

# Gender-affirming care, mental health, and economic stability in the time of COVID-19: a global cross-sectional study of transgender and non-binary people

Brooke A. Jarrett<sup>1</sup>, Sarah M. Peitzmeier<sup>2</sup>, Arjee Restar<sup>1</sup>, Tyler Adamson<sup>3</sup>, Sean Howell<sup>4</sup>, Stefan Baral<sup>1</sup>, S. Wilson Beckham<sup>5</sup>

<sup>1</sup> Department of Epidemiology; Bloomberg School of Public Health, Johns Hopkins University

<sup>2</sup> Department of Health Behavior and Biological Sciences; School of Nursing; University of Michigan

<sup>3</sup> Department of Health, Policy, and Management; Bloomberg School of Public Health; Johns Hopkins University

<sup>4</sup> Hornet; San Francisco, CA, USA

<sup>5</sup> Department of Health, Behavior, and Society; Department of International Health; Bloomberg School of Public Health; Johns Hopkins University

## CORRESPONDENCE

Brooke A. Jarrett: brooke [at] jhmi [dot] edu

## FUNDING

BAJ was supported by the National Institute of Mental Health (grant F31MH121128). AJR was supported by the National Institute of Allergy and Infectious Diseases (grant T32AI102623). SWB was supported by the National Institute of Mental Health (grant K01MH114715) and also receives funding from Viiv Healthcare. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

## DISCLOSURES

The authors have declared that no competing interests exist.

## KEYWORDS

Transgender persons; health services for transgender persons; mental health services; social determinants of health; pandemics; COVID-19

## WORD COUNTS

Abstract: 300

Text: 4,517

Tables: 5

43 **ABSTRACT**

44

45 **Background**

46 Transgender and non-binary people are disproportionately burdened by barriers to quality  
47 healthcare, mental health challenges, and economic hardship. This study examined the impact  
48 of the novel coronavirus disease (COVID-19) pandemic and subsequent control measures on  
49 gender-affirming care, mental health, and economic stability among transgender and non-binary  
50 people globally.

51

52 **Methods**

53 We collected global cross-sectional data from 964 transgender and non-binary adult users of  
54 the Hornet and Her apps from April to August 2020 to characterize changes in gender-affirming  
55 care, mental health, and economic stability as a result of the COVID-19 pandemic. We  
56 conducted Poisson regression models to assess if access to gender-affirming care and ability to  
57 live according to one's gender were related to depressive symptoms, anxiety, and changes in  
58 suicidal ideation.

59

60 **Results**

61 Individuals resided in 76 countries, including Turkey (27.4%,n=264/964) and Thailand  
62 (20.6%,n=205). A majority were non-binary (66.8%,n=644) or transfeminine (29.4%,n=283).  
63 Due to the COVID-19 pandemic, 55.0% (n=320/582) reported reduced access to gender-  
64 affirming resources, and 38.0% (n=327/860) reported reduced time lived according to their  
65 gender. About half screened positive for depression (50.4%,442/877) and anxiety  
66 (45.8%,n=392/856). One in six (17.0%,n=112/659) expected losses of health insurance, and  
67 77.0% (n=724/940) expected income reductions. The prevalence of depressive symptoms,  
68 anxiety, and increased suicidal ideation were 1.63 (95% CI: 1.36-1.97), 1.61 (95% CI: 1.31-

69 1.97), and 1.74 (95% CI: 1.07-2.82) times higher for individuals whose access to gender-  
70 affirming resources was reduced versus not.

71

## 72 **Discussion**

73 The COVID-19 pandemic has reduced access to gender-affirming resources and the ability of  
74 transgender and non-binary people to live according to their gender worldwide. These  
75 reductions may drive the increased depressive symptoms, anxiety, and suicidal ideation  
76 reported in this sample. To improve transgender and non-binary health globally, increased  
77 access to gender-affirming resources should be achieved through policies (e.g., digital  
78 prescriptions), flexible interventions (e.g., telehealth), and support for existing transgender  
79 health initiatives.

## 80 **INTRODUCTION**

81 The global pandemic caused by the SARS-CoV-2 virus has resulted in more than 37 million  
82 cases of novel coronavirus disease (COVID-19) and over one million deaths.<sup>1</sup> In response,  
83 countries have implemented a wide range of measures to quell its spread — shelter-in-place  
84 orders, closures of business and schools, and the cancellation of surgeries perceived to be  
85 elective.<sup>2</sup> While these interventions are focused on reducing COVID-19 cases and increasing  
86 healthcare capacity, they have also negatively affected healthcare access, mental health, and  
87 economic stability worldwide.<sup>3–6</sup>

88  
89 A growing body of literature describes global interruptions to prescriptions for diseases like HIV,  
90 increases in depression, and significant losses of job, insurance, and food security as a result of  
91 the COVID-19 pandemic.<sup>7–11</sup> However, recent work has demonstrated that these effects  
92 disproportionately burden groups that have been historically marginalized. Specifically,  
93 pandemic control measures have exacerbated existing health disparities and social inequities  
94 along lines of poverty and occupation, race and ethnicity, and sexual orientation.<sup>12–16</sup> The  
95 COVID-19 pandemic may also uniquely affect transgender and non-binary people.

96  
97 Prior to the COVID-19 pandemic, transgender and non-binary individuals experienced barriers  
98 to care, greater mental health challenges, and economic vulnerabilities caused by stigma,  
99 discrimination, and minority stress.<sup>17–19</sup> Transgender and non-binary populations face a scarcity  
100 of clinicians trained in gender-affirming practices and widespread transphobia among healthcare  
101 staff, both of which make healthcare less accessible.<sup>20–22</sup> Yet access to gender-affirming  
102 healthcare (e.g., chest/breast surgery), services (e.g., hair removal), and goods (e.g., binders  
103 and packers) can substantially improve the quality of life and mental health of transgender and  
104 non-binary populations, who frequently have elevated levels of depression, anxiety, and suicidal  
105 ideation.<sup>23–26</sup> A disproportionate number of transgender and non-binary individuals also

106 experience structural vulnerabilities, such as economic, food, and housing insecurity, that can  
107 reinforce or worsen barriers to gender-affirming resources and mental health counseling.<sup>27,28</sup>

108

109 The COVID-19 pandemic is exacerbating these risks among transgender and non-binary  
110 individuals. For example, there have been documented cancellations and delays in gender-  
111 affirming surgeries;<sup>29</sup> such delays and cancellations have previously been connected to  
112 negative mental health consequences.<sup>23,30</sup> Furthermore, many transgender and non-binary  
113 individuals who were living according to their gender prior to the COVID-19 pandemic have had  
114 to return to living according to their sex assigned at birth upon moving in with relatives.<sup>31</sup>

115 Researchers have also reported on gendered policies from Panama, Peru, and Columbia that  
116 attempted to reduce the density of crowds in public places by requiring women and men to  
117 access essential services on alternating days — a policy that, like other gender-based laws,  
118 would likely result in violence against transgender communities.<sup>32</sup> In these situations,  
119 transgender and non-binary individuals may be limited in their ability to live safely and  
120 comfortably as themselves. The impact of the COVID-19 pandemic is likely to be especially  
121 adverse for those who are already economically marginalized, occupying other marginalized  
122 identities (e.g., people who are racial or ethnic minorities, living with HIV, or living with  
123 disabilities), or both.

124

125 Of the studies to date about the impact of COVID-19 on transgender and non-binary individuals,  
126 a majority have been conducted in a single country like the United States and focused on  
127 measuring a narrow spectrum of indicators. The objective of this study was to describe the  
128 global impact of the COVID-19 pandemic and subsequent control measures on gender-affirming  
129 care, mental health, and economic stability among transgender and non-binary individuals. We  
130 also examined the association between reduced access to gender-affirming care and ability to  
131 live according to one's gender with multiple mental health indicators.

## 132 **METHODS**

### 133 **Study Design and Participants**

134 For this cross-sectional study, we used data from the global COVID-19 Disparities Survey  
135 distributed between April 16 and August 3, 2020 via Hornet and Her — social networking apps  
136 marketed to sexual minorities, both cisgender and transgender. We sent survey invitations to  
137 the app-specific inboxes of all users who had been active on their app for at least one year. To  
138 take the survey, individuals had to report being 18 years or older, view a consent form, and  
139 indicate their informed consent by clicking a button to begin.

140  
141 A total of 24,618 individuals began the survey. For these analyses, we included 1,285  
142 transgender and non-binary adults, which we defined as people 18 years or older who self-  
143 reported being transgender, non-binary, or a gender different than their sex assigned at birth.  
144 We excluded all women assigned female or intersex at birth (n=161), all men assigned male or  
145 intersex at birth (n=12,740), individuals who did not report a gender (n=9,751), individuals who  
146 only reported not knowing, not wishing to disclose, or being unable to disclose their gender  
147 (n=654), and non-transgender identifying men and women who did not report an assigned sex  
148 at birth (n=27).

149  
150 To ensure the quality of our study population, we screened for duplicate survey responses  
151 based on IP address, and again by searching for identical responses to twenty randomly  
152 selected variables but found none. We also excluded individuals who completed 89% or less of  
153 the survey (n=271), who finished in less than the minimum piloted time of seven minutes (n=47),  
154 or provided conflicting responses for multiple questions (n=3) for a final sample size of 964. The  
155 Johns Hopkins School of Public Health Institutional Review Board provided a Category 4  
156 exemption to the larger survey prior to distribution.

157

## 158 **Demographic Measures**

159 Individuals self-reported gender by choosing any number of the following options: woman, man,  
160 transgender man, transgender woman, or non-binary (including gender-diverse, genderqueer,  
161 gender nonconforming, gender expansive, and agender). They also self-reported their country  
162 of residence, age, socioeconomic status, years of education, ethnic minority and immigration  
163 status, access to masks during the COVID-19 pandemic, and whether the government in their  
164 area had ever imposed confinement orders (e.g., mobility restrictions to stay-at-home). We  
165 categorized countries according to regions defined by the World Health Organization.

166  
167 We used eight mutually exclusive categories to describe reported genders. To increase the  
168 power for our analyses, we then collapsed individuals into three groups, building on  
169 recommendations from Reisner et al: (1) transmasculine, i.e., people who were assigned female  
170 at birth (AFAB) or intersex who self-reported being transgender or being a man; (2)  
171 transfeminine, i.e., people who were assigned male at birth (AMAB) or intersex who self-  
172 reported being transgender or being a woman; and (3) non-binary, i.e., individuals who reported  
173 being either solely non-binary, both a man and a woman, or a transgender man and  
174 transgender woman.

175  
176 We chose to operationalize three gender categories for multiple reasons. First, while some non-  
177 binary individuals explicitly reported also being transgender, the majority did not. We wanted to  
178 honor this distinction while also allowing for individuals who reported being both men and  
179 women to transcend the transfeminine versus transmasculine binary. Second, our survey  
180 presented a limited number of gender options to a global audience in which being a third gender  
181 (e.g., two-spirit, bissu, fa'afafine, qariwarmi) is distinct from many Western concepts of being  
182 transgender<sup>33</sup>. Lastly, in line with recommendations from Restar et al., we saw statistically  
183 significant differences when comparing non-binary individuals with transmasculine and

184 transfeminine individuals<sup>34</sup>. Therefore, presenting results stratified by gender (i.e., a “gender-  
185 specific” approach) was more appropriate than conducting analyses on all individuals together  
186 and presenting them as a single population (i.e., a “gender-inclusive” approach).

187

### 188 **COVID-19 Impact Measures**

189 Individuals answered questions about the impact of the COVID-19 pandemic and the resulting  
190 response on their access to gender-affirming resources, their mental health, and their economic  
191 stability. For indicators related to gender-affirming resources, we asked those who self-identified  
192 as transgender or non-binary (n=865) whether the COVID-19 pandemic limited their access to  
193 the following: hormone therapy and/or medications; surgical aftercare materials (e.g., vaginal  
194 dilators); cosmetic supplies and services (e.g. makeup, wigs, and hair removal); mental health  
195 counseling and therapy services; and body modifiers (e.g., binders and packing materials); to  
196 which they could respond, “Yes,” “No,” or “Not Applicable.” We characterized the severity of  
197 interruptions to gender-affirming care by whether individuals reported that more than one  
198 resource had been impacted. We also asked whether the COVID-19 pandemic had changed the  
199 amount of time that the individual could live according to their gender (“Compared to before the  
200 COVID-19 crisis, how often are you able to live according to your gender identity?”). We  
201 categorized the five-point Likert scale into three categories: More than before (i.e., more or a lot  
202 more as compared to before COVID-19), about the same as before COVID-19, and less than  
203 before (i.e., less than or not at all as compared to before COVID-19).

204

205 For mental health indicators, we used the 4-item patient health questionnaire (PHQ-4) to screen  
206 for common symptoms of depression and anxiety, which we dichotomized with a score of three  
207 or more being considered positive<sup>35</sup>. We assessed the impact of COVID-19 on loneliness  
208 (“Have you been feeling lonely since the COVID crisis began?”) using a four-point Likert Scale,  
209 which we dichotomized into a positive sentiment (“not lonely” or “not much lonely”) and negative



210 sentiment (“very much lonely” or “a little lonely”). We also asked how often they had thought  
211 about taking their own life presently and in the six months prior to the COVID-19 pandemic with  
212 the following answer options: “never,” “seldom,” “quite often,” “very often,” and “all the time.” We  
213 created four categories to describe changes from pre- to mid-pandemic: was and remains rare  
214 (i.e., “never” or “seldom”), was and remains frequent (i.e., “quite often,” “very often,” or “all the  
215 time”), decreased, or increased. To characterize resiliency, we asked about the following in the  
216 face of the COVID-19 pandemic: if they had “sources of hope, strength, comfort, and peace”; if  
217 they were “intent on finding emotional support and therapy for themselves”; and if they believed  
218 that they were able to “live a happy, full life despite the crisis.”

219

## 220 **Statistical Analyses**

221 We conducted descriptive analyses of demographic measures and presented descriptions of  
222 the COVID-19 impact measures stratified by gender, using chi-squared and Fisher's exact tests  
223 as appropriate. We also stratified results by country in the supplementary materials. We used  
224 Poisson regression models with complete case analyses to assess for differences in the  
225 prevalence of screening positive for depression and anxiety among individuals with reduced  
226 (versus continued) access to gender-affirming resources and individuals who reported being  
227 able to live according to their gender less (versus more) since the COVID-19 pandemic started.  
228 We reported these comparisons as prevalence ratios. We used the same approach to assess  
229 the impact of reductions in access to care and changes in ability to live according to one's  
230 gender on changes in suicidal ideation, stratified on baseline levels of suicidal ideation. We  
231 conducted all analyses in Stata version 14.<sup>36</sup>

## 232 **RESULTS**

233 These analyses primarily consisted of non-binary (66.8%, n=644/964) and transfeminine  
234 (29.4%, n=283) individuals (**Table 1**). About 47% (n=451) were from the European region and  
235 25.1% (n=242) were from the South-East Asia region. There were 76 countries represented in  
236 the sample; a majority of individuals were residents of Turkey (27.4%, n=264), Thailand (20.6%,  
237 n=199), and Russia (11.5%, n=117). No other single country accounted for more than 5% of the  
238 sample. Individuals were young and highly educated, with 50.5% (n=487) being between 18 and  
239 29 years old and 42.6% (n=410) having at least a university degree. Few (12.7%, n=122) had  
240 ever lacked access to a mask during the COVID-19 pandemic and 75.6% (n=729) lived in a  
241 country that had issued COVID-related confinement or “stay-at-home” orders.

242  
243 More than half (55%, n=320/582) of the sample reported that the COVID-19 pandemic had  
244 limited their access to one or more gender-affirming resource (**Table 2**). Mental health  
245 counseling and therapy was the most commonly cited resource to be affected (42.9%,  
246 n=192/448), with a somewhat greater proportion of transmasculine individuals reporting reduced  
247 access to counseling (61.9%, n=13/21) than non-binary (43.0%, n=122/284) and transfeminine  
248 (39.9%, n=57/143) individuals (p-value=0.16). Transmasculine and transfeminine individuals  
249 were more likely than non-binary individuals to report that the COVID-19 pandemic limited their  
250 access to gender-affirming hormones and medications (55.0% [n=11/20] and 42.1% [n=61/145]  
251 vs. 30.1% [n=71/236], p-value=0.01) as well as surgical aftercare materials (42.9% [n=6/14]  
252 and 40.2% [n=51/127] vs. 28.8% [n=62/215], p-value=0.08). All geographic regions reported  
253 reductions in access to gender-affirming resources; at least half of the individuals in each  
254 region, beside the Western Pacific, reported reduced access to one or more resource (**S1**  
255 **Table**). More than a third (38.0%, n=327/860) of individuals reported that the COVID-19  
256 pandemic had reduced or completely eliminated their ability to live according to their gender,  
257 with more transfeminine individuals (43.1%, n=100/232) being unable to living according to their

258 gender as compared to transmasculine (28.6%, n=8/28) and non-binary (36.5%, n=219/600)  
259 individuals (p-value <0.001).

260  
261 About half of the sample screened positive for depression (50.4%, n=442/877) and anxiety  
262 (45.8%, n=392/856), with a larger proportion of transfeminine individuals reporting these  
263 outcomes than transmasculine and non-binary individuals (**Table 3**). Overall, 10.0% (n=93/928)  
264 reported that suicidal ideation had increased during the COVID-19 pandemic, and 12.5%  
265 (n=116) reported that it had decreased. Transfeminine individuals were more likely to report  
266 increases in suicidal ideation (11.6%, n=31/263) while being less likely to agree with statements  
267 of resiliency, such as having sources of hope, strength, comfort, and peace (47.9%, n=100/209)  
268 when contrasted with transmasculine (8.3%, n=3/36; 71.0%, n=22/31) and non-binary (9.5%,  
269 n=59/624; 69.5%, n=367/528) individuals (p-value=0.98; p-value < 0.001). Sixteen percent  
270 (n=136/851) of individuals reported that they were not intent on finding emotional support and  
271 therapy for themselves during the COVID-19 pandemic. Seventy-seven percent (n=724/940) of  
272 the sample expected a reduction in their income, 17% (n=112/659) expected to lose health  
273 insurance, and 53.4% (n=428/801) reported not having received financial aid, despite need  
274 (**Table 4**). Though 40% (n=361/900) of individuals overall reported cutting or reducing their  
275 meals, fewer non-binary individuals had done so (34.9% [n=212/607] versus 51.4% [n=18/35] of  
276 transmasculine individuals and 50.8% [n=131/258] of transfeminine individuals).

277  
278 A positive screen for depression was 1.63 (95% confidence interval [CI]: 1.36-1.97) times more  
279 common among those who had lost access to one or more gender-affirming resource during the  
280 COVID-19 pandemic as compared to those without reductions in access (**Table 5**). Similarly, a  
281 positive screen for anxiety was 1.61 (95% CI: 1.31-1.97) times more common among those who  
282 had lost access to one or more gender-affirming resource compared to those without reductions  
283 in access. Trends were similar for suicidal ideation. For example, among those with rare or no

284 suicidal ideation at the beginning of the COVID-19 pandemic, individuals who had reduced  
285 access to gender-affirming resources were 1.74 (95% CI: 1.07, 2.82) times more likely to report  
286 increased suicidal ideation. Screening positive for depression and anxiety were also 1.21 (95%  
287 CI: 0.92, 1.58) and 1.48 (95% CI: 1.04, 2.10) times more prevalent among those reporting that  
288 the COVID-19 pandemic had decreased the amount of time they could live according to their  
289 gender, versus those who had increased that time. However, among individuals who had no or  
290 rare suicidal ideation prior to the COVID-19 pandemic, a smaller proportion of those living less  
291 according to their gender during the COVID-19 pandemic had increased suicidal ideation  
292 compared to those who lived more as their gender (prevalence ratio = 0.57 [95% CI: 0.33-  
293 0.98]).  
294

295 **DISCUSSION**

296 This survey provides early insights into the impacts of the COVID-19 pandemic on access to  
297 gender-affirming resources, mental health, and economic stability among transgender and non-  
298 binary communities globally. Roughly half of individuals reported that the COVID-19 pandemic  
299 had restricted their access to gender-affirming resources, and nearly two in five reported the  
300 COVID-19 pandemic had negatively impacted their ability to live according to their gender.  
301 Screening positive for depression and/or anxiety and increases in suicidal ideation were  
302 common, but more so for those who experienced reduced access to gender-affirming  
303 resources. Of these resources, counseling and therapy were the most affected by COVID-19,  
304 but most people who responded to the survey also reported resiliencies, such as having  
305 sources of hope and being intent on finding emotional support. This intent to seek support,  
306 however, may be dampened by the fact that many individuals expected reductions in income  
307 and loss of health insurance. This is the first empirical study to examine the effect of COVID-19  
308 and its impact on gender-affirming resources, mental health, and economic stability among a  
309 global, multi-region sample of transgender and non-binary individuals.

310  
311 Half of the individuals in our survey reported reduced access to one or more gender-affirming  
312 resource. This was higher in our sample than in an online survey of 1,240 transgender and non-  
313 binary individuals in Germany, Switzerland, and Austria.<sup>29</sup> A third or more of individuals from the  
314 European region in our study reported reductions in access to hormone therapy and surgical  
315 aftercare materials, which was higher than the 18% and 3% of individuals from the European-  
316 specific survey respectively. That survey also found about a quarter of individuals had delayed  
317 or cancelled aftercare for a recent surgery. Differences may be due to the populations sampled,  
318 as our survey primarily drew from countries in Eastern Europe where there is substantial stigma  
319 against and policing of transgender individuals. Together, though, these results signify that the

320 COVID-19 pandemic is causing decreases in access to gender-affirming resources even in  
321 high-income settings.

322

323 Our study demonstrated that reduced access to gender-affirming resources due to the COVID-  
324 19 pandemic were associated with poorer mental health. Screening positive for depression,  
325 screening positive for anxiety, and increased suicidal ideation were more common for those  
326 whose access to one or more gender affirming resource had been reduced due to the COVID-  
327 19 pandemic. These results mirror anecdotal data from clinics serving transgender patients in  
328 China.<sup>37</sup> Gender-affirming resources are crucial to transgender and non-binary individuals, as  
329 these resources often activate and enhance the interactive process of receiving recognition for  
330 their gender, sense of self, and sense of humanity.<sup>38</sup> Given the abundant literature that gender  
331 affirmation results in better mental health and quality of life, these data underscore the  
332 importance of ensuring that transgender and non-binary individuals have access to these  
333 essential services and products.<sup>23,24,30,39–41</sup> Access to these resources should also be fortified to  
334 avoid negative physical health outcomes. For example, about a third of this sample reported  
335 reductions in access to hormones and 17% reported that they expected to lose their health  
336 insurance, which may support hormone therapy procurement. These disruptions may force  
337 some transgender and non-binary individuals to discontinue hormone therapy or mete out their  
338 limited doses to last longer. Sustained interruptions or sub-optimal dosing of hormone therapy  
339 have been connected with symptoms of hypogonadism, such as osteoporosis and  
340 cardiovascular disease.<sup>42</sup> Similarly, aftercare for gender-affirming surgeries is critical for  
341 avoiding negative physical outcomes like urinary tract hesitancy and needing re-operation, yet a  
342 third of individuals in this study reported that they had reduced access to the surgical aftercare  
343 that they needed.<sup>43</sup>

344

345 A third of individuals reported decreased time lived according to their gender. In comparison, a  
346 poll conducted by the Trevor Project in the United States of 600 lesbian, gay, bisexual,  
347 transgender, and questioning (LGBTQ) youth (13-19 years) reported that 56% of the  
348 transgender and non-binary individuals had reduced their ability to express their LGBTQ identity  
349 due to the COVID-19 pandemic.<sup>44</sup> Youth often attributed needing to move back in with  
350 unsupportive caretakers as a reason for not being able to live according to their gender,<sup>31,44</sup>  
351 which may explain the elevated proportion compared to adults in our study. Living less  
352 according to one's gender during the COVID-19 pandemic was associated with screening  
353 positive for depression and anxiety. However, a counterintuitive result was found among  
354 individuals in our study who had rare suicidal ideation prior to the COVID-19 pandemic and lived  
355 more according to their gender during the COVID-19 pandemic. This subset of the sample was  
356 more likely to have increased suicidal ideation as compared to individuals who were living  
357 according to their gender less. These results, however, may reflect a limitation of our  
358 measurement tool. For example, the former group likely had a low baseline ability to live  
359 according to their gender pre-pandemic and hence could only increase the amount of time lived  
360 according to their gender. The worse mental health in this group may be linked to low pre-  
361 pandemic levels of living according to their gender, rather than the recent increase in their ability  
362 to do so. Because we did not measure pre-pandemic and current ability to live according to  
363 one's gender separately, we could not control for baseline levels in the model. It is also possible  
364 that people who recently began living in their gender more may be subjected to elevated levels  
365 of anticipated and experienced stigma that could be driving increased suicidality; prior research  
366 has shown discrimination due to gender expression, rather than gender identity itself, to be  
367 associated with mental distress.<sup>45-47</sup>  
368  
369 Positive screens for depression and anxiety were correlated with decreases in access to  
370 gender-affirming care and decreased time lived according to one's gender, and were present in

371 nearly half the sample. These data align with results from transgender and non-binary youth  
372 from the Trevor Project poll and another sample of 201 young adults (19-25 years) attending  
373 college, both from the U.S.<sup>44,48</sup> Findings in a small study of 15 Latinx trans women in the United  
374 States suggest that these poor mental health indicators represent declines as a result of the  
375 COVID-19 pandemic rather than just a high baseline prevalence.<sup>49</sup> These findings are  
376 particularly concerning when contrasted against the large proportion of individuals in this and  
377 other studies who reported that COVID-19 had decreased their access to mental health therapy  
378 and counseling.<sup>44,48</sup> To mitigate the immediate trauma of the COVID-19 pandemic and potential  
379 long-lasting effects, innovative mental health interventions — from remote video and phone  
380 therapy to self-help apps — have been emerging, but additional investments are needed,  
381 especially to reach those with limited to no access to Internet.<sup>50,51</sup> Furthermore, our findings  
382 support the notion that transmasculine, transfeminine, and non-binary populations are having  
383 distinct experiences during the COVID-19 pandemic and should receive gender-specific  
384 support.<sup>37</sup> For example, transmasculine individuals were more likely to report having reduced  
385 access to gender-affirming resources but generally reported better mental health outcomes, as  
386 well as having sources of strength and comfort. Combined with the fact that transgender and  
387 non-binary youth have been more likely to reach out to friends and family than cisgender  
388 lesbian, gay, and pansexual youth according to the Trevor Project data, it may be possible to  
389 enhance these resiliencies by strengthening and expanding trauma-informed, online peer-to-  
390 peer support efforts such as Q Chat Space <sup>31,44,52</sup>. However, different approaches to  
391 transfeminine, transmasculine, and non-binary individuals may be needed.

392

393 Lastly, we found that transgender and non-binary communities worldwide are experiencing  
394 strains across basic needs such as finances, food, and health insurance, all as a result of  
395 COVID-19 pandemic. These strains, in addition to pre-existing economic vulnerabilities, will  
396 contribute to even greater barriers to gender-affirming care, mental health counseling, services,



397 and products.<sup>27</sup> For example, approximately 10% of transgender and non-binary individuals in  
398 the U.S. lacked health insurance before the COVID-19 pandemic.<sup>27</sup> Though some may have  
399 health insurance through their employers, transgender and non-binary people are also more  
400 likely to be employed in the industries most impacted by business shutdowns.<sup>12</sup> We found that  
401 more than three quarters of the sample expected a reduction in their income, one in six  
402 expected to lose their health insurance, and more than half reported needing and not receiving  
403 financial aid. These results display the pronounced structural vulnerabilities that shape  
404 experiences of transgender and non-binary communities in the current context of the COVID-19  
405 pandemic, and likely contribute further as stressors to mental health. These stressors may climb  
406 as transgender and non-binary communities continue to experience worsening economic  
407 instability due to the COVID-19 pandemic and associated control measures. Further research is  
408 necessary to examine the syndemic impact of COVID-19-related stressors on transgender and  
409 non-binary communities, particularly those who are experiencing multiple, intersectional  
410 stressors at the individual, interpersonal, and structural levels.

411  
412 This study had some limitations. While the survey reached individuals from six continents and  
413 was available in 13 languages, these data are not a representative sample of transgender and  
414 non-binary individuals worldwide. As a survey distributed through a mobile app, participation  
415 was limited to individuals with Internet and a smartphone. Individuals in the survey were also  
416 generally highly educated. Our survey likely missed highly disadvantaged individuals, and  
417 consequently, likely underestimates the true magnitude of impact of COVID-19 on this  
418 community. Our study also had a methodological limitation in its categorization of genders  
419 — while we aimed to offer an inclusive set of options, we did not capture the full spectrum nor  
420 fluidity of genders across the cultural diversity of the countries represented. Yet, our sample  
421 does present results from a large number of non-binary individuals, which is a population that  
422 has generally been understudied but increasingly recognized as distinct from binary transgender

423 individuals.<sup>53</sup> Furthermore, the survey only presented questions about access to gender-  
424 affirming resources to individuals who self-identified as transgender (e.g., versus those who  
425 selected being a man and were AFAB but did self-report as transgender). The next wave of data  
426 collection will present the module to all persons whose sex assigned at birth does not match  
427 their current gender.

428  
429 The findings of the current study provide insights for future directions. Namely, future research  
430 should expand on this work by identifying protective factors that can be potentially leveraged to  
431 buffer the impact of COVID-19 pandemic on gender-affirming resources, mental health, and  
432 economic stability. There is also a need to contextualize and understand how transgender and  
433 non-binary communities are currently responding to the economic instabilities due to the  
434 epidemic, particularly in regions where mandatory stay-at-home orders remain. These  
435 restrictions may have led or will lead some transgender and non-binary individuals to turn to  
436 more dangerous work for income, unregulated and unmonitored markets for gender-affirming  
437 services or goods, or the use of alcohol and other substances to cope. Lastly, given the mobile  
438 and online nature of recruitment for this study, researchers should look for feasibility and  
439 opportunity with Hornet and other mobile apps as a platform for outreach, programming, and  
440 interventions for transgender and non-binary communities in regions where the apps are  
441 utilized.

442

## 443 **CONCLUSION**

444 Along with these research implications, our findings suggest the need for multiple programmatic  
445 interventions specific to transgender and non-binary populations. Maintaining and increasing  
446 secure access to lifesaving gender-affirming resources, mental health services, and economic  
447 stability will require backing from both typical and atypical sources — from nonprofit  
448 organizations to for-profit companies to academic researchers — both during and after the

449 COVID-19 pandemic. This could include, for example, instrumental support according to  
450 community needs (e.g., coordinating food bank deliveries or monetary support for bills) or  
451 resource mapping to help transgender and non-binary individuals identify where they can seek  
452 pandemic-related relief and aid without stigma or discrimination<sup>52</sup>. Health insurers and  
453 healthcare facilities could also transparently communicate changes in policies and logistics for  
454 gender-affirming services to alleviate anxieties around loss of access due to pandemic control  
455 measures. To prevent detrimental mental health consequences due to inaccessibility of gender-  
456 affirming resources and economic hardships, rapid policies (e.g., digital prescription refills) and  
457 flexible interventions (e.g., telehealth) are needed to maintain continuity of gender-affirming  
458 hormones as well as therapy and counseling. To achieve these interventions, innovative  
459 partnerships will be needed to reach the most marginalized— both by supporting trans-led,  
460 community-based organizations to maintain and expand their transgender health services as  
461 well as by increasing the capabilities of nation- and/or state-sponsored programs and private  
462 sector companies to better serve transgender and non-binary communities.

463 **Acknowledgements**

464 The authors thank the individuals who volunteered their valuable time to participate in our  
465 survey. The authors also thank the people who translated the survey from English into 13  
466 different languages: Ana Cara-Linda, Anna Yakusik, Carol Strong, Damiano Cerasuolo, Edward  
467 Sutanto, Ezgi Ayaser, Henrique Vicentim. Howie Lim, Ibu Ketty, Jose Garcia, Junming Wu,  
468 Ketty Rosenfeld, Luana Araujo, Mariano Ruiz, Maryam Motaghi, Maso, Omar Cherkaoui,  
469 Panyaphon Phiphatkunarnon, Pedro Moreno, Poyao Huang, Souad Orhan, Stephane Ku, Tanat  
470 Chinbunchorn, Teak Sowapruks, Top Medping, and Yalda Toofan.

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613 **Table 1: Demographics for transgender and non-binary individuals from the COVID-19 Disparities Survey**  
614 **distributed globally by the Hornet and Her apps between April 16 and August 3, 2020 (N=964)**  
615

	Overall (%) <sup>a</sup>
<b>Self-Reported Transgender Identity</b>	
Transgender man	95 (9.9%)
Transgender woman	201 (20.9%)
Non-binary (NB) only	594 (61.6%)
NB transgender woman	17 (1.8%)
NB transgender man	7 (0.7%)
NB, transgender woman, and transgender man	2 (0.2%)
Transgender man and transgender woman	7 (0.7%)
Man and woman	41 (4.3%)
<b>Researcher-Generated Gender Categories</b>	
Transmasculine (assigned female sex or intersex at birth)	37 (3.8%)
Transfeminine (assigned male sex or intersex at birth)	283 (29.4%)
Non-binary <sup>b</sup>	644 (66.8%)
<b>World Health Organization Region</b>	
Europe	451 (46.8%)
South-East Asia	242 (25.1%)
Americas	86 (8.9%)
Eastern Mediterranean	85 (8.8%)
Western Pacific	40 (4.2%)
Africa	35 (3.6%)
<b>Age</b>	
18-29 years	487 (50.5%)
30 - 39 years	287 (29.8%)
40 - 49 years	132 (13.7%)
50+ years	58 (6.0%)
<b>Socioeconomic Status</b>	
Lower	151 (15.7%)
Lower Middle	472 (49.0%)
Upper middle	290 (30.1%)
Upper	46 (4.8%)
<b>Years of Education</b>	
Less than 6 years	54 (5.6%)
6-12 years	176 (18.3%)
Some university, no degree	193 (20.0%)
Trade school	120 (12.5%)
University degree or more	410 (42.6%)
<b>Ethnic Minority</b>	
Yes	250 (26.0%)
No	493 (51.2%)
Don't know / can't answer	211 (21.9%)
<b>Immigrant</b>	
Yes	143 (14.8%)
No	719 (74.6%)
Not sure	85 (8.8%)
<b>COVID-19 Pandemic Environment</b>	
Ever lacked access to a mask	122 (12.7%)
In a location that ever issued "stay-at-home" confinement orders	729 (75.6%)

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617 **Table 2: Access to and actualization of gender-affirming resources among self-identified transgender and non-binary**  
 618 **individuals from the COVID-19 Disparities Survey between April 16, 2020 and August 3, 2020 (N=964)**  
 619

	Overall (%)	Transmasculine	Transfeminine	Non-Binary	p-value <sup>b</sup>
<b>Experienced reduced access to one or more gender-affirming resource below<sup>a</sup></b>	320 / 582 (55.0%)	17 / 26 (65.4%)	110 / 189 (58.2%)	193 / 367 (52.6%)	0.25
Hormone therapy and/or gender-affirming medication	143 / 401 (35.7%)	11 / 20 (55.0%)	61 / 145 (42.1%)	71 / 236 (30.1%)	0.01
Surgical aftercare	119 / 356 (33.4%)	6 / 14 (42.9%)	51 / 127 (40.2%)	62 / 215 (28.8%)	0.08
Cosmetic supplies and services, e.g., makeup, wigs, and hair removal	189 / 500 (37.8%)	9 / 21 (42.9%)	65 / 162 (40.1%)	115 / 317 (36.3%)	0.63
Mental health counseling and therapy*	192 / 448 (42.9%)	13 / 21 (61.9%)	57 / 143 (39.9%)	122 / 284 (43.0%)	0.16
Body modifiers, e.g., binders and packing material	160 / 443 (36.1%)	8 / 18 (44.4%)	57 / 148 (38.5%)	95 / 277 (34.3%)	0.52
<b>Compared to before the COVID-19 pandemic, how often able to live according to their gender</b>					
More or a lot more	67 / 860 (7.8%)	7 / 28 (25.0%)	22 / 232 (9.5%)	38 / 600 (7.1%)	< 0.001
About the same	466 (54.2%)	13 (46.4%)	110 (47.4%)	343 (57.2%)	
Less or not at all	327 (38.0%)	8 (28.6%)	100 (43.1%)	219 (36.5%)	

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<sup>a</sup> Denominators excluded participants who were not presented with these questions, did not respond, or said that the resource was not applicable to them  
<sup>b</sup> p-values were calculated using chi-squared and Fischer's exact tests as appropriate

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622 **Table 3: Mental health and resiliency indicators among transgender and non-binary individuals from the**  
 623 **COVID-19 Disparities Survey between April 16, 2020 and August 3, 2020 (N=964)<sup>a</sup>**  
 624

	Overall (%)	Transmasculine	Transfeminine	Non-Binary	p-value <sup>b</sup>
<b>Screened positive (PHQ-4 ≥3)</b>					
Depression	442 / 877 (50.4%)	17 / 35 (48.6%)	144 / 245 (58.8%)	281 / 597 (47.1%)	0.01
Anxiety	392 / 856 (45.8%)	17 / 33 (51.5%)	125 / 237 (52.7%)	250 / 586 (42.7%)	0.03
<b>Felt lonely since COVID-19 began</b>					
Yes	685 / 957 (71.6%)	28 / 37 (75.7%)	216 / 281 (76.9%)	441 / 639 (69.0%)	0.04
<b>Frequency of suicidal ideation since COVID-19 vs. 6 months prior</b>					
Was and remains rare	648 / 928 (69.8%)	26 / 36 (72.2%)	183 / 268 (68.3%)	439 / 624 (70.4%)	0.98
Decreased from frequent to rare	116 (12.5%)	4 (11.1%)	33 (12.3%)	79 (12.7%)	
Increased from rare to frequent	93 (10.0%)	3 (8.3%)	31 (11.6%)	59 (9.5%)	
Was and remains frequent	71 (7.6%)	3 (8.3%)	21 (7.8%)	47 (7.5%)	
<b>Reported having sources of hope, strength, comfort, and peace</b>					
Yes	489 / 768 (63.7%)	22 / 31 (71.0%)	100 / 209 (47.9%)	367 / 528 (69.5%)	< 0.001
<b>Reported being intent on finding emotional support and therapy</b>					
Agree	467 / 851 (54.9%)	20 / 35 (57.1%)	129 / 237 (54.4%)	318 / 579 (54.9%)	0.85
Disagree	136 (16.0%)	5 (14.3%)	43 (18.1%)	88 (15.2%)	
<b>Reported believing they could live a happy, full life despite the pandemic<sup>c</sup></b>					
Agree	516 / 847 (60.9%)	26 / 34 (76.5%)	137 / 231 (59.3%)	353 / 582 (60.6%)	0.22
Disagree	120 (14.2%)	2 (5.9%)	40 (17.3%)	78 (13.4%)	

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<sup>a</sup> Denominators excluded individuals who did not respond or reported not knowing their answer unless otherwise noted

<sup>b</sup> p-values were calculated using chi-squared and Fischer's exact tests as appropriate

<sup>c</sup> Denominator includes those who stated "neither agree nor disagree"

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627 **Table 4: Economic indicators among transgender and non-binary individuals from the COVID-19 Disparities Survey**  
 628 **between April 16, 2020 and August 3, 2020 (N=964)<sup>a</sup>**  
 629

	Overall (%)	Transmasculine	Transfeminine	Non-Binary	p-value <sup>b</sup>
<b>Lost job due to COVID-19</b>	151 / 953 (15.8%)	5 / 37 (13.5%)	53 / 278 (19.1%)	93 / 638 (14.6%)	0.21
<b>Expected reduction in income</b>					
0%	216 / 940 (23.0%)	13 / 37 (35.1%)	57 / 270 (21.1%)	10 / 633 (23.1%)	0.33
1-39%	265 (28.2%)	11 (29.7%)	70 (25.9%)	184 (29.1%)	
40-99%	337 (35.8%)	9 (24.3%)	101 (37.4%)	227 (35.9%)	
100%	122 (13.0%)	4 (10.8%)	42 (15.6%)	76 (12.0%)	
<b>Expected to lose health insurance<sup>c</sup></b>					
Yes	112 / 659 (17.0%)	7 / 23 (30.4%)	40 / 179 (22.4%)	65 / 457 (14.2%)	0.05
No	408 (61.9%)	11 (47.8%)	104 (58.1%)	293 (64.1%)	
<b>Financial Aid</b>					
Received and not needed	22 / 801 (2.8%)	3 / 30 (10.0%)	8 / 229 (3.5%)	11 / 542 (2.0%)	0.08
Not received but not needed	159 (19.8%)	9 (60.0%)	37 (13.2%)	113 (20.8%)	
Received and needed	92 (24.0%)	5 (16.7%)	56 (24.4%)	131 (24.2%)	
Not received and needed	428 (53.4%)	13 (43.3%)	128 (55.9%)	287 (53.0%)	
<b>Had cut or reduced meals</b>	361 / 900 (40.1%)	18 / 35 (51.4%)	131 / 258 (50.8%)	212 / 607 (34.9%)	< 0.001
<b>Among those employed, ability to miss work</b>					
Was telecommuting or on paid leave	163 / 473 (34.5%)	8 / 23 (34.8%)	32 / 128 (25.0%)	123 / 322 (38.2%)	0.06
Cannot afford to miss work but was following confinement orders	146 (30.9%)	7 (30.4%)	40 (31.2%)	99 (30.8%)	
Cannot afford to stay home and must work to survive	164 (34.7%)	8 (34.8%)	56 (43.8%)	100 (31.1%)	

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<sup>a</sup> Denominators excluded individuals who did not respond or reported not knowing their answer unless otherwise noted  
<sup>b</sup> p-values were calculated using chi-squared and Fischer's exact tests as appropriate  
<sup>c</sup> Denominator includes those who reported they "might or might not" lose their health insurance

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632 **Table 5: Bivariate prevalence ratios of screening positive for depression, screening positive for anxiety, and changes in**  
 633 **suicidal ideation among transgender and non-binary individuals from the COVID-19 Disparities Survey between April 16,**  
 634 **2020 and August 3, 2020**  
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	Screening positive for depression PrR (95% CI) <sup>a</sup>	Screening positive for anxiety PrR (95% CI)	Increased frequency of suicidal thoughts (vs. remained low) <sup>b</sup>	Retained frequent suicidal thoughts (vs. reduced frequency) <sup>c</sup>
Reported reduction in access to more than one (vs. 0) gender affirming resource	1.63 (1.36, 1.97) n = 532	1.61 (1.31, 1.97) n = 523	1.74 (1.07, 2.82) n = 449	1.37 (0.87, 2.15) n = 112
Reported decreased time (vs. increased) lived according to one's gender	1.21 (0.92, 1.58) n = 346	1.48 (1.04, 2.10) n = 331	0.57 (0.33, 0.98) n = 310	1.12 (0.50, 2.54) n = 68

<sup>a</sup> Prevalence ratio (PrR) and 95% confidence interval (95% CI)

<sup>b</sup> Among individuals who reported never or seldom having suicidal ideation in the six months prior to the pandemic beginning

<sup>c</sup> Among individuals who reported having suicidal ideation quite often, very often, and all the time in the six months prior to the pandemic beginning

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637 **SUPPORTING INFORMATION**

638 **S1 Table. Access to and actualization of gender-affirming resources among self-identified transgender and non-binary**  
 639 **individuals who participated in the COVID-19 Disparities Survey, stratified by country (April 16 – August 3, 2020, N=964)**  
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	European Region	South-East Asia Region	Region of the Americas	Eastern Mediterranean Region	Western Pacific Region	African Region	p-value <sup>a</sup>
<b>Experienced reduced access to one or more gender affirming resource below<sup>b</sup></b>	116 / 207 (56.0%)	109 / 204 (53.4%)	32 / 53 (60.4%)	30 / 56 (53.6%)	6 / 25 (24.0%)	15 / 23 (65.2%)	0.043
Hormone therapy and/or gender affirming medication	47 / 116 (40.5%)	55 / 186 (29.6%)	10 / 25 (40.0%)	11 / 32 (34.4%)	4 / 19 (21.1%)	8 / 13 (61.5%)	0.081
Surgical aftercare	37 / 93 (39.8%)	51 / 175 (29.1%)	7 / 15 (46.7%)	8 / 33 (24.2%)	2 / 18 (11.1%)	8 / 12 (66.7%)	0.008
Cosmetic supplies and services, e.g., makeup, wigs, and hair removal	68 / 176 (38.6%)	62 / 181 (34.3%)	21 / 46 (45.7%)	21 / 47 (44.7%)	3 / 23 (13.0%)	9 / 15 (60.0%)	0.025
Mental health counseling and therapy*	62 / 128 (48.4%)	73 / 186 (39.2%)	25 / 42 (59.5%)	12 / 42 (28.6%)	3 / 19 (15.8%)	9 / 18 (50.0%)	0.004
Body modifiers, e.g., binders and packing material	56 / 134 (41.8%)	58 / 179 (32.4%)	17 / 40 (42.5%)	14 / 46 (30.4%)	3 / 21 (14.3%)	8 / 13 (61.5%)	0.030
<b>Compared to before the COVID-19 pandemic, how often able to live according to their gender</b>							
More or a lot more	25 / 381 (6.6%)	20 / 236 (8.5%)	7 / 84 (8.3%)	6 / 71 (8.5%)	0 / 34 (0.0%)	6 / 33 (18.2%)	0.000
About the same	181 (47.5%)	156 (66.1%)	53 (63.1%)	26 (36.6%)	24 (70.6%)	13 (39.4%)	
Less or not at all	175 (45.9%)	60 (25.4%)	24 (28.6%)	39 (54.9%)	10 (29.4%)	14 (42.4%)	

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<sup>a</sup> p-values were calculated using chi-squared and Fischer's exact tests as appropriate

<sup>b</sup> Denominators excluded participants who were not presented with these questions, did not respond, or said that the resource was not applicable to them

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648 **S2 Table. Mental health and resiliency indicators among transgender and non-binary individuals who participated in the**  
 649 **COVID-19 Disparities Survey, stratified by country (April 16 – August 3, 2020, N=964<sup>a</sup>)**

	European Region	South-East Asia Region	Region of the Americas	Eastern Mediterranean Region	Western Pacific Region	African Region	p-value <sup>b</sup>
<b>Screened positive per PHQ-4 (score ≥3)</b>							
Depression	232 / 400 (58.0%)	66 / 222 (29.7%)	46 / 82 (56.1%)	48 / 76 (63.2%)	21 / 40 (52.5%)	18 / 32 (56.3%)	≤ 0.001
Anxiety	392 / 856 (45.8%)	392 / 856 (45.8%)	392 / 856 (45.8%)	392 / 856 (45.8%)	392 / 856 (45.8%)	392 / 856 (45.8%)	≤ 0.001
<b>Felt lonely since COVID-19 began</b>							
Yes	685 / 957 (71.6%)	685 / 957 (71.6%)	685 / 957 (71.6%)	685 / 957 (71.6%)	685 / 957 (71.6%)	685 / 957 (71.6%)	0.063
<b>Frequency of suicidal ideation since COVID-19 vs. 6 months prior</b>							
Was and remains rare	648 / 928 (69.8%)	648 / 928 (69.8%)	648 / 928 (69.8%)	648 / 928 (69.8%)	648 / 928 (69.8%)	648 / 928 (69.8%)	0.020
Decreased from frequent to rare	116 (12.5%)	116 (12.5%)	116 (12.5%)	116 (12.5%)	116 (12.5%)	116 (12.5%)	
Increased from rare to frequent	93 (10.0%)	93 (10.0%)	93 (10.0%)	93 (10.0%)	93 (10.0%)	93 (10.0%)	
Was and remains frequent	71 (7.6%)	71 (7.6%)	71 (7.6%)	71 (7.6%)	71 (7.6%)	71 (7.6%)	
<b>Reported having sources of hope, strength, comfort, and peace</b>							
Yes	489 / 768 (63.7%)	489 / 768 (63.7%)	489 / 768 (63.7%)	489 / 768 (63.7%)	489 / 768 (63.7%)	489 / 768 (63.7%)	≤ 0.001
<b>Reported being intent on finding emotional support and therapy<sup>c</sup></b>							
Agree	467 / 851 (54.9%)	467 / 851 (54.9%)	467 / 851 (54.9%)	467 / 851 (54.9%)	467 / 851 (54.9%)	467 / 851 (54.9%)	≤ 0.001
Disagree	136 (16.0%)	136 (16.0%)	136 (16.0%)	136 (16.0%)	136 (16.0%)	136 (16.0%)	
<b>Reported believing they could live a happy, full life despite the pandemic<sup>c</sup></b>							
Agree	516 / 847 (60.9%)	516 / 847 (60.9%)	516 / 847 (60.9%)	516 / 847 (60.9%)	516 / 847 (60.9%)	516 / 847 (60.9%)	≤ 0.001
Disagree	120 (14.2%)	120 (14.2%)	120 (14.2%)	120 (14.2%)	120 (14.2%)	120 (14.2%)	

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<sup>a</sup> Denominators excluded individuals who did not respond or reported not knowing their answer unless otherwise noted  
<sup>b</sup> p-values were calculated using chi-squared and Fischer's exact tests as appropriate  
<sup>c</sup> Denominator includes those who stated "neither agree nor disagree"

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**S3 Table: Socioeconomic indicators among transgender and non-binary individuals who participated in the COVID-19 Disparities Survey, stratified by country (April 16 – August 3, 2020, N=964)<sup>a</sup>**

	European Region	South-East Asia Region	Region of the Americas	Eastern Mediterranean Region	Western Pacific Region	African Region	p-value <sup>b</sup>
<b>Lost job due to COVID-19</b>	74 / 446 (16.6%)	38 / 238 (16.0%)	13 / 86 (15.1%)	15 / 83 (18.1%)	5 / 40 (12.5%)	2 / 35 (5.7%)	0.614
<b>Expected reduction in income</b>							
0%	113 / 436 (25.9%)	39 / 340 (16.3%)	25 / 86 (29.1%)	19 / 79 (24.1%)	9 / 40 (22.5%)	9 / 35 (25.7%)	0.055
1-39%	123 (28.2%)	66 (27.5%)	20 (23.3%)	20 (25.3%)	14 (35.0%)	11 (31.4%)	
40-99%	140 (32.1%)	110 (45.8%)	34 (39.5%)	25 (31.7%)	13 (32.5%)	10 (28.6%)	
100%	60 (13.8%)	25 (10.4%)	7 (8.1%)	15 (19.0%)	4 (10.0%)	5 (14.3%)	
<b>Expected to lose health insurance<sup>c</sup></b>							
Yes	32 / 307 (10.4%)	42 / 165 (25.5%)	11 / 67 (16.4%)	16 / 51 (31.4%)	7 / 35 (20.0%)	1 / 21 (4.8%)	< 0.001
No	203 (66.1%)	94 (57.0%)	48 (71.6%)	27 (52.9%)	18 (51.4%)	12 (57.1%)	
<b>Receipt and need of financial aid</b>							
Received and not needed	2 / 75 (2.7%)	6 / 208 (2.9%)	2 / 75 (2.7%)	3 / 64 (4.7%)	0 / 32 (0.0%)	0 / 30 (0.0%)	<0.001
Not received but not needed	86 (22.9%)	29 (13.9%)	19 (25.3%)	13 (20.3%)	6 (18.8%)	5 (16.7%)	
Received and needed	53 (14.1%)	92 (44.2%)	23 (30.7%)	8 (12.5%)	8 (25.0%)	5 (16.7%)	
Not received and needed	226 (60.3%)	81 (38.9%)	31 (41.3%)	40 (62.5%)	18 (56.3%)	20 (66.7%)	
<b>Had cut or reduced meals</b>	167 / 420 (39.8%)	82 / 230 (35.7%)	28 / 82 (34.2%)	45 / 75 (60.0%)	12 / 37 (32.4%)	16 / 34 (47.1%)	0.004
<b>Among those employed, ability to miss work</b>							
Was telecommuting or on paid leave	81 / 214 (37.9%)	40 / 127 (31.5%)	17 / 42 (40.5%)	11 / 34 (32.4%)	6 / 21 (28.6%)	6 / 20 (30.0%)	0.165
Cannot afford to miss work but was following confinement orders	72 (33.6%)	34 (26.8%)	9 (21.4%)	9 (26.5%)	5 (23.8%)	10 (50.0%)	
Cannot afford to stay home and must work to survive	61 (28.5%)	53 (41.7%)	16 (38.1%)	14 (41.2%)	10 (47.6%)	4 (20.0%)	

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<sup>c</sup> Denominator includes those who reported they "might or might not" lose their health insurance

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