Housing Insecurity Among Disabled Students During the COVID-19 Pandemic

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Abstract

The purpose of this paper is to examine rates of college students' housing insecurity from September to November 2020 during the COVID-19 pandemic, with a focus on whether there are differences in disabled and nondisabled students' housing insecurity controlling for additional demographic variables and pandemic-related experiences. Using a large sample of 70,210 students enrolled at 130 community and technical colleges and 72 four-year colleges, we discovered that students with chronic illnesses, physical disabilities, psychological disorders, and multiple disabilities had significantly greater odds of experiencing housing insecurity compared to their peers. Students with cognitive, learning, or neurological disorders or disabilities and those who had no disabilities or medical conditions had significantly lower odds of experiencing housing insecurity compared to other students.

Keywords: disabled students, housing insecurity, basic needs insecurity, COVID-19 pandemic

Over the last several years, scholars have drawn attention to the growing rates of housing insecurity among college and university students in the U.S. (Broton & Goldrick-Rab, 2018; Goldrick-Rab et al., 2018). Current estimates suggest that between 38% to 56% of undergraduate students experience housing insecurity, which includes lacking the ability to pay rent, mortgage, or utilities, experiencing increases in the cost of housing that make it difficult to afford housing, lacking affordable housing alternatives, living with others beyond the expected capacity of the residence, staying temporarily with others (e.g., couch surfing), living in places not designed for human habitation (e.g., vehicle, outdoor location), moving three or more times in a year, or experiencing homelessness (Broton, 2020; Broton & Goldrick-Rab, 2018; Goldrick-Rab et al., 2018; Goldrick-Rab et al., 2019; Olfert et al., 2021; Soria et al., 2022; The Hope Center for College, Community, and Justice, 2021).

Although research on housing insecurity in college students has expanded in recent years, there are only

a few studies featuring analyses regarding whether there are different rates of housing insecurity by students' demographic characteristics. Researchers have focused primarily on whether there are differences in students' housing insecurity by students' race/ethnicity, age, income or socioeconomic status, sexual orientation, and sex or gender (Duran & Núñez, 2021; Goldrick-Rab et al., 2020; Olfert et al., 2021; Smith & Knechtel, 2020). At present, there is a dearth of literature in which scholars have analyzed housing insecurity rates among disabled students. Moreover, the existing literature is limited by aggregated measures of disability, limitations in housing insecurity measures, and descriptive (as opposed to inferential) analyses. For instance, Olfert et al. examined differences in housing insecurity by whether students have any disabilities (yes/no), finding that disabled students have higher rates of housing insecurity; however, the authors did not examine whether there are more nuanced differences in housing insecurity by students' type of disability (e.g., physical disability). Smith and

Knechtel found that students with a disabling physical or psychiatric condition experienced higher rates of homelessness compared to their nondisabled peers; however, the authors only addressed homelessness, which affects a smaller proportion of college students than housing insecurity (Goldrick-Rab et al., 2019). Soria et al. (2020) also used limited measures when examining students' housing insecurity during the COVID-19 pandemic (i.e., lacking money to cover the costs of housing and unable to pay the costs of housing), although they disaggregated the analyses by three types of disabilities (physical, learning, neurodevelopmental or cognitive, and any combinations of the three). However, the study was descriptive in nature and the authors did not account for other demographic variables or COVID-19 related experiences when examining students' housing insecurity.

At present, there is a lack of understanding regarding the rates at which students with different types of disabilities experience housing insecurity. The omission of housing insecurity research on disabled college students is concerning due to the prevalence of disabled students in higher education and the serious implications of housing insecurity on disabled students' educational experiences and outcomes. Nearly one in five undergraduates has a disability and disabled students are more likely to come from low-income backgrounds (National Center for Education Statistics, 2021, 2022), which means they may have a greater likelihood of experiencing housing insecurity (Olfert et al., 2021; The Hope Center for College, Community, and Justice, 2021). Housing insecurity is associated with lower college completion rates among students (Broton, 2021; Smith & Knechtel, 2020; Wright et al., 2020), which could exacerbate the existing disparities in degree completion rates for disabled students (National Center for Education Statistics, 2022).

Moreover, housing insecurity is also linked with decreased academic performance (Broton, 2021), increased rates of food and financial insecurity (Haskett et al., 2020; Leung, et al. 2020; Martinez et al., 2021; Smith & Knechtel, 2020), and increased rates of distress and social isolation (Martinez et al., 2021). The lack of regular access to safe and secure housing (e.g., where they do not encounter abuse, have their basic needs met, do no experience danger, or feel safe with a sense of security) negatively affects students' psychological and mental health (Soria & Horgos, 2021; Wright et al., 2020). Lacking dependable housing increases chronic stress, which has been linked to decreases in cognitive function and physiological changes detrimental to the brain (Broton, 2021). The attendant outcomes of housing insecurity could therefore have disastrous implications for disabled college students, who already encounter significant structural barriers in higher education including ableism, faculty who do not provide accommodations, and a less welcoming campus climate, among other challenges (Hutcheon & Wolbring, 2012; Soria, 2021; Toutain, 2019; Zehner, 2018).

Housing insecurity is an even more important topic to analyze during the global COVID-19 pandemic because college students experienced higher rates of housing insecurity during the pandemic than prior to the pandemic (Glantsman et al., 2022; Sackey et al., 2022; Soria et al., 2022). In March of 2020, the World Health Organization declared a global pandemic for an outbreak of outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes coronavirus disease (COVID-19). The declaration of the global pandemic initiated a series of policies causing disruptive changes within U.S. higher education institutions. Some of the safety measures designed to lessen the spread of COVID-19 in spring 2020 included moving in-person classes to distance education modalities, encouraging non-essential staff and faculty to work remotely, and closing residence life facilities. Due to social distancing measures, many college students who were employed onor off-campus lost hours, wages, jobs, and expected employment positions (e.g., spring or summer jobs or internships; Soria et al., 2022).

Several of those policies created financial hardships that may have led to the increases in housing insecurity. In addition to the lost wages or employment positions, college students also experienced unexpected increases in spending (e.g., for technology necessary to engage in online learning), students' families also encountered financial hardships (e.g., furloughs, loss of wages, lost jobs), and students experienced barriers in accessing emergency financial aid (Cornett & Fletcher, 2022; Goldrick-Rab et al., 2020; Soria & Horgos, 2021; Soria et al., 2022; The Hope Center for College, Community, and Justice, 2021). Further, many higher education institutions closed their on-campus housing facilities and required students to relocate off-campus in spring 2020, which meant that students lost access to not only their on-campus housing, but also their access to critical support services (Soria & Horgos, 2021; Soria et al., 2022; The Hope Center for College, Community, and Justice, 2021). As campuses closed their on-campus residences in spring 2020, some college students who relocated off campus moved into living environments where they experienced physical or emotional abuse, where their identities were not respected, and where they did not feel safe or protected, which could have created further instability in their housing conditions (Soria & Horgos, 2021; Soria et al., 2022). Some students were also left stranded without housing because campuses abruptly closed without offering alternatives for those who did not have families or homes to which they could return (Goldrick-Rab et al., 2020).

Although most campuses reopened their on-campus housing facilities by fall 2020, many of the aforementioned factors, including financial hardships, may have continued to negatively affect students' housing security during the ongoing pandemic (Cornett & Fletcher, 2022; Soria et al., 2022). For instance, many students from underrepresented or marginalized backgrounds were expected to serve as caregivers for family members or had an increased obligation to financially support their family compared to before the pandemic, which could have exacerbated their housing insecurity (Cornett & Fletcher, 2022). While the limited extant research suggests that disabled students may have higher rates of housing insecurity, at present, there are no formal investigations of housing insecurity among disabled college students during the COVID-19 pandemic. Therefore, the purpose of this study is to examine the rates of housing insecurity experienced by disabled and nondisabled college students during fall 2020 of the pandemic. Specifically, the research question driving this study was: Do disabled college students have significantly different odds of experiencing housing insecurity compared to their nondisabled peers while controlling for additional demographic variables and COVID-19 experiences?

Conceptual Framework

We used Glover et al.'s (2020) conceptual framework for mitigating the equity harms of COVID-19. The model stipulates that inequitable COVID-19 policies may generate harms upon individuals who were already marginalized, oppressed, and disenfranchised prior to the pandemic, including people with disabilities. For instance, stay-at-home policies or health restrictions may have reduced the ability for individuals with disabilities to work and earn wages at their pre-pandemic rates. Students (or their family members) who were unable to work from home and worked in spaces with high public contact may have been at a higher risk of exposure to COVID-19. Individuals with health risks or pre-existing medical conditions may have been at a greater risk of complications if they were infected with the virus.

Furthermore, disabled individuals who lost employment positions or the opportunities to work fulltime hours may have lost access to medical insurance, thus exacerbating the financial expenses associated with medical care and treatment. Glover and colleagues cited several demographic variables associated with equity harms due to COVID-19 policies, including disability, employment, race/ethnicity, gender, family education, and socioeconomic status. We used many of those variables in our analysis when we examined whether there are significant disparities in college students' housing insecurity by their disabilities.

Methodology

Instrument and Sample

We used data from the 2020 #RealCollege Survey (The Hope Center for College, Community, and Justice, 2022), which was administered to 1.84 million college students at 130 community and technical colleges and 72 four-year colleges in 42 states between September and November 2020. The survey was emailed to students and it was framed as a survey about college life, not about basic needs insecurity. The response rate averaged 10.6% (n = 195,629), although only a smaller subset of 70,210 students answered all the COVID-19 experience items used in the present analysis. Although low, the response rate was the highest for any #RealCollege Survey administration and comparable to response rates for similar surveys (Betancourt & Wolff-Eisenberg, 2019; California Student Aid Commission, 2020; The Hope Center for College, Community, and Justice, 2021).

The demographic information from the final sample used in the analysis is shown in Table 1. Students responded yes/no regarding whether they had a disability in six areas: chronic illness, physical disability, psychological disorder, other disability or medical condition, no disability, or cognitive, learning, or neurological disorder/disabilities. We summed the disability categories to create a category for students who had multiple disabilities, which was the largest group of disabled students in the sample (Table 1). Notably, 48% of students who responded to the disability-related items had at least one disability. While that number is higher than appears in many surveys, it is consistent with other #RealCollege survey administrations and may reflect the growing number of college students who have disabilities (The Hope Center for College, Community, and Justice, 2020). The three largest groups of disabilities included 19.4% of students who had multiple disabilities, 17.8% who had a psychological disorder (e.g., depression, anxiety), and 5.1% who had a chronic illness (e.g., autoimmune disorders). The majority of respondents were women (70.5%), 59.8% were enrolled full time, 57.2% attended a two-year community or technical college, and 96.0% were U.S. citizens or permanent residents.

Table 1

Descriptive Statistics for the Sample

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Southeast Asian1,3992.0American Indian or Native American3460.5Hispanic, Latinx, or Chicanx12,27617.5Pacific Islander or Native Hawaiian1970.3Other Asian or Asian American2,8174.0Multiracial10,00414.2No race/ethnicity provided1,5862.3Sexual Orientation2,8114.0Heterosexual or straight54,02176.9Gay or lesbian2,8114.0Bisexual8,11511.6Prefer to self-describe sexual orientation2,1223.0Prefer not to answer sexual orientation3,1414.5Economic Background3,1414.5Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education25,52636.4First-generation (parents have \geq a bachelor's degree)25,52636.4Living with a Spouse or Partner44,68463.6	Black or African American	6,961	9.9
American India or Native American3460.5Hispanic, Latinx, or Chicanx12,27617.5Pacific Islander or Native Hawaiian1970.3Other Asian or Asian American2,8174.0Multiracial10,00414.2No race/ethnicity provided1,5862.3Sexual Orientation2,8114.0Heterosexual or straight54,02176.9Gay or lesbian2,8114.0Bisexual8,11511.6Prefer to self-describe sexual orientation2,1223.0Prefer not to answer sexual orientation3,1414.5Economic Background3,1414.5Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education25,52636.4First-generation (parents have \geq a bachelor's degree)25,52636.4Living with a Spouse or Partner44,68463.6	Middle Eastern, North African, Arab, or Arab American	610	0.9
Hispanic, Latinx, or Chicanx12,27617.5Pacific Islander or Native Hawaiian1970.3Other Asian or Asian American2,8174.0Multiracial10,00414.2No race/ethnicity provided1,5862.3Sexual Orientation1,5862.3Heterosexual or straight54,02176.9Gay or lesbian2,8114.0Bisexual8,11511.6Prefer to self-describe sexual orientation2,1223.0Prefer not to answer sexual orientation3,1414.5Economic Background57.8Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up29,60642.2Farental Education236.4Continuing-generation (parents have \geq a bachelor's degree)25,52636.4Living with a Spouse or Partner44,68463.6	Southeast Asian	1,399	2.0
Pacific Islander or Native Hawaiian1970.3Other Asian or Asian American $2,817$ 4.0 Multiracial $10,004$ 14.2 No race/ethnicity provided $1,586$ 2.3 Sexual Orientation $1,586$ 2.3 Heterosexual or straight $54,021$ 76.9 Gay or lesbian $2,811$ 4.0 Bisexual $8,115$ 11.6 Prefer to self-describe sexual orientation $2,122$ 3.0 Prefer not to answer sexual orientation $3,141$ 4.5 Economic Background 76.9 42.2 Family had trouble making ends meet financially growing up $29,606$ 42.2 Family did not have trouble making ends meet financially growing up $40,604$ 57.8 Parental Education $25,526$ 36.4 First-generation (parents have \geq a bachelor's degree) $25,526$ 36.4 Living with a Spouse or Partner $44,684$ 63.6	American Indian or Native American	346	0.5
Other Asian or Asian American $2,817$ 4.0 Multiracial $10,004$ 14.2 No race/ethnicity provided $1,586$ 2.3 Sexual Orientation $1,586$ 2.3 Heterosexual or straight $54,021$ 76.9 Gay or lesbian $2,811$ 4.0 Bisexual $8,115$ 11.6 Prefer to self-describe sexual orientation $2,122$ 3.0 Prefer not to answer sexual orientation $3,141$ 4.5 Economic Background 76.9 42.2 Family had trouble making ends meet financially growing up $29,606$ 42.2 Family did not have trouble making ends meet financially growing up $40,604$ 57.8 Parental Education $25,526$ 36.4 First-generation (parents have \geq a bachelor's degree) $25,526$ 36.4 Living with a Spouse or Partner $44,684$ 63.6	Hispanic, Latinx, or Chicanx	12,276	17.5
Multiracial10,00414.2No race/ethnicity provided1,5862.3Sexual Orientation110,00414.2Heterosexual or straight54,02176.9Gay or lesbian2,8114.0Bisexual8,11511.6Prefer to self-describe sexual orientation2,1223.0Prefer not to answer sexual orientation3,1414.5Economic Background110,00414.2Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education255.2636.4First-generation (parents have < a bachelor's degree)	Pacific Islander or Native Hawaiian	197	0.3
No race/ethnicity provided1,5862.3Sexual Orientation1,5862.3Heterosexual or straight54,02176.9Gay or lesbian2,8114.0Bisexual8,11511.6Prefer to self-describe sexual orientation2,1223.0Prefer not to answer sexual orientation3,1414.5Economic Background29,60642.2Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education225,52636.4First-generation (parents have \geq a bachelor's degree)25,52636.4Living with a Spouse or Partner44,68463.6	Other Asian or Asian American	2,817	4.0
Sexual OrientationHeterosexual or straight $54,021$ 76.9 Gay or lesbian $2,811$ 4.0 Bisexual $8,115$ 11.6 Prefer to self-describe sexual orientation $2,122$ 3.0 Prefer not to answer sexual orientation $3,141$ 4.5 Economic Background $29,606$ 42.2 Family had trouble making ends meet financially growing up $29,606$ 42.2 Family did not have trouble making ends meet financially growing up $40,604$ 57.8 Parental Education $25,526$ 36.4 First-generation (parents have \leq a bachelor's degree) $25,526$ 36.4 Living with a Spouse or Partner $44,684$ 63.6	Multiracial	10,004	14.2
Heterosexual or straight $54,021$ 76.9 Gay or lesbian $2,811$ 4.0 Bisexual $8,115$ 11.6 Prefer to self-describe sexual orientation $2,122$ 3.0 Prefer not to answer sexual orientation $3,141$ 4.5 Economic Background $29,606$ 42.2 Family had trouble making ends meet financially growing up $29,606$ 42.2 Family did not have trouble making ends meet financially growing up $40,604$ 57.8 Parental Education $25,526$ 36.4 First-generation (parents have < a bachelor's degree)	No race/ethnicity provided	1,586	2.3
Gay or lesbian2,8114.0Bisexual8,11511.6Prefer to self-describe sexual orientation2,1223.0Prefer not to answer sexual orientation3,1414.5Economic Background29,60642.2Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education25,52636.4First-generation (parents have < a bachelor's degree)	Sexual Orientation		
Bisexual $8,115$ 11.6 Prefer to self-describe sexual orientation $2,122$ 3.0 Prefer not to answer sexual orientation $3,141$ 4.5 Economic Background $29,606$ 42.2 Family had trouble making ends meet financially growing up $29,606$ 42.2 Family did not have trouble making ends meet financially growing up $40,604$ 57.8 Parental Education $25,526$ 36.4 First-generation (parents have \geq a bachelor's degree) $25,526$ 36.4 First-generation (parents have $<$ a bachelor's degree) $44,684$ 63.6 Living with a Spouse or Partner $44,684$ 63.6	Heterosexual or straight	54,021	76.9
Prefer to self-describe sexual orientation $2,122$ 3.0 Prefer not to answer sexual orientation $3,141$ 4.5 Economic Background $29,606$ 42.2 Family had trouble making ends meet financially growing up $29,606$ 42.2 Family did not have trouble making ends meet financially growing up $40,604$ 57.8 Parental Education $25,526$ 36.4 First-generation (parents have < a bachelor's degree)	Gay or lesbian	2,811	4.0
Prefer not to answer sexual orientation3,1414.5Economic BackgroundFamily had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental EducationContinuing-generation (parents have \geq a bachelor's degree)25,52636.4First-generation (parents have < a bachelor's degree)	Bisexual	8,115	11.6
Economic Background29,60642.2Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education25,52636.4First-generation (parents have < a bachelor's degree)	Prefer to self-describe sexual orientation	2,122	3.0
Family had trouble making ends meet financially growing up29,60642.2Family did not have trouble making ends meet financially growing up40,60457.8Parental Education25,52636.4Continuing-generation (parents have \geq a bachelor's degree)25,52636.4First-generation (parents have < a bachelor's degree)	Prefer not to answer sexual orientation	3,141	4.5
Family did not have trouble making ends meet financially growing up40,60457.8Parental Education25,52636.4Continuing-generation (parents have \geq a bachelor's degree)25,52636.4First-generation (parents have < a bachelor's degree)	Economic Background		
Parental Education $25,526$ 36.4 Continuing-generation (parents have \geq a bachelor's degree) $25,526$ 36.4 First-generation (parents have $<$ a bachelor's degree) $44,684$ 63.6 Living with a Spouse or Partner $44,684$ 63.6	Family had trouble making ends meet financially growing up	29,606	42.2
Continuing-generation (parents have \geq a bachelor's degree)25,52636.4First-generation (parents have < a bachelor's degree)		40,604	57.8
First-generation (parents have < a bachelor's degree)	Parental Education		
First-generation (parents have < a bachelor's degree)	Continuing-generation (parents have \geq a bachelor's degree)	25,526	36.4
Living with a Spouse or Partner			63.6
	Student does not live with a spouse or partner	51,413	73.2

(Table 1 Continued)

	п	%
Student lives with a spouse or partner	18,797	26.8
Enrollment Intensity		
Full-time student	42,018	59.8
Part-time student	28,192	40.2
Foster Care Experience		
Student has been in foster care	1,608	2.3
Student has not been in foster care	68,602	97.7
Citizenship		
U.S. citizen or permanent resident	67,376	96.0
International student or non-citizen	2,834	4.0
Parent, Guardian, or Caregiver to Children		
Student is a parent, guardian, or caregiver to children	13,026	18.6
Student is not a parent, guardian, or caregiver to children	57,184	81.4
Type of Institution		
Two-year college	40,163	57.2
Four-year college or university	30,047	42.8
Institution's Location		
College is in the Midwest	11,756	16.7
College is in the South	22,441	32.0
College is in the Northeast	8,941	12.7
College is in the West	27,072	38.6
Food Insecurity		
Experiencing food insecurity	25,556	36.4
Not experiencing food insecurity	44,654	63.6
Sources of Financial Aid		
Uses Pell grants to pay for college	32,833	46.8
Uses student loans to pay for college	24,944	35.5
Has a job to pay for college	45,997	65.5
Pays for college with support from family/friends	36,886	52.5
COVID-19 Experiences		
Had to take care of a family member while attending class	28,159	40.1
Had to help children in the home with their schooling while attending classes	21,413	30.5
Lost a job	22,239	31.7
Struggled to pay to go back home	8,451	12.0
Could not afford to go back home	4,633	6.6
Experienced cuts to hours or pay at work	31,222	44.5
Experienced an increase in hours or pay at work	11,977	17.1
Worked as a frontline worker supporting COVID	9,354	13.3
Was sick with COVID	4,691	6.7
A close friend or family member was sick with COVID	28,626	40.8
A close friend or family member died of COVID	8,680	12.4

Measures

Dependent Variable

The 2020 #RealCollege Survey assessed students' housing insecurity using ten items (e.g., "In the past 12 months, was there a rent or mortgage increase that made it difficult to pay?"). The full list of housing insecurity survey items by students' disability categories are shown in Table 2. Students experienced housing insecurity if they responded "yes" to any of the housing insecurity items of the survey or indicated that they had moved at least three times in the last year (The Hope Center for College, Community, and Justice, 2021). In the final sample, 49.6% of all students were experiencing housing insecurity.

Independent Variables

Students reported all demographic and college experience variables, which we converted using effect coding (Mayhew & Simonoff, 2015) except in the case of variables with dichotomous categories (e.g., full-time or part-time enrollment). Dummy coding omits one group (the common referent group) from analysis of variables with more than two categories (e.g., race/ethnicity, gender); however, in effect coding, the coefficients or odds ratios are interpreted relative to the average of the full sample and all groups can be included in analyses (Ro & Bergom, 2020). With the dichotomous variables, each coefficient or odds ratio can be interpreted compared to the other level (e.g., students enrolled full time can be compared to students enrolled part time). In addition to the demographic variables provided in Table 1, we also included students' age ($\bar{x} = 26.0, s = 9.44$) and total years enrolled in college ($\bar{x} = 2.93, s = 1.91$).

The 2020 #RealCollege Survey assessed students' food security using the U.S. Department of Agriculture's (USDA, 2012) 18-item set of questions. While most of the items were phrased as "yes/no" questions (e.g., "In the last 30 days, were you ever hungry but didn't eat because there wasn't enough money for food?"), some were scaled "never true," "sometimes true," or "often true" (e.g., In the last 30 days, I couldn't afford to eat balanced meals). The yes/no items were coded as no = 0, yes = 1 and the other items were recoded as never true = 0, sometimes or often true = 1. Students who reported that there were children under the age of 18 present in the home also responded to items assessing food security for the children (e.g., "In the last 30 days, did you ever cut the size of your children's meals because there wasn't enough money for food?"). The sum of affirmative responses represents students' raw food security score. Students who had scores between 0 and 2 experienced marginal or high food security while all others were experiencing low or very low food security, which we dichotomized to 0 = student is not experiencing food insecurity (raw score 0-2) and 1 = student is experiencing food insecurity (raw score 3-18). In the sample, 36.4% of students were experiencing food insecurity.

Students also shared information about their experiences during the COVID-19 pandemic. We used 11 items in which students shared experiences such as taking care of family members or children in the home while attending classes or losing employment, wages, or hours (Table 1). Students responded "yes or no" to those items and the most common experience was losing hours or pay at work (44.5%; Table 1). The Hope Center for College, Community, and Justice (2021) has drawn attention to the disparities in students' COVID-19 experiences by demographic characteristics, primarily race and ethnicity, gender, type of institution, and parenting status; however, researchers have not explored disparities by students' disabilities. We also included items in which students shared how they pay for college (i.e., through loans, Pell grants, with a job, or with support from family or friends).

Data Analyses

First, we analyzed the descriptive statistics for students' responses to the housing insecurity items by the disability demographic variables by examining the counts and frequencies. Next, we analyzed the data using a multivariate logistic regression to examine the odds of experiencing housing insecurity controlling for demographic variables and COVID-19 experiences. Hosmer and Lemeshow's (2000) test statistic was non-significant (p > .05) and suggested model adequate fit. The model properly classified 73.9% of the cases.

Limitations

Our research study is cross-sectional and the data were collected in fall 2020; as a result, the limited snapshot of students' experiences with housing insecurity may not reflect changes as the pandemic has progressed and the findings may not be applicable to students' experiences in other academic years in the future. The effect sizes are small for most of the independent variables (Chen et al., 2010), which means that there are other variables not measured in the present study that may better be associated students' housing insecurity. The way the items related to students' disabilities were constructed was also limited and we were unable to capture insights for some specific disabilities or medical conditions (e.g., autism spectrum disorder). Finally, although our research study has a large sample, the response rates in the individual campuses were low and there was also significant item response drop off as students progressed to the survey, factors that could increase response bias (Fosnacht et al., 2017). While the low response rates were similar to other surveys of basic needs insecurity (Baker-Smith et al., 2020; Betancourt & Wolff-Eisenberg, 2019; California Student Aid Commission, 2020), the lower response limit generalizability of the sample to the greater population of students in the U.S.

Results

The results of the first analyses suggest there are some descriptive differences in students' responses to the housing insecurity items by the disability demographic variables. Students with multiple disabilities (those who selected more than one disability category) were more likely to select affirmative responses to most of the housing insecurity items compared to other students (Table 2). For instance, 30.6% of students with multiple disabilities did not pay the full amount of utilities, 30.1% were unable to pay or underpaid rent or mortgage, and 19.9% experienced homelessness in the past 12 months. In fact, compared to all others, those with multiple disabilities were more likely to experience housing insecurity (59.3%).

Some additional descriptive differences that emerged from the analyses as well. Students with psychological disabilities had higher affirmative responses to some (but not all) of the housing insecurity items compared to their peers. In general, there were many nuances in the descriptive results that warrant additional attention; for instance, there were some survey items in which nondisabled students had higher affirmative responses compared to disabled students (e.g., 11.1% of nondisabled students experienced homelessness compared to 10.3% of students with chronic illnesses, 20.7% of nondisabled students were unable to pay or underpaid the costs of housing compared to 18.5% of students with cognitive, learning, or neurological disorder or disability).

Next, the results of the logistic regression suggest that there are some differences in the odds of experiencing housing insecurity when considering the presence of additional demographic variables and COVID-19 experiences (Table 3). Students with chronic illnesses, physical disabilities, psychological disorders, and multiple disabilities had significantly greater odds of experiencing housing insecurity compared to other students (OR = 1.125, p < .001, OR = 1.137, p < .001, OR = 1.105, p < .001, and OR =

1.242, p < .001, respectively). Students with cognitive, learning, or neurological disorders or disabilities had significantly lower odds of experiencing housing insecurity compared to other students (OR = 0.879, p < .001). Students with no disabilities or medical conditions also had significantly reduced odds of experiencing housing insecurity compared to their peers (OR = 0.907, p < .001).

While the purpose of this paper was to primarily focus on housing insecurity among disabled and nondisabled students, there are some additional demographic differences in housing insecurity that may be important for practitioners to consider. For instance, transgender, Black or African American, American Indian or Native American, and Hispanic, Latinx, or Chicanx students all had greater odds of experiencing housing insecurity compared to their peers. Students with spouses or partners, full-time students, students previously in the foster care system, international students, and students who are parents also had significantly greater odds of experiencing housing insecurity.

Furthermore, some economic indicators were also associated with increased odds of experiencing housing insecurity. Students who were from low-income backgrounds, have Pell grants and student loans, are employed, experience food insecurity, and who attend a college in the western U.S. also have greater odds of experiencing housing insecurity. Finally, students who had negative COVID-19 related experiences, by and large, were more likely have increased odds of experiencing housing insecurity. Students who lost a job during the pandemic were over twice as likely as their peers to experience housing insecurity.

Discussion and Recommendations

The results of our present study are congruent with other observations about disabled students' housing insecurity during the COVID-19 pandemic (Horgos et al., 2020; Soria et al., 2020): by and large, disabled students were more likely to experience housing insecurity compared to nondisabled students, although those results were not always consistent among all disability groups. Even though most campuses had reopened their on-campus residences by fall 2020 and returned to in-person classes (often with social distancing or masking policies in place), the initial disruption of the pandemic may have had continued effects on disabled students. Approximately 40-60% of disabled students experienced housing insecurity in fall 2020 and many lacked financial resources to pay rent, mortgage, or utilities or experienced an increase in the cost of housing that was difficult to pay.

Received a summons to appear in housing court in the last 12 months	Lived in a household where they felt unsafe in the last 12 months	Moved at least three times in the past 12 months	Lived with others beyond the capacity of the residence in the past 12 months	Had an account default or go into collections in the past 12 months	Moved in with other people due to financial issues in the past 12 months	Had a rent or mortgage increase that was difficult to pay in the past 12 months	Not paid the full amount of utilities in the past 12 months	Unable to pay or underpaid rent or mortgage in the past 12 months	Homeless in the last 12 months	Experienced housing insecurity in the past 12 months	
323 0.9%	2,287 6.3%	2,586 7.1%	2,727 7.5%	3,490 9.6%	3,706 10.2%	5,480 15.0%	7,509 20.6%	7,538 20.7%	4,047 11.1%	16,494 45.2%	No Disability or Medical Condition <i>n</i> , %
29 0.8%	246 6.9%	288 8.0%	277 7.7%	499 13.9%	382 10.7%	534 14.9%	931 26.0%	820 22.9%	370 10.3%	1,793 50.0%	Chronic Illness <i>n</i> , %
23 0.9%	202 7.8%	210 8.1%	206 7.9%	249 9.6%	289 11.1%	334 12.8%	440 16.9%	482 18.5%	324 12.5%	1,100 42.3%	Cognitive, Learning, or Neurological Disorder or Disability <i>n</i> , %
11 1.4%	81 10.1%	75 9.3%	82 10.2%	89 11.1%	89 11.1%	123 15.3%	160 19.9%	150 18.7%	110 13.7%	384 47.8%	Physical Disability <i>n</i> , %
92 0.7%	1,498 12.0%	1,307 10.4%	1,180 9.4%	1,632 13.0%	1,854 14.8%	1,887 15.1%	3,019 24.1%	3,050 24.4%	1,936 15.5%	6,680 53.4%	Psychological Disability <i>n</i> , %
167 1.2%	2,257 16.6%	1,421 10.5%	1,633 12.0%	2,638 19.4%	2,386 17.6%	2,583 19.0%	4,160 30.6%	4,085 30.1%	2,699 19.9%	8,060 59.3%	Multiple Disabilities <i>n</i> , %
10 1.6%	62 10.1%	39 6.3%	60 9.7%	83 13.5%	66 10.7%	113 18.3%	159 25.8%	130 21.1%	72 11.7%	294 47.7%	Other Disability or Medical Condition <i>n</i> , %

Table 2

Table 3

Logistic Regression Analysis for Students' Housing Insecurity (n = 70,210)

			95% Confidence Interval (OR)		
	OR	р	Lower Bound	Upper Bound	
Chronic illness	1.125	***	1.076	1.252	
Cognitive, learning, or neurological disorder or disability	0.879	***	0.805	0.960	
Other disability or medical condition	0.885		0.751	1.041	
Physical disability	1.137	***	1.041	1.242	
Psychological disorder	1.105	***	1.047	1.166	
Multiple disabilities	1.242	***	1.176	1.311	
No disability or medical condition	0.907	***	0.867	0.950	
Woman	0.990		0.932	1.052	
Man	1.010		0.951	1.073	
Nonbinary	0.967		0.843	1.109	
Transgender	1.156	*	1.016	1.315	
Prefer to self-describe or not to provide gender	1.038		0.901	1.196	
White	0.887	***	0.836	0.941	
Black or African American	1.245	***	1.156	1.342	
Middle Eastern, North African, Arab, or Arab American	1.037		0.868	1.239	
Southeast Asian	0.798	***	0.705	0.903	
American Indian or Native American	1.280	***	1.008	1.626	
Hispanic, Latinx, or Chicanx	1.098	***	1.029	1.173	
Pacific Islander or Native Hawaiian	0.928		0.678	1.270	
Other Asian or Asian American	0.773	***	0.702	0.851	
Multiracial	0.952		0.890	1.018	
No race/ethnicity provided	1.051		0.982	1.124	
Heterosexual or straight	0.944	***	0.907	0.981	
Gay or lesbian	0.993		0.942	1.047	
Bisexual	1.007		0.955	1.062	
Prefer to self-describe sexual orientation	1.094	*	1.003	1.193	
Prefer not to answer sexual orientation	0.921	*	0.855	0.992	
Family had trouble making ends meet financially growing up	1.401	***	1.349	1.455	
Continuing generation (parents have \geq a bachelor's degree)	1.042	*	1.000	1.085	
Student lives with a spouse or partner	1.103	***	1.054	1.154	
Full-time student	1.064	**	1.021	1.110	
Student has been in foster care	1.459	***	1.284	1.658	
U.S. citizen or permanent resident	0.625	***	0.569	0.688	
Student is a parent, guardian, or caregiver to children	1.300	***	1.221	1.383	
Age	1.011	***	1.009	1.014	
Two-year college	0.945	*	0.904	0.989	

(Table 3 Continued)

			95% Confidence Interval (OR)		
	OR	р	Lower Bound	Upper Bound	
Total years enrolled in college	0.999		0.989	1.010	
College is in the Midwest	0.972		0.910	1.038	
College is in the South	0.949		0.895	1.007	
College is in the Northeast	1.029		0.963	1.099	
College is in the West	1.198	***	1.130	1.270	
Food insecurity	4.352	***	4.183	4.529	
Uses Pell grants to pay for college	1.274	***	1.226	1.324	
Uses student loans to pay for college	1.367	***	1.313	1.424	
Has a job to pay for college	1.176	***	1.128	1.227	
Pays for college with support from family/friends	1.044	*	1.005	1.084	
Had to take care of a family member while attending class	1.430	***	1.373	1.490	
Had to help children in the home with their schooling while attending classes	1.091	***	1.041	1.144	
Lost a job	2.622	***	2.438	2.820	
Struggled to pay to go back home	1.585	***	1.432	1.755	
Could not afford to go back home	1.636	***	1.571	1.704	
Experienced cuts to my hours or pay at work	1.469	***	1.412	1.529	
Experienced an increase in hours or pay at work	0.986		0.938	1.037	
Worked as a frontline worker supporting COVID	1.283	***	1.214	1.357	
Was sick with COVID	1.155	***	1.072	1.245	
A close friend or family member was sick with COVID	1.234	***	1.186	1.285	
A close friend or family member died of COVID	1.163	***	1.095	1.236	
Constant	0.196	***			

Note. * p < .05, ** p < .01, *** p < .001; $\chi^2 = 18014.768$, df = 56, p < .001; pseudo- R^2 values 0.272 (Cox & Snell, 1989) and 0.363 (Nagelkerke, 1991).

The descriptive analyses (Table 2) point to some concerning trends in students' experiences with housing insecurity. High proportions of disabled students (~19%-30%) were unable to pay the full cost of their rent or mortgage while nearly equally high rates (~17%-31%) did not pay the full amount of the cost of their utilities. Many disabled college students lost jobs, hours, and wages during the pandemic, including the loss of wages or income from family. Further, significant proportions of disabled students also experienced financial challenges, such as food insecurity and sudden increases in spending for technology or living expenses (Soria et al., 2020). Those financial burdens likely made it more difficult for disabled students to

pay the cost of their housing and utilities on time, thereby increasing housing insecurity rates among disabled students. While many of those challenges are related to policies enacted during the pandemic (Glover et al., 2020), some are also reflective of the ongoing economic fallout of the pandemic in society. For instance, inflation and the costs of off-campus student housing continue to rise precipitously, with some college towns and neighborhoods experiencing up to a 30% increase in the cost of off-campus student rentals compared to the previous year (Marcus, 2022). While on-campus housing may be a more affordable option for disabled students attending four-year colleges or universities, the demand for on-campus housing often exceeds the supply, the costs of on-campus housing are rising and have outpaced the cost of tuition and fees, and disabled students may encounter ableism in on-campus housing, leaving them unable to live on campuses with housing policies that do not accommodate or prioritize their disabilities (Ma & Pender, 2021; Marcus, 2022; Wilke et al., 2019).

It is troubling that such high percentages of disabled students (~10%-20%) experienced homelessness during the COVID-19 pandemic. Homelessness is the most severe form of housing insecurity and it is associated with food insecurity, lower academic performance, physical and mental health concerns, trauma, and lower degree completion (Hallett & Freas, 2018; Haskett et al., 2020; Miller, 2011; Shankar-Brown, 2017; Smith & Knechtel, 2020; Tobin, 2016). Students who experience homelessness sometimes report that they often go to extreme lengths just to get by, including trading sex for money or shelter, and they also report high rates of being violently attacked, visiting emergency rooms, and being hospitalized for more than 24 hours (Smith & Knechtel, 2020). Such unsafe and risky situations could potentially exacerbate disabled students' medical conditions or disabilities, leading to long-term negative consequences that affect many areas of their lives.

When controlling for demographic variables and pandemic-related experiences, we also discovered that students with chronic illnesses, physical disabilities, psychological disorders, and multiple disabilities had significantly greater odds of experiencing housing insecurity compared to other students (Table 3). Further, students with cognitive, learning, or neurological disorders or disabilities had significantly lower odds of experiencing housing insecurity compared to other students. Like Soria et al. (2020), we found that students with cognitive, learning, and neurological disabilities had among the lowest rates of housing insecurity among all disability groups. We speculate that students with chronic illnesses, physical disabilities, psychological disorders, and multiple disabilities may have been more negatively affected by the pandemic than students with cognitive, learning, or neurological disabilities. Soria et al. and Horgos et al. (2020) discovered that students with physical, psychological, and multiple disabilities experienced more financial hardships compared to students with other types of disabilities and nondisabled students. It may be the case that students with physical, psychological, and multiple disabilities experienced greater challenges in securing or maintaining employment due to the risks involved with exposure to the coronavirus. Or, if they contracted COVID, the effects may have been more detrimental, costing

more in health care expenses or lost wages due to the inability to work.

We recommend that higher education practitioners, administrators, and faculty take several steps to better support disabled college students who are experiencing housing insecurity. Practitioners should measure rates of housing insecurity on their own campuses and include demographic measures related to students' disabilities. Armed with data about the rates of housing insecurity among disabled students, faculty and practitioners can direct resources, programs, or services to the students who may benefit the most from additional support. Faculty and practitioners can also more effectively advocate for more institutional, local, state, or governmental resources to support students and their unique needs.

While we encourage basic needs insecurity data to be collected at the institutional level, it is also possible for practitioners to collect the data within disability support services offices, where students can respond to survey items about housing insecurity or other basic needs insecurity while completing the intake process. We encourage practitioners to frame their surveys as generic "college experience" surveys (like in the #RealCollege survey). If surveys are framed as "basic needs insecurity" surveys, some students may not respond to the items because they do not recognize their own situations relative to food or housing insecurity (Martinez et al., 2021; Smith & Knechtel, 2020). Students may inaccurately assume that housing insecurity only includes homelessness and thus recuse themselves from survey participation (Martinez et al., 2021; Smith & Knechtel, 2020); therefore, framing the survey as an overview of students' collegiate experiences may help practitioners to capture more accurate data related to the prevalence of housing insecurity among students.

At the institutional level, administrators and practitioners can create a "single point of contact" model to support students with wraparound services (Broton, 2021; Crutchfield et al., 2019; Nix et al., 2021). The wraparound services can help students access a variety of services in a "one-stop" fashion rather than being directed to different offices or resources on campus and could also feature a dedicated advisor who is assigned to each student. Students experiencing housing insecurity are also likely to experience food insecurity and mental health disorders-and navigating complex institutional support systems can exacerbate students' levels of stress (Broton, 2021; Gupton, 2017; Mulrenan et al., 2017; Soria & Horgos, 2021). Among practitioners, faculty, and students, there is a general lack of understanding related to the availability of governmental programs, including whether students might be eligible for those programs, what those programs provide, and how to apply (Larin, 2018). It may therefore be unrealistic for practitioners (e.g., in disability support services) and faculty to navigate those systems and may be preferable to have dedicated practitioners working in a "single point of contact office" who are trained to help students identify their eligibility and apply for governmental assistance (Crutchfield et al., 2016). A single point of contact resource center also provide holistic support and resources to students including offering counseling services, determining eligibility for emergency aid or grants, completing the Free Application for Federal Student Aid (FAFSA) form, applying for public assistance programs (e.g., Social Security benefits, health or disability insurance, or the Supplemental Nutrition Assistance Program [SNAP]), working with staff in governmental agencies (e.g., state vocational rehabilitation services), seeking emergency housing or shelter, obtaining free nutritious food, or locating employment opportunities (Broton & Goldrick-Rab, 2016; Nix et al., 2021).

The rising costs of higher education coupled with stagnant funding opportunities for students have resulted in a gap between what students receive for financial aid and the funds that are necessary to afford educational necessities (e.g., textbooks) and cover basic needs, including food, housing, transportation (Goldrick-Rab, 2016). The costs of higher education are disproportionately higher for disabled students (Fox et al., 2021), so we encourage higher education administrators to lower prices for students by offering sliding scales for on-campus housing based upon students' financial situations, eliminating on-campus housing application fees, creating lists of affordable off-campus housing opportunities, developing partnerships with local rental offices, and offering support for students who need to navigate housing-related situations such as landlord disputes, housing discrimination, or eviction (Broton, 2021; Soria et al., 2022). To support disabled students, we also recommend that higher education administrators eliminate fees related to diagnosis, assessment, testing, making course materials accessible, or other services, which could help students redirect financial resources to support their basic needs.

Finally, there are additional steps administrators, practitioners, and faculty can take to support disabled students experiencing housing insecurity. Faculty can add information to their syllabi to direct students to campus services where they can receive assistance with basic needs insecurity (Soria et al., 2022). Faculty can also embed links to those services in their learning management systems and share information and resources in class (Soria et al., 2022). Adminis-

trators and practitioners should ensure that there are enough affordable and accessible housing opportunities to meet disabled students' needs on campus or help students locate affordable and accessible housing off-campus. For on-campus housing, practitioners should reserve spaces in advance of each academic year to accommodate students with disabilities or renovate existing housing spaces to be more accommodating to the changing needs of disabled students (e.g., adding more single rooms; Wilke et al., 2019). Additionally, all stakeholders-administrators, practitioners, faculty, and students-can actively lobby for local, state, and federal legislation to support students' housing needs. For instance, in the state of Washington, Senate Bill 5738 (2019) was introduced to require four-year colleges and universities to support homeless students by providing free or reduced-price meals if the institution offers a culinary program; developing a capital plan to renovate an existing campus facility to include laundry facilities, storage units, showers, and lockers; and engaging with local housing authorities to provide rental assistance programs. We encourage all stakeholders to lobby for additional local, state, and federal policies to alleviate disabled students' basic needs insecurity.

Conclusion

The results of this study suggest that college students with chronic illnesses, physical disabilities, psychological disorders, and multiple disabilities had significantly greater odds of experiencing housing insecurity compared to other college students. We found that disabled students experienced concerning high rates of housing insecurity, including homelessness. We encourage administrators, practitioners, faculty, and students to work to address housing insecurity among disabled college students by collecting data on their own campuses, creating resource centers to support students, changing policies and practices on their campuses, and advocating for legislation to support college students' basic needs.

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