

# Forgone Care among LGBTQ and Non-LGBTQ Americans during the COVID-19 Pandemic: The Role of Health, Social Support, and Pandemic-Related Stress

Jennifer Tabler, PhD, Rachel M. Schmitz, PhD, Ruby Charak, PhD, and Aidan Propst, BS

**Objectives:** In this study, we explore the role of Coronavirus Disease 2019 pandemic-related stress, social support, and health on unmet healthcare needs during the Coronavirus Disease 2019 pandemic, particularly among lesbian, gay, bisexual, transgender, and queer plus (LGBTQ+) adults.

**Methods:** We collected data using a self-administered online survey of US adults. Using logistic regression, we modeled potential risk and protective factors for not receiving needed care during the pandemic (forgone care) among LGBTQ+ individuals ( $n = 121$ ), cisgender and heterosexual-identifying women ( $n = 235$ ), and cisgender and heterosexual-identifying men ( $n = 62$ ). Limiting analyses to the LGBTQ+ subsample, we also assessed the unique role of LGBTQ+ discrimination and depressive symptoms.

**Results:** Logistic regression results suggested that social support was associated with lower odds of forgone care (odds ratio [OR] 0.95,  $P < 0.01$ ). Furthermore, better self-rated health and higher levels of income were associated with lower odds of forgone care (OR 0.56,  $P < 0.001$ , and OR 0.92,  $P < 0.05$ , respectively). Finally, LGBTQ+ individuals experienced uniquely high levels of forgone care, and LGBTQ+ discrimination (OR 1.03,  $P < 0.05$ ) and depressive symptoms (OR 1.09,  $P < 0.01$ ) were associated with higher odds of forgone care among LGBTQ+ participants.

**Conclusions:** Future research should examine the unique factors shaping the access to health care of LGBTQ+ adults in the United States, and healthcare practitioners should consider strategies to screen for discrimination and leverage the protective benefits of social support.

**Key Words:** COVID-19, LGBTQ+, pandemic stress, sexual and gender minorities, unmet need

From the Department of Criminal Justice and Sociology, University of Wyoming, Laramie, the Department of Sociology, Oklahoma State University, Stillwater, and the Department of Psychological Science, the University of Texas Rio Grande Valley, Edinburg.

Correspondence to Dr Jennifer Tabler, Department of Criminal Justice and Sociology, University of Wyoming, 1000 E University Ave, Laramie, WY 82070. E-mail: jtabler@uwyo.edu. To purchase a single copy of this article, visit [sma.org/smj](http://sma.org/smj). To purchase larger reprint quantities, please contact [Reprintsolutions@wolterskluwer.com](mailto:Reprintsolutions@wolterskluwer.com).

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Low-income individuals in the United States are more likely to delay or forgo needed health care because of a lack of insurance and high healthcare costs.<sup>1</sup> Delayed utilization of necessary health services is associated with negative health outcomes,<sup>2,3</sup> and people with the greatest health needs are more likely to forgo health care.<sup>4,5</sup> This study makes important contributions to the understanding of access to care during the Coronavirus Disease 2019 (COVID-19) pandemic that goes beyond economic barriers. In particular, this study emphasizes healthcare access of lesbian, gay, bisexual, transgender, queer plus (LGBTQ+) and non-LGBTQ+ individuals during the COVID-19 pandemic by assessing potential risk factors for delayed care, including pandemic-related stress, health status, and LGBTQ+ discrimination, and protective factors, such as social support.

## COVID-19 and Delayed or Forgone Care

The COVID-19 pandemic has had an unprecedented effect on healthcare utilization, with some surveys indicating that upwards of 41% of adults reported forgoing care during the early months of the pandemic.<sup>6</sup> Delayed and forgone care are interrelated indicators of unmet healthcare needs; however, forgone care is defined as having a perceived need of care during a given period, but not receiving needed care. Unmet healthcare needs are a challenge for preventive medicine, given that timely access to services

### Key Points

- Few studies have examined the unmet healthcare needs of lesbian, gay, bisexual, transgender, and queer+ adults, particularly during the Coronavirus Disease 2019 pandemic.
- Perceived cost (“cannot afford”) and fear of Coronavirus Disease 2019 infection were the most common identified reasons for delaying or forgoing needed health care during the pandemic.
- Cisgender and heterosexual-identifying women experienced a higher likelihood of unmet healthcare needs relative to cisgender and heterosexual-identifying men.
- Depressive symptoms and experiences of discrimination may be unique factors that shape the healthcare utilization of lesbian, gay, bisexual, transgender, and queer+ adults.

is central to the detection and prevention of serious diseases and medical problems. Individuals who lost work during the pandemic may have lost insurance or experienced heightened financial constraints leading to forgoing care. Furthermore, fear of COVID-19 infection may have led many people to avoid care.<sup>5,7</sup> Some delays or disruptions to care were involuntary, however, where the provider initiated appointment cancellation or delay. Involuntary disruptions to care access were more common during the COVID-19 pandemic as systems delayed nonemergency services, such as preventive care services (eg, cancer screenings).<sup>8</sup>

To address potential healthcare service disruptions during the peak of social distancing, some healthcare services transitioned to telehealth<sup>9</sup>; however, telehealth services can still be cost prohibitive for patients, even if they address nonfinancial barriers, including lack of transportation.<sup>10,11</sup> Beyond health system-specific reasons, there are likely additional personal factors altering access to care during the pandemic. For example, social support may facilitate healthcare utilization, including the use of preventive resources and chronic illness management.<sup>12,13</sup> The pandemic, however, has been disruptive to many sources of social support, especially for those who have reduced their social activities.<sup>14</sup> As such, during the pandemic, it is likely that financial and nonfinancial factors influenced healthcare utilization.

## LGBTQ+ Pandemic Experiences

Missing from previous research on reduced access to care during the pandemic are the diverse experiences of adults who identify as LGBTQ+. Preliminary research indicates that transgender and gender nonbinary people experienced delays to gender-affirming care.<sup>15</sup> In addition, mental health services also were difficult to access during the pandemic,<sup>16,17</sup> which heightened health inequalities among already marginalized groups.<sup>18</sup>

LGBTQ+ individuals may be uniquely vulnerable to pandemic-related stressors, including increased vulnerability to severe pandemic-related mental and physical health outcomes.<sup>19–23</sup>

Those who identify as LGBTQ+ have experienced exacerbated pandemic-related stress and depression.<sup>5,19,24–29</sup> Social distancing is likely uniquely isolating for LGBTQ+ individuals,<sup>30</sup> reducing LGBTQ+ community connections and social support that can alleviate minority stress.<sup>26</sup> The minority stress framework posits that people inhabiting minoritized social statuses are exposed to unique stressors based on their marginalized societal status.<sup>31</sup> For LGBTQ+ individuals, stressors can include heightened experiences of discrimination based on their sexual and/or gender identity.<sup>32–34</sup> To better inform interventions, it is imperative to examine whether pandemic stress and exposure to LGBTQ+ discrimination is uniquely shaping LGBTQ+ individuals' risk for unmet care.

## Present Study

This study examines risk and protective factors for forgone care during the pandemic. We anticipated that poorer health and lower income would correlate with a higher likelihood of forgone care and that perceived cost barriers would be a primary reason for

forgone care among those who experienced it (study area 1). We, however, also anticipated that elevated pandemic-related stress would be associated with a higher likelihood of forgone care and that social support would be protective against delayed or avoided care during the pandemic (study area 2). Finally, applying a minority stress framework, we anticipated that LGBTQ+ individuals would be more likely to have forgone care and that experiences of LGBTQ+ discrimination would be associated with an elevated risk of forgone care (study area 3).

## Method

### Procedure and Sample

We collected self-administered survey data between November and December 2020, months 8 and 9 of the pandemic. We used both purposive and convenience sampling strategies, targeting university employee and student listservs in three states (Oklahoma, Wyoming, Texas) and local LGBTQ+ organizations' social media pages to oversample for LGBTQ+ respondents. Potential participants were invited to participate in a self-administered online survey via secure survey link (Qualtrics, Provo, UT). Survey responses were anonymous, and participants were presented with a consent cover letter. Participants were informed that on completion of the survey, they would be securely redirected to submit an e-mail entry to a \$25 gift card raffle. Approximately 490 respondents started the survey, but only 418 were fully completed. Our sample is 14.8% cisgender and heterosexual-identifying men ( $n = 62$ ), 56.2% cisgender and heterosexual-identifying women ( $n = 235$ ), and 29.0% LGBTQ+-identifying individuals ( $n = 121$ ). Oklahoma State University's institutional review board reviewed and approved the study procedures.

### Measures

#### Outcome

*Forgone care* is a dichotomous variable comparing those who said 1 “yes” to “There was a time over the past 6 months [they] needed to go to the doctor or hospital but did not,” to those who said 0 “no.” Eight categorical but not mutually exclusive reasons for forgoing care were asked of those who responded “yes” to *forgone care*.

#### Key Covariates

*Pandemic stress scale* is a composite score based on five items (range 5–25), asking respondents to consider how worried they have been about the COVID-19 pandemic during the previous 14 days. Example items include, “I am worried I can't keep my family safe from the virus,” with response options ranging from 1 “not at all” to 5 “extremely” bothered. This scale has high internal consistency ( $\alpha = 0.91$ ). In sensitivity analyses (not shown) testing measures with additional conceptualizations of pandemic-related stress,<sup>35</sup> the results did not change substantively.

*Cis/heterosexual identity* combines information from self-reported sex assigned at birth, gender identity, and sexual

identity to create a three-category measure comparing cisgender and heterosexual (cishet) women (1), and LGBTQ+-identifying participants (2), with cishet men (0).

We also assessed the role of *self-rated health*, measured in response to the question, “How would you rate your health?” with response options falling on a 5-point scale ranging from poor (1) to excellent (5). We also assessed *depressive symptoms* using the Patient Health Questionnaire-9.<sup>36</sup> This measure is based on a 9-item scale asking respondents to rank how often they have been bothered by a specific problem during the past 2 weeks, such as “little interest or pleasure doing things” from (0) “not at all” to (3) “nearly every day” ( $\alpha = 0.92$ ).

Among the LGBTQ+ subsample, we also considered *LGBTQ+ discrimination*, measured as a 16-item composite score ranging from 16 to 96 from the Daily Heterosexist Experiences Questionnaire.<sup>37</sup> Participants were asked to rate from (1) “did not happen/not applicable” to (6) “it happened/bothered me extremely” on how much a specific problem distressed or bothered them during the past 6 months, and included items such as “Hearing about LGBTQ+ people you know being treated unfairly” ( $\alpha = 0.85$ ).

**Additional Covariates**

*Body Mass Index (BMI)* was calculated using self-reported height and weight information (kg/m<sup>2</sup>). *Social support* was a composite score measured using the 8-item, modified Medical Outcomes Study Social Support Survey (range 8–40;  $\alpha = 0.93$ ).<sup>38</sup> *Age* was measured as age in years. *Income* was measured using ordinal

income brackets ranging from “less than \$10,000” (1) to “more than \$90,000” (10). *Employment status* compared those who were employed full time (1) with those who worked part time (2), were a student (3), or currently not working (4). *Marital status* compared those who were married at the time of the survey (1) to those who were not married (0). *Latinx ethnicity* compared those who identify as being Hispanic/Latino/a/x or of Spanish origin (1) with those who identify as non-Hispanic (0). *White identifying* compares those who identify as White (0) with those identifying as non-White (1). Self-reported *ZIP code* also was included.

**Analytical Approach**

Using STATA version 15.1 (StataCorp, College Station, TX), we provide descriptive statistics for the full sample, stratified by cisgender/heterosexual identity, with cishet men as reference for unadjusted bivariate analyses. We then present the correlation matrix as a heatmap across the eight reasons for forgoing care (among the forgone care subsample, *n*forgone = 127) to assess potential correlation across reasons for unmet care during the COVID-19 pandemic.

We then use a series of nested logistic regressions to model odds ratios of forgone care as a function of key covariates and controls. We begin with a baseline model, add our sociodemographic covariates (model 1), then consider pandemic stress (model 2), followed by the addition of self-rated health and depressive symptoms (model 3). We then limit to LGBTQ+ respondents

**Table 1. Descriptive statistics**

	Mean (SD) or %			
	Full sample (N = 418)	Cishet men (n = 62) (reference)	Cishet women (n = 235)	LGBTQ+ people (n = 121)
Age, y (range 18–86)	28.58 (11.46)	29.66 (14.43)	29.26 (12.00)	26.71 (8.05) <sup>+</sup>
BMI (range 15.66–61.99)	26.70 (6.73)	25.63 (5.00)	26.16 (6.35)	28.20 (7.93)*
Social support (range 9–40)	30.24 (8.33)	27.53 (9.83)	31.25 (8.33)**	29.70 (7.10) <sup>+</sup>
Income (range 1–10)	6.10 (3.41)	6.23 (3.54)	6.36 (3.41)	5.51 (3.31)
Latinx identifying, %	14.35	9.68	11.91	21.49**
White identifying, %	88.04	80.65	87.66	92.56**
Employment status, %				
Full time	36.36	29.03	40.00	33.06
Part time	17.94	9.68	16.60	24.79
Student	40.19	53.23	39.15	35.54
Not working	5.50	8.06	4.26	6.61
Married (yes), %	24.40	29.03	27.66	15.70*
COVID-19 stress (range 5–25)	14.90 (5.93)	11.55 (5.55)	14.23 (5.71)***	17.93 (5.21)***
Self-rated health (range 1–5)	3.52 (0.91)	3.68 (0.94)	3.63 (0.86)	3.25 (0.92)**
Depressive symptoms (range 0–27)	10.01 (6.93)	8.73 (6.37)	9.03 (6.49)	12.57 (7.38)***
Forgone care (yes), %	30.38	20.97	28.09	39.67**

Data are from a survey of COVID-19 pandemic experiences, collected between October 2020 and December 2020. BMI, body mass index; Cishet, cisgender and heterosexual identifying; COVID-19, Coronavirus Disease 2019; LGBTQ+, lesbian, gay, bisexual, transgender, queer +.

<sup>+</sup>P < 0.10, \*P < 0.05, \*\*P < 0.01, \*\*\*P < 0.001.

**Table 2. Reasons for delayed or forgone care, N = 127**

Forgone group	Reason stated	%
1	Too expensive/cannot afford services	48.03
2	Fear of COVID-19 infection	39.37
3	Too scared to go, unrelated to COVID-19	28.35
4	Did not have insurance at time	22.05
5	Treated poorly previously by provider	13.39
6	Doctor canceled because of COVID-19	11.81
7	No transportation	5.51
8	Lost insurance because of COVID-19	4.75

Data are from a survey of COVID-19 pandemic experiences, collected between October 2020 and December 2020. Responses are not mutually exclusive. COVID-19, Coronavirus Disease 2019.

(nLGBTQ+ = 121), and examine LGBTQ+ discrimination on forgone care (in addition to the full model) (model 4).

## Results

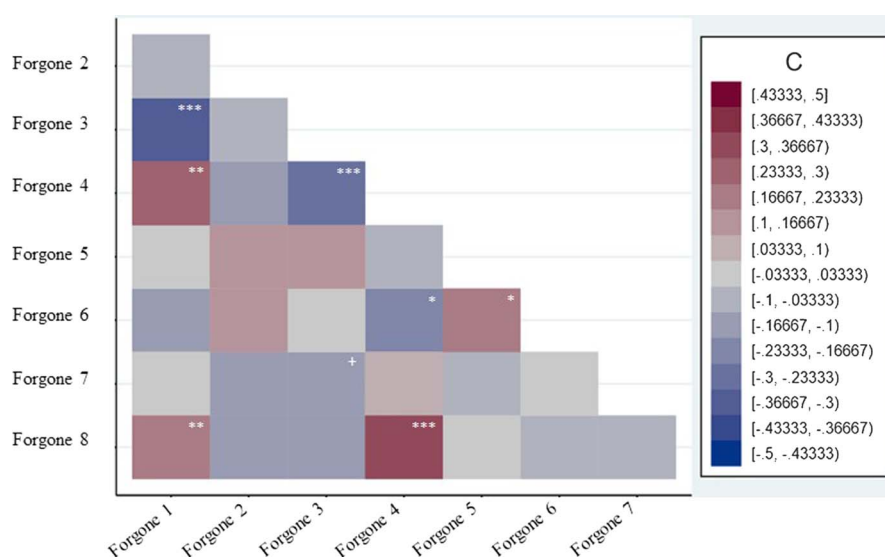
Approximately 30.4% (n = 127) of the sample went without needed care during the prior 6-month period; however, LGBTQ+-identifying participants were more likely (39.7%; n = 48) to have forgone needed health care relative to cishet-identifying men (21.0%; n = 13). LGBTQ+ participants had higher body mass index relative to cishet-identifying men (mean 28.2, standard deviation 7.9; mean 25.6, standard deviation 5, respectively), and were more likely to identify as White or Latinx. Furthermore, LGBTQ+ participants reported higher COVID-19 stress, higher depressive symptoms, and lower self-rated health, compared with cishet-identifying men. Cishet-identifying women reported higher social support and higher COVID-19 stress, relative to cishet-identifying men. The mean and median income

of the sample was approximately \$6, which represents the \$50,000 to \$59,999 income bracket. Additional descriptive statistics are noted in Table 1.

The most common reason for forgoing care during the pandemic (nforgone = 127) was cost (48.0%; n = 61) (forgone 1), followed by fear of COVID-19 infection (39.4%; n = 50) (forgone 2). This was followed by “too afraid to go for another reason” (unrelated to COVID-19) (28.4%; n = 36) (forgone 3), and “did not have insurance” (22.1%; n = 28) (forgone 4). The least common reason was loss of insurance as a result of COVID-19 (4.8%; n = 6) (forgone 8) (Table 2).

We present the correlation matrix detailing reasons for forgoing care as a heatmap in the Figure, in which the cooler tones represent negative correlations and the warmer tones represent positive correlations. Results suggest forgone 3 (too scared to go, unrelated to COVID-19) is negatively correlated ( $P < 0.001$ ) with forgone 1 (too expensive), as seen in the dark blue square in column one, row two of the Figure. Forgone 4 (did not have insurance) and forgone 8 (lost insurance because of COVID-19) are positively ( $P < 0.01$ ) correlated with forgone 1, as seen in the red square in column one, rows three and seven of the Figure. Similarly, forgone 4 is negatively correlated ( $P < 0.001$ ) with forgone 3 (too scared to go); however, forgone 6 (doctor canceled because of COVID-19) is negatively correlated with forgone 4 (did not have insurance) ( $P < 0.05$ ), and forgone 8 (lost insurance because of COVID-19) is positively correlated with forgone 4 (did not have insurance). Forgone 6 (doctor canceled because of COVID-19) also is positively correlated with forgone 5 (treated poorly previously by provider) ( $P < 0.05$ ).

Logistic regression results (Table 3) suggest LGBTQ+ individuals have higher odds of forgone care relative to cishet peers ( $P < 0.05$ ), even when sociodemographic factors (model 2) and pandemic-related stress (model 3) are considered. These



**Fig.** Heatmap of correlations across reasons for forgoing or delaying care during the COVID-19 pandemic. The sample includes those who said they needed to go to the doctor or hospital but did not during the previous 6 months (during the COVID-19 pandemic). For descriptions of each forgone type, see Table 2 (n = 127).  $^+P < 0.1$ ,  $^*P < 0.05$ ,  $^{**}P < 0.01$ ,  $^{***}P < 0.001$ . COVID-19, Coronavirus Disease 2019.

**Table 3. Logistic regression of forgone care during the COVID-19 pandemic**

	Baseline		Model 1		Model 2		Model 3	
	OR, 95% CI (robust SE)	Sig.	OR, 95% CI (robust SE)	Sig.	OR, 95% CI (robust SE)	Sig.	OR, 95% CI (robust SE)	Sig.
Gender/sexuality <sup>a</sup>								
Cis/het women	1.47, 0.86–2.52 (0.40)		2.06, 1.22–3.47 (0.55)	**	1.85, 1.10–3.12 (0.49)	*	1.85, 1.12–3.07 (0.48)	*
LGBTQ+-identifying	2.48, 1.23–5.01 (0.89)	*	2.69, 1.46–4.95 (0.84)	**	2.14, 1.12–4.09 (0.71)	*	1.84, 0.93–3.64 (0.64)	+
Age, y			1.00, 0.97–1.02 (0.01)	n.s.	1.00, 0.98–1.02 (0.01)	n.s.	1.00, 0.98–1.02 (0.01)	n.s.
BMI			1.03, 0.99–1.07 (0.02)	n.s.	1.03, 0.99–1.07 (0.02)	n.s.	1.01, 0.97–1.05 (0.02)	n.s.
Social support			0.94, 0.91–0.97 (0.01)	***	0.94, 0.91–0.97 (0.01)	***	0.95, 0.92–0.98 (0.02)	**
Income			0.90, 0.84–0.96 (0.03)	**	0.90, 0.84–0.96 (0.03)	**	0.92, 0.85–0.99 (0.03)	*
Latinx identifying			1.77, 1.02–3.07 (0.50)	*	1.60, 0.93–2.76 (0.44)	+	1.63, 0.93–2.87 (0.47)	+
White identifying			1.02, 0.41–2.53 (0.47)	n.s.	1.02, 0.39–2.64 (0.49)	n.s.	0.91, 0.65–2.09 (0.44)	n.s.
Employment status <sup>b</sup>								
Part time			1.35, 0.69–2.65 (0.47)	n.s.	1.41, 0.70–2.87 (0.51)	n.s.	1.20, 0.58–2.47 (0.44)	n.s.
Student			1.11, 0.54–2.28 (0.41)	n.s.	1.18, 0.57–2.48 (0.44)	n.s.	1.02, 0.45–2.34 (0.43)	n.s.
Not working			1.51, 0.48–4.73 (0.88)	n.s.	1.47, 0.49–4.44 (0.83)	n.s.	1.07, 0.26–4.32 (0.76)	n.s.
Married (yes)			1.31, 0.75–2.28 (0.37)	n.s.	1.29, 0.73–2.26 (0.37)	n.s.	1.16, 0.65–2.09 (0.35)	n.s.
COVID-19 stress					1.04, 1.01–1.08 (0.02)	**	1.01, 0.97–1.05 (0.02)	n.s.
Self-rated health							0.56, 0.43–0.73 (0.08)	***
Depressive symptoms							1.04, 0.99–1.09 (0.03)	n.s.
Constant	0.27, 0.16–0.45 (0.07)	***	0.94, 0.21–4.28 (0.66)	n.s.	0.60, 0.12–3.11 (0.46)	n.s.	4.31, 0.42–44 (5.13)	n.s.
AIC statistic	511.28		486.11		484.28		462.87	
Pseudo R <sup>2</sup>	0.02		0.10		0.11		0.16	
N	418		418		418		418	

Data are from a survey of COVID-19 pandemic experiences, collected between November 2020 and December 2020. Analyses are clustered by ZIP code. AIC, Akaike information criterion; BMI, body mass index; CI, confidence interval; cis/het, cisgender and heterosexual identifying; COVID-19 Coronavirus Disease 2019; LGBTQ+, lesbian, gay, bisexual, transgender, queer +; n.s., nonsignificant; OR, odds ratio; SE, standard error; Sig., significance.

<sup>a</sup>Reference is cisgender/heterosexual men.

<sup>b</sup>Reference is full-time employment.

<sup>+</sup> $P < 0.10$ , \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

differences, however, are only marginally significant ( $P < 0.10$ ), with the consideration of self-rated health and depressive symptoms (model 4). Cis/het women have an 85% higher odds of reporting forgone care relative to cis/het men, holding all else constant ( $P < 0.05$ ) (model 4).

Social support is negatively associated with forgone care, in which every one-unit increase in social support lowers the odds of forgone care by 5% ( $P < 0.01$ , model 4). Better self-rated health is associated with a reduced odds of forgone care, in which a one-unit positive change in health ranking corresponds to a reduction of odds of forgone care by 44% ( $P < 0.001$ , model 4). Finally, income is correlated with a reduced odds of forgone care, in which every increase in income category corresponds to an 8% reduction in odds of forgone care, ceteris paribus ( $P < 0.05$ , model 4).

For the LGBTQ+ subsample ( $n_{LGBTQ+}=121$ ) (Table 4), logistic regression results suggest that depressive symptoms are associated with forgone care (odds ratio 1.09,  $P < 0.01$ ) (model 3), holding all else constant. LGBTQ+ discrimination also is potentially correlated with forgone care among LGBTQ+

adults, with each additional unit change in LGBTQ+ discrimination being associated with a 3% higher odds of forgone care ( $P < 0.05$ ), ceteris paribus (model 3).

## Discussion

This study explores protective and risk factors for forgone care during the COVID-19 pandemic and identifies the unique experiences of LGBTQ+ individuals. Namely, study findings suggest that those in poor health<sup>39</sup> or who are low income/without insurance are more likely to forgo care (study area 1)<sup>40</sup>; however, we did not find pandemic stress to be independently associated with forgone care, particularly when considering health status (study area 2). Finally, our results suggest experiences of discrimination and mental health challenges were uniquely associated with forgone care among LGBTQ+ respondents (study area 3).

In our sample, approximately 31% of respondents ( $n_{forgone} = 127$ ) said they went without needed care during the May/June to November/December 2020 period of the pandemic. This seems to be a slightly lower rate relative to some other samples.<sup>6,40,41</sup> Although 48% of participants who forwent care ( $n = 61$ ) in



**Table 4. Logistic regression of forgone care during the COVID-19 pandemic (LGBTQ+ subsample)**

	Model 1		Model 2		Model 3	
	OR, 95% CI (robust SE)	Sig.	OR, 95% CI (robust SE)	Sig.	OR, 95% CI (robust SE)	Sig.
Age, y	1.01, 0.95–1.07 (0.03)	n.s.	1.04, 0.98–1.11 (0.03)	n.s.	1.04, 0.98–1.11 (0.03)	n.s.
BMI	1.02, 0.97–1.07 (0.03)	n.s.	1.01, 0.95–1.07 (0.03)	n.s.	1.01, 0.95–1.07 (0.03)	n.s.
Social support	0.92, 0.84–1.01 (0.04)	+	0.94, 0.86–1.02 (0.04)	n.s.	0.93, 0.85–1.02 (0.04)	n.s.
Income	0.91, 0.81–1.03 (0.06)	n.s.	0.89, 0.77–1.01 (0.06)	+	0.90, 0.78–1.04 (0.07)	n.s.
Latinx ethnicity	1.92, 0.86–4.72 (0.78)	n.s.	1.72, 0.72–4.13 (0.77)	n.s.	1.34, 0.56–3.22 (0.60)	n.s.
White identifying	0.67, 0.11–4.08 (0.62)	n.s.	0.65, 0.14–3.06 (0.51)	n.s.	0.84, 0.15–4.63 (0.73)	n.s.
Employment status <sup>a</sup>						
Part time	1.32, 0.27–6.32 (1.05)	n.s.	0.92, 0.19–4.52 (0.75)	n.s.	0.74, 0.17–3.28 (0.56)	n.s.
Student	0.74, 0.33–1.67 (0.31)	n.s.	0.57, 0.21–1.52 (0.28)	n.s.	0.51, 0.20–1.35 (0.25)	n.s.
Not working	3.27, 0.46–23.23 (3.28)	n.s.	2.96, 0.36–24.21 (3.17)	n.s.	3.70, 0.46–29.74 (3.94)	n.s.
Married	0.98, 0.30–3.16 (0.59)	n.s.	0.80, 0.27–2.34 (0.44)	n.s.	0.75, 0.26–2.19 (0.41)	n.s.
COVID-19 stress	1.01, 0.94–1.08 (0.04)	n.s.	0.97, 0.89–1.06 (0.04)	n.s.	0.97, 0.89–1.05 (0.04)	n.s.
Self-rated health			0.66, 0.42–1.04 (0.15)	+	0.66, 0.42–1.05 (0.16)	+
Depressive symptoms			1.09, 1.02–1.16 (0.04)	*	1.09, 1.02–1.16 (0.04)	**
LGBTQ+ discrimination					1.03, 1.00–1.06 (0.01)	*
Constant	5.48, 0.18–168 (9.56)	n.s.	6.04, 0.11–329 (12.31)	n.s.	2.77, 0.33–229 (6.24)	n.s.
AIC statistic	166.33		158.32		158.28	
Pseudo R <sup>2</sup>	0.12		0.20		0.21	
N	121		121		121	

Data are from a survey of COVID-19 pandemic experiences, collected between November 2020 and December 2020. Analyses are clustered by ZIP code. AIC, Akaike information criterion; BMI, body mass index; CI, confidence interval; cisHet, cisgender and heterosexual identifying; COVID-19, coronavirus disease 2019; LGBTQ+, lesbian, gay, bisexual, transgender, queer +; n.s., nonsignificant; OR, odds ratio; SE, standard error.

<sup>a</sup>Reference is full-time employment.

+P < 0.10, \*P < 0.05, \*\*P < 0.01.

our sample identified cost as a major reason for avoiding care, 39% stated that the fear of COVID-19 was a motivator (n = 49). Income and poorer self-rated health were both associated with higher forgone care, indicating that these well-established risk factors for unmet care continued to be most relevant for healthcare access during the pandemic. These findings align with prior studies.<sup>6,40</sup> When considered simultaneously with income and health status, however, pandemic-related stress was not independently associated with forgone care (study area 2). There is likely overlap between individuals with poor health or of low income, who were more likely experiencing elevated pandemic stress; pandemic stress thus likely works in tandem with other important factors to pattern healthcare access.

Our study does suggest that social support was protective against unmet healthcare needs during the pandemic (study area 2); prior research highlights the benefit of social support for mental and physical health,<sup>42–44</sup> and on healthcare-seeking behavior.<sup>12,13</sup> Social support is a potential protective factor that can be leveraged by clinicians and public health professionals through the development of community programs and support groups, or by connecting people to existing social programs.

We found modest evidence that LGBTQ+ individuals were more likely to report forgone/delayed care during the pandemic relative to cisgender/heterosexual men (study area 3). Nearly

40% (n = 48) of LGBTQ+ participants reported forgoing care during the period, relative to 21% (n = 13) of cisgender/heterosexual men and 28% (n = 66) of cisgender/heterosexual women. Similar to previous studies, LGBTQ+ individuals may be at greater risk of unmet healthcare needs relative to non-LGBTQ+ peers.<sup>45</sup> Identifying whether unmet mental health needs are driving this relationship is important, however, given the unique association between depressive symptoms and forgone care we found among our LGBTQ+ subsample. Applying clinical cutoffs of Patient Health Questionnaire-9 scores of >10 for probable depression,<sup>46</sup> 57% (n = 71) of LGBTQ+ respondents would be considered having probable depression, compared with 37% (n = 23) of cisHet men and 36% (n = 85) of cisHet women. Future research should disentangle for which types of care—physical or mental health—LGBTQ+ individuals may be experiencing the greatest unmet need.

Furthermore, LGBTQ+ discrimination may play a unique role in the unmet care needs of people who identify as LGBTQ+. Daily discrimination is associated with elevated forgone care,<sup>3</sup> and this relationship can be exacerbated for people navigating multiple oppressions, such as LGBTQ+ people of color.<sup>47</sup> LGBTQ+ individuals may have been uniquely exposed to discrimination during the pandemic.<sup>20</sup> Future research should examine whether people who are more likely to be structurally disadvantaged and

experience elevated rates of discrimination are also experiencing higher levels of involuntary care delays. Clinicians and public health professionals should screen for discrimination to better intervene on barriers to access and improve continuity of care for marginalized groups.

Although this study adds important nuance to our understanding of unmet care during the pandemic, it is cross-sectional and therefore speaks to associations, rather than processes. Longitudinal data are critical to understanding the potential long-term health effects of unmet care during the pandemic.<sup>48</sup> In addition, we were not able to examine LGBTQ+ individuals by their unique sexual or gender identities.<sup>21</sup> Furthermore, participants were not selected at random, and may overrepresent LGBTQ+ people from college populations as well as underrepresent the pandemic experiences of LGBTQ+ racial and ethnic minorities. In addition, respondents are largely from Texas, Wyoming, and Oklahoma, whose social and policy climates may have had unique effects on the care-seeking behaviors of participants. Furthermore, although we found statistically significant results, in some cases these may not translate to practical differences. Finally, this study did not examine the adoption of telehealth resources leveraged to meet people's care needs<sup>49</sup>; future studies should explore potential barriers to telehealth access.

## Conclusions

This study contributes to the understanding of protective and risk factors for delays or disruptions of care during the pandemic. Our results suggest that income and perceived costs of healthcare remained a predominant predictor of forgone care throughout the pandemic, and we did not find that pandemic-related stress was uniquely associated with elevated forgone care. Although those who experienced unmet need did identify fear of COVID-19 infection as a reason for forgoing care, poorer self-rated health and lower income are potentially more significant risk factors for unmet care needs. Furthermore, LGBTQ+ individuals likely experienced high levels of forgone care during the pandemic, with LGBTQ+ discrimination and depressive symptoms playing a unique role in their elevated risk of forgone care. Future research should examine the distinctive factors influencing LGBTQ+ adults' healthcare access, and clinicians and public health professionals should implement innovative strategies to leverage informal and formal supports and address the adverse effects of discrimination.

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