clear how widespread or severe stigma is among survivors. To date, no studies have compared COVID-19-related stigma between COVID-19 survivors and healthy controls. Therefore, the aim of this study was to compare COVID-19-related stigma between COVID-19 survivors and healthy controls living in the same region of China and to identify correlates of stigma experiences in these groups.

Methods

Study setting and participants

This was a cross-sectional, comparative study conducted between May 27 and September 4, 2020 at Chongqing

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Mental Health Center (CMHC), a setting that is responsible for follow-up mental health assessments of all COVID-19 survivors in Chongqing Municipality, China. Patients were eligible if they were 1) COVID-19 survivors in Chongqing, China; 2) aged 18 years or above; and 3) able to understand the purpose and contents of the assessment. All COVID-19 survivors attending the follow-up clinic at CMHC were consecutively invited to participate in this study. For the control group (healthy controls hereafter), eligibility criteria were the same except a COVID-19 diagnosis was absent. Healthy controls were recruited via convenience sampling of local community-dwelling residents in Chongqing. The study protocol was approved by the ethics committee of the Chongqing Mental Health Center. All participants provided online informed consent prior to participation.

Assessment tools

The assessment was conducted by a research psychiatrist in a consultation room after participants attended their follow-up assessment. A data collection form was used to collect participant demographic data and clinical characteristics (gender, age, education level, marital status, living circumstances, occupation, perceived economic status, perceived health status). Participants were also asked whether they (1) had any family members infected with COVID-19; 2) perceived online mental health services to be helpful; 3) experienced economic loss during the COVID-19 outbreak; and 4) frequently received information about COVID-19 through social media.

Severity of fatigue was assessed using a fatigue numeric rating scale, which ranged from '0' (no fatigue) to '10' (extreme fatigue) [22]. The nine-item Patient Health Questionnaire (PHQ-9) - Chinese version assessed severity of depressive symptoms [58, 72]. Total PHQ-9 scores range from 0 to 27, with higher scores indicating more severe depressive symptoms.

Experiences of perceived stigma from COVID-19 were measured using the Social Impact Scale (SIS), a widely used 24-item measure of stigmatization used for patients with major medical conditions and infectious diseases such as the human immunodeficiency virus (HIV) [20]. The SIS is a generic stigma scale that can be used for different populations affected by the COVID-19 pandemic. Although healthy controls in the study were not infected with COVID-19, they were also greatly affected widespread quarantine measures during the pandemic such as suspended travel, limited outdoor activities, and school closures. The SIS covers 4 domains, including social rejection (9 items), financial insecurity (3 items), internalized shame (5 items), and social isolation (7 items). Each SIS item is rated from '1' (strongly disagree) to '4' (strongly agree), with total scores ranging from 24 to 96.

Higher scores indicate more severe stigma. The Chinese version of the SIS has been validated with good psychometric properties [47].

Statistical analysis

Data were analyzed using Statistical Analysis System (SAS) software, University Edition (SAS Institute Inc., Cary, North Carolina, U.S.). Comparisons of demographics and clinical characteristics between COVID-19 survivors and healthy controls were assessed using independent two sample t tests, Wilcoxon rank sum tests, and chi-square tests, as appropriate. Analyses of covariance (ANCOVA) were used to compare total and subscale SIS score differences between COVID-19 survivors and healthy controls after controlling for other variables on which there were significant group differences.

Associations of demographic and clinical characteristics with SIS total scores were examined using t tests and analysis of variance (ANOVA). A generalized linear model (GLM) was used to explore independent correlates of SIS total scores (the dependent variable) based on measures on which there were significant group differences in univariate analyses (independent variables). Significance level was set at 0.05 (two-tailed tests).

Results

Demographic and clinical characteristics

A total of 158 COVID-19 survivors were invited, of whom, 154 agreed to participate and completed the assessment. In addition, 194 healthy controls were recruited during the study period. Table 1 shows that there were significant differences between COVID-19 survivors and healthy controls in terms of gender, age, education level, employment status, having family members infected with COVID-19, perceptions of online mental services as helpful or not, social media use frequency, economic loss during COVID-19 pandemic, perceived economic status, perceived health status, fatigue total scores, SIS total scores and SIS subscale scores (all p values <0.05).

After adjusting for covariates, COVID-19 survivors reported comparatively higher overall stigma levels ($F_{(1,347)} = 60.82$, $p < 0.001$), and stigma in domains of social rejection ($F_{(1,347)} = 56.54$, $p < 0.001$), financial insecurity ($F_{(1,347)} = 19.96$, $p < 0.001$), internalized shame ($F_{(1,347)} = 71.40$, $p < 0.001$) and social isolation ($F_{(1,347)} = 34.73$, $p < 0.001$).

Correlates of overall stigma on COVID-19

Univariate analyses revealed that being COVID-19 survivors, having family members infected with COVID-19, gender, marital status, education level, employment status, perceptions of online mental service, economic loss, frequency of social media use and perceived health

Table 1 Demographic and clinical characteristics of the study sample

	Healthy controls (N = 194)		COVID-19 survivors (N = 154)		Statistics		
	n	%	N	%	x^2	df	p
Male gender	40	20.6	67	43.5	21.12	1	< 0.001
Married	133	68.6	99	64.3	0.70	1	0.40
College and above	156	80.4	69	44.8	47.63	1	< 0.001
Living with family	148	76.3	119	77.3	0.05	1	0.83
Unemployed	10	5.2	35	22.7	23.55	1	< 0.001
Family members infected with COVID-19	5	2.6	105	68.2	170.92	1	< 0.001
Feel online mental service helpful	65	33.5	20	13.0	19.58	1	< 0.001
Obvious economic loss during the COVID-19 pandemic	25	12.9	59	38.3	30.31	1	< 0.001
Frequent use of social media	132	68.0	77	50.0	11.65	1	< 0.001
Perceived economic status					22.59	2	< 0.001
Poor	38	19.6	66	42.9			
Fair	147	75.8	81	52.6			
Good	9	4.6	7	4.5			
Perceived health status					8.09	2	0.018
Poor	5	2.6	13	8.4			
Fair	88	45.3	77	50.0			
Good	101	52.1	64	41.6			
	Mean	SD	Mean	SD	t / Z	df	p
Age (years)	35.7	9.0	42.2	13.7	5.03	252.13 [a]	< 0.001
Fatigue total score	3.8	2.3	2.3	2.3	6.23	— [b]	< 0.001
PHQ-9 total score	5.3	5.3	6.2	6.0	1.35	— [b]	0.18
Overall stigma	46.0	14.0	70.2	12.9	16.58	346	< 0.001
Social rejection	16.7	5.6	27.5	5.9	17.35	346	< 0.001
Financial insecurity	6.9	1.9	8.9	2.2	9.03	298.22 [a]	< 0.001
Internalized shame	9.3	3.3	15.1	2.7	17.65	345.58 [a]	< 0.001
Social isolation	13.2	4.3	18.7	4.0	12.37	346	< 0.001

Abbreviations: *COVID-19* coronavirus disease 2019, *SD* standard deviation, *QOL* quality of life, *PHQ-9* patient health questionnaire – 9 item, *SIS* social impact scale
a: Satterthwaite corrected because of the heterogeneity of variance
b: Wilcoxon rank sum test

status were significantly associated with overall stigma (all *p* values < 0.05; Table 2). GLM analysis revealed that, apart from being COVID-19 survivors, having family members infected with COVID-19, married marital status, economic loss during the COVID-19 pandemic, and depressive symptoms were positively associated with greater overall stigma (all *p* values < 0.05; Fig. 1).

Discussion

To the best of our knowledge, this is the first study to compare differences in perceived stigma between COVID-19 survivors and healthy controls. We found that COVID-19 survivors experience significantly more overall stigma and heightened stigma in domains of social rejection, financial insecurity, internalized shame and social isolation compared with healthy controls. Our

findings were similar to those based on previous outbreaks of severe infectious diseases such as SARS and the Ebola virus disease (EVD) [44]. Higher levels of perceived stigma in COVID-19 survivors could be attributed to worrying about transmitting the virus to family members, friends and colleagues and fear of being discriminated against or mistreated. Fear of transmission and discrimination may deter COVID-19 survivors from disclosing their infection status or history [10].

In this study, people who had COVID-19-infected family members also reported higher levels of stigma than those without, similar to evidence from Hubei residents indicating those who had quarantined friends were more likely to experience serious scrutiny and stigma during the COVID-19 outbreak [17]. The relationship between marital status and stigma has been mixed in the

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Table 2 Overall stigma by demographic characteristics in the whole sample (N = 348)

Demographics	SIS total		Statistics		
	Mean	SD	t / F	df	p
Gender			2.37	346	0.018
Female	55.2	18.1			
Male	60.2	17.7			
Marital status			2.75	346	0.006
Married	58.6	17.6			
Others	53.0	18.6			
Education level			8.39	346	< 0.001
College and above	51.2	16.7			
High school and below	66.8	16.1			
Living with family			0.08	346	0.93
Yes	56.8	17.9			
No	56.6	18.8			
Occupation			4.93	346	< 0.001
Unemployed	68.7	14.7			
Employed	54.9	17.9			
Family members infected with COVID-19			17.77	277.83 [a]	< 0.001
Yes	74.0	11.0			
No	48.7	14.8			
Feel online mental service helpful			2.42	346	0.016
Yes	52.6	17.9			
No	58.1	18.0			
Economic loss			8.20	346	< 0.001
Yes	69.7	18.0			
No	52.6	16.1			
Frequent use of social media			2.97	346	0.003
Yes	54.4	18.7			
No	60.2	16.6			
Perceived economic status			1.24	2	0.27
Poor	67.8	18.4			
Fair	52.1	15.8			
Good	50.4	16.2			
Perceived health status			14.70	2	< 0.001
Poor	71.2	17.3			
Fair	59.8	18.0			
Good	52.1	16.9			

Abbreviations: *COVID-19* coronavirus disease 2019, *SD* standard deviation, *SIS* social impact scale
a: Satterthwaite corrected because of the heterogeneity of variance

infectious disease literature. Married people reported higher levels of stigma than those who were unmarried, which is consistent with earlier findings from Singapore during the SARS outbreak wherein married healthcare workers perceived more severe social stigma than did unmarried peers and tended to believe that "people
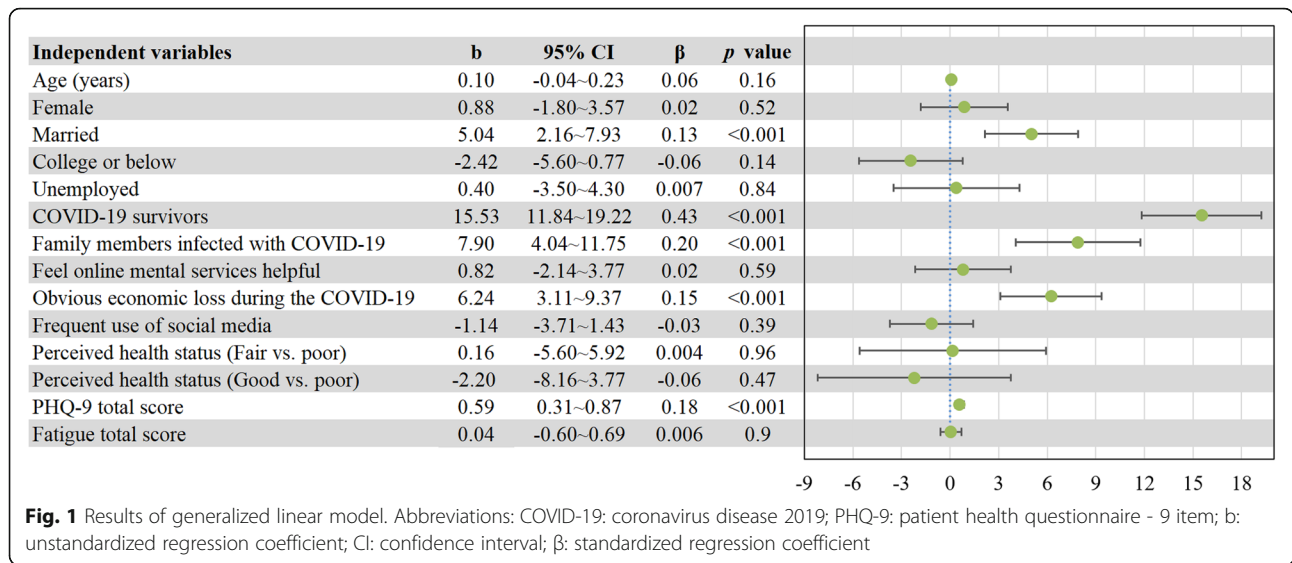
avoid my family because of my job" [32]. Nevertheless, no significant associations between marital status and stigma was found during outbreaks of other infectious diseases such as EVD [27, 59].

Previous research [17] found that Hubei residents, tuberculosis patients [1] and HIV patients [6], with higher socioeconomic status were less likely to report illness-related stigma. In line with these findings, people who had greater economic losses during the COVID-19 outbreak reported higher levels of stigma. Depression was also an independent correlate of COVID-19-related stigma in this study, consistent with evidence from the SARS outbreak [62] and HIV-positive patients [24, 38]. This relationship may be a partial reflection of shared core symptoms between depression and stigma including feelings of guilt, self-blame and low self-esteem [12, 52]. In addition, the relationship between depression and stigma is considered to be bi-directional based on several theoretical models of stigma and infectious disease or disability; i.e., stigma could increase the risk of depression, and vice versa [24, 36, 55, 60, 73].

The association between education level and infectious disease related stigma has been inconsistent between studies. For instance, some studies found that lower education is associated with increased stigma in patients with HIV [6], tuberculosis [1] or EVD [30] while other studies found complementary associations in patients with COVID-19 [17] or EVD [59]. James et al. found that educational level was not significantly associated with internalized or enacted stigma among Ebola survivors, paralleling results of this study [27].

Previous studies have also found that exposure to social media could help reduce HIV-related stigma [3, 7, 45]. However, we did not find significant associations between social media use / online mental services and COVID-19-related stigma. Our findings were similar to those of Duan et al. [17] who also reported an absence of such relations. Presumably, if social media releases misinformation and stigmatizing viewpoints to the lay public, the positive influence of media exposure on stigma could be offset [34, 64]. This assumption appears to have merit in light of evidence that misinformation and stigmatizing viewpoints have been common in social media during the COVID-19 pandemic, particularly in its early stages [21, 37].,

There are several methodological limitations in this study that should be acknowledged. First, because this was a cross-sectional study, causal relations between stigma and other variables could not be examined. Second, for logistical reasons, close contacts and family members of persons with COVID-19 cases were not analyzed separately. Third, although results documented correlates of perceived stigma, external stigma was not assessed in this study [1, 46, 65, 71]. Finally, convenience

Independent variables	b	95% CI	β	*p* value
Age (years)	0.10	-0.04~0.23	0.06	0.16
Female	0.88	-1.80~3.57	0.02	0.52
Married	5.04	2.16~7.93	0.13	<0.001
College or below	-2.42	-5.60~0.77	-0.06	0.14
Unemployed	0.40	-3.50~4.30	0.007	0.84
COVID-19 survivors	15.53	11.84~19.22	0.43	<0.001
Family members infected with COVID-19	7.90	4.04~11.75	0.20	<0.001
Feel online mental services helpful	0.82	-2.14~3.77	0.02	0.59
Obvious economic loss during the COVID-19	6.24	3.11~9.37	0.15	<0.001
Frequent use of social media	-1.14	-3.71~1.43	-0.03	0.39
Perceived health status (Fair vs. poor)	0.16	-5.60~5.92	0.004	0.96
Perceived health status (Good vs. poor)	-2.20	-8.16~3.77	-0.06	0.47
PHQ-9 total score	0.59	0.31~0.87	0.18	<0.001
Fatigue total score	0.04	-0.60~0.69	0.006	0.9

Fig. 1 Results of generalized linear model. Abbreviations: COVID-19: coronavirus disease 2019; PHQ-9: patient health questionnaire - 9 item; b: unstandardized regression coefficient; CI: confidence interval; β: standardized regression coefficient

sampling of unmatched healthy controls from the community was undertaken to facilitate rapid data collection within the relatively narrow time window of the pandemic in which COVID-19 patients were also recruited. Consequently, the control group was unlikely to be representative of the population from which they were drawn and generalizations cannot be made from our sample to the uninfected population of Chongqing residents. Fortunately, key demographic measures were assessed in this study and potential confounding effects of group differences in demographics were statistically controlled within main analyses.

To reduce COVID-19-related stigma, health authorities and academic associations in many countries and territories have released appeals to stop stigmatizing at-risk groups including COVID-19 survivors, people returning from overseas and those released from quarantine [11, 41, 70]. These public health messages highlight negative consequences of stigma (e.g., reluctance to disclose infected status or seek assessment and treatment) that undermine efforts to treat the disease and mitigate further community spread [41]. Stigma also increases risks of fear, anger, discrimination, and violence toward ordinary people instead of devoting resources to eradicating the disease itself [11]. Underscoring the importance of communications to reduce stigma, the Mayo Clinic released a call entitled "What you can do to reduce COVID-19 stigma", appealing for the public to access COVID-19 information from reputable sources such as the Centers for Disease Control and Prevention (CDC) and WHO, and provide support for people who may feel stigmatized [41]. CDC appeals have been made to community leaders and public health officials to prevent stigma by maintaining the privacy and confidentiality of COVID-19 survivors, correcting negative language

that can cause stigma, and using media to challenge stereotyping and stigmatization [11]. The Washington State Department of Health has set up channels to report discrimination among those who encounter stigmatization or discrimination [63]. In China, some public media has also issued commentaries appealing to stop stigmatizing COVID-19 survivors [49]. In light of our results, continued public health appeals devoted to reducing COVID-19 stigma in China are clearly warranted.

Conclusion

In conclusion, COVID-19-related stigma is commonly experienced among COVID-19 survivors even though the outbreak has been well-contained in China. In light of our findings linking the COVID-19 diagnosis, economic losses, and depression with elevations in perceived stigma, routine assessment of perceived stigma should be conducted on COVID-19 survivors and other at-risk groups. Appropriate psychological assistance should be provided to those distressed by these experiences. In addition, science-based public health education and anti-stigma / anti-discrimination policies should be enacted and enforced in legal legislation to reduce stigmatizing responses of social institutions and the general public. Finally, the long-term impact of the COVID-19 pandemic on stigma should be examined in future studies with prospective research designs.

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Declarations

Ethics approval and consent to participate
The study protocol was approved by the ethics committee of the Chongqing Mental Health Center. All participants provided online informed consent prior to participation.

Consent for publication
Not applicable.

Competing interests
The authors have no conflicts of interest to declare.

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