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Basic Needs Crisis in Higher Education: Results of a Statewide Study Including Students, Faculty, and Staff

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Abstract

Since 2009, numerous studies have been published reporting the prevalence of basic needs insecurities (BNI), particularly food and housing, among college students. Few, however, have been statewide or included students in the southwest region of the United States and almost none have included faculty and staff. This cross-sectional study examining BNI among students, faculty, and staff at public institutions of higher education in the state of New Mexico, all of which are federally designated minority serving institutions, fills these gaps. We administered the survey in March–April 2023 and measured past-year food insecurity (USDA 18-item household module), nutrition insecurity (one-item screener), housing insecurity, homelessness, anxiety (GAD-2), depression (PHQ-2), and other basic needs. Prevalence of any BNI was calculated among students and faculty/staff by institution type (two-year, four-year, tribal colleges). Of the 13,662 survey participants, 80.7% of students and 61.6% of faculty/staff reported at least one BNI. Tribal college participants had higher odds of many BNI compared to four-year colleges; differences between two-year and four-year colleges were also found ($p < .05$). Not only are students affected by BNI, but those who work in colleges and universities also experience insecurity. Interventions in the higher education setting must include all ranks.

Keywords: higher education, basic needs

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The Universal Declaration of Human Rights (UDHR) enshrined food and shelter as fundamental human rights when it was published in 1948 (UDHR, Art. 25). Before that, in 1943, Abraham Maslow published his theory of motivation, which stated that physiological needs had to be met in order for one to be motivated to reach higher goals. In his original paper, he referred to physiological needs as "basic needs," which include food and shelter (Maslow, 1943). Today, "basic needs insecurity" (BNI) is the widely used phrase by scholars studying food and housing insecurity among college students. Starting with one of the first reports of food insecurity from the University of Hawaii, Manoa (Chaparro et al., 2009), a sizable body of research has accumulated revealing a significant burden of BNI in college and university students. These studies have found food insecurity, housing insecurity, and homelessness among undergraduate and graduate students across two- and four-year institutions (Baker-Smith et al., 2020).

Despite established associations between food and/or housing insecurity and outcomes including physical and mental health and academic achievement (Bruening et al., 2016; El Zein et al., 2019; Mechler et al., 2024), there is a lack of research examining other needs, such as social support, health insurance and medical care, and access to transportation, in assessments of BNI. The present study addresses these gaps by assessing not only food and nutrition security, housing insecurity, and homelessness, but also social support, access to transportation and health services, insurance status, and use of the Supplemental Nutrition Assistance Program (SNAP).

More significantly, our study included full-time, part-time, and adjunct faculty and staff across three types of institutions: four-year universities, two-year/community colleges, and tribal colleges. Therefore, our research question was: What is the prevalence of BNI and associated experiences among students, faculty, and staff across all public institutions of higher education in the state of New Mexico? Understanding BNI in higher education is particularly important in our state with its high levels of poverty. Since all 27 participating colleges and universities are federally designated minority serving institutions, the spotlight shined on minoritized people in all the cohorts has relevance for such populations throughout the United States.

Literature Review

Numerous basic needs studies have been conducted at single institutions since the previously mentioned one in Hawaii (Coakley et al., 2022; Davidson & Morrell, 2020; Gaines et al., 2014; Silva et al., 2015; Smith & Knechtel 2020). However, between 2015 and 2021 the Hope Center for College, Community, and Justice under the leadership of Sara Goldrick-Rab published seven reports under the name #RealCollege Survey Reports which surveyed hundreds of institutions (https://saragoldrickrab.com/resourcelibrary/). The University of California has also done multi-institutional studies (see for example, UC Global Food Initiative, 2017). The findings from studies have revealed a range of BNI. For example, in 2017, the University of California reported 44% of undergraduates were food insecure and 5% were homeless. The 2021 Hope Center multistate study reported the prevalence of food insecurity was 34% for undergraduates and graduates combined and 48% had housing insecurity. In 2020, the results of the first nationwide educational survey including basic needs in the United States was released (2019–2020 National Postsecondary Student Aid Study). Two thousand institutions participated, revealing undergraduate students had 23% food insecurity and 8% homelessness, while graduate students had 12% food insecurity and 5% homelessness (McKibben et al., 2023).

The most common response to BNI in higher education is campus food pantries (Hagedorn-Hatfield et al., 2022); however, there has been little published research on the effectiveness of food pantries or any other intervention (Landry et al., 2024). One study suggests enrollment in SNAP had a positive effect on retention at one California university (Balzer Carr & London, 2020). Another found that providing meal vouchers to on-campus dining may increase academic success (Broton et al., 2023). Considering the prominence of these programs, the lack of data supporting their efficaciousness is unfortunate.

Further, there is little published research on BNI among faculty and staff at academic institutions. An extant report on BNI among faculty focused on community colleges revealed 17% had food insecurity, 33% had housing insecurity, and 8% experienced homelessness (Coca et al., 2020). Notably, faculty of color and LGBTQ faculty were more likely to report some form of BNI, similar to patterns reported among students sharing these demographics (Cargas et al., 2021; Coca et al., 2020; Goldrick-Rab et al., 2019; Morris et al., 2016). In 2016, a study of 2,890 University of California nonteaching staff found a prevalence of 70% food insecurity (Dreier et al., 2016). This report did not make recommendations to address staff insecurities, and the above-mentioned report on faculty only provided links to such things as suggested legislation for improving pay. Neither had recommendations for immediate on-campus interventions.

Methods

Design

Data were collected cross-sectionally through an online Qualtrics survey and paper surveys (English or Spanish version) over a four-week period in March–April 2023. The research team reached out to all 29 institutions of higher education in the state of New Mexico to participate, and 27 took part in the study.

Each of the 27 participating institutions utilized student, faculty, and staff listservs and other institution-wide recruitment routes to share information about the study, including a link to the survey in Qualtrics and information on how to obtain and return paper surveys. Paper surveys included instructions for returning to the research team, a printed consent form, and prepaid, preaddressed mailing materials. The online and paper survey, instructions, and consent form were translated to Spanish by a certified translator. Institutional officials also posted flyers on social media and physical flyers across campuses. All 27 institutions distributed the survey in March 2023, and reminders to continue advertising the study were sent by the research team to institution staff until the survey closed in April 2023.

Approval was received for this study from the University of New Mexico Institutional Review Board. As a minimal risk study collecting no participant-identifying information, a waiver of consent documentation was obtained. Participants provided consent by starting the survey in Qualtrics or by returning the survey via mail.

Sample

The first three survey questions assessed participants' eligibility. Eligibility criteria were at least 16 years of age, affiliated with one of the 27 participating institutions, and currently enrolled or employed at that institution. After completing the eligibility screener, ineligible participants were redirected and did not proceed with the survey; eligible participants continued on to the full survey.

Measures

The survey instrument was designed by the research team and included validated BNI measures when available. The final survey included 90 questions with an estimated completion time of approximately 20 min and was available in English and Spanish. All questions and potential quantitative responses on the Spanish survey were coded the same as the English survey.

The survey asked participants' current primary role at their institution and if they had children under 18 years of age for whom they were financially responsible. Food security status in the past 12 months was assessed using the U.S. Department of Agriculture (USDA) 18-item household food security survey module (FSSM). Following USDA guidance, all participants answered the first three FSSM questions, and, if an

affirmative response was provided to any of the first three questions, seven additional questions. These first 10 questions constitute the adult FSSM. Participants with children also answered eight additional questions assessing food security status in children specifically. If no affirmative responses were provided to the first three questions in the child-specific FSSM, participants did not answer the remaining five questions. Responses to all FSSM questions participants were eligible to answer were required.

The number of affirmative responses to FSSM items was summed to calculate a food security score (range of 0–10 for participants with no children, range of 0–18 for participants with children). Participants who did not answer affirmatively to any of the first three questions of the adult and/or child FSSM, and thus did not complete the rest of the FSSM, received a score of 0. Food security was categorized as a binary variable [food secure (score of 0–2) or food insecure (score of 3–10 for participants with no children, score of 3–18 for participants with children)]. Food security severity was also calculated and categorized as high food security (score of 0), marginal food security (score of 1–2), low food security (score of 3–5 for participants with no children, score of 3–7 for participants with children), and very low food security (score of 6–10 for participants with no children, score of 8–18 for participants with children) per USDA guidance.

Housing insecurity in the past 12 months was measured by assessing nine housing-related indicators as recommended by the Hope Center, a leader in basic needs security in college students (Goldrick-Rab et al., 2018). Responses to these nine indicators were required. Indicators included a rent or mortgage increase that was difficult to pay; receiving a summons to appear in housing court or being evicted; not paying the full amount of a gas, oil, or electricity bill; and moving in with other people, even for a little while, because of financial problems, among others. One or more affirmative responses to the nine housing indicators indicated housing insecurity. Homelessness was assessed by asking participants, "In the past 12 months, have you ever been homeless?" with response options of "No" or "Yes."

Other basic needs questions included in the survey were optional for participants. Nutrition security was measured using a validated one-item question developed by the Center for Nutrition & Health Impact (formerly the Gretchen Swanson Center for Nutrition): "In the past 12 months, I worried that the food I was able to eat would hurt my health and well-being" where "sometimes," "often," or "always" indicated nutrition insecurity (Calloway et al., 2022). Nutrition security is a distinct but complementary need compared to food security and is defined by the USDA as "consistent access to the safe, healthy, affordable foods essential to optimal health and well-being" (U.S. Department of Agriculture, n.d.). Participants self-reported social support ["Do you have social supports in your life (people who care about you and you can count on)?" where "no" indicated insecurity], transportation security ("In the last 12 months, did you have reliable transportation to and from campus?" where "sometimes" or "never" indicated insecurity), ability to afford health services ("In the last 12 months, has a lack of money prevented you from getting any health services that you needed?" where

"often" and "sometimes" indicated insecurity), and health insurance status ("Do you have health insurance" where "no" indicated insecurity).

Anxiety and depression in the past two weeks were also assessed using the two-item, Generalized Anxiety Disorder (GAD-2, score of ≥ 3 indicates positive screen for anxiety) and the two-item Patient Health Questionnaire (PHQ-2, score of ≥ 3 indicates positive screen for depression), respectively (Kroenke et al., 2003; Plummer et al., 2016). At the end of the survey, participants also self-reported demographic information including race and ethnicity, gender, and sexuality. These questions were optional and missing data are reported accordingly.

Statistical Analysis

Screening questions were first utilized to remove ineligible respondents. Next, participants with a Qualtrics-generated reCAPTCHA score < 0.50 were excluded. Qualtrics reCAPTCHA score is generated for each response based on the probability that the respondent is a bot. Duplicate responses were also detected in Microsoft Excel and removed. Additionally, participants who did not complete at least the first three required questions of the USDA adult FSSM were excluded. Finally, free-text responses to five open-ended questions were examined to identify and exclude duplicate and fraudulent responses (e.g., all symbols, numbers, or the same free-text response to all five questions).

After exclusions, participants in the final analytic sample were categorized as students (full-time or part-time undergraduate, graduate, or professional student) or faculty/staff (full-time, part-time or adjunct, including upper-level administrators). Participants who selected both a student and staff or faculty role were categorized as students. The 27 participating institutions were categorized as four-year (n = 7), two-year/community colleges (n = 17), or tribal colleges (n = 3). Given sample size limitations and to protect participant privacy, race and ethnicity was coded as Hispanic or Latino/a, White non-Hispanic or Latino/a, Native American, and other or more than one race and ethnicity. Gender was coded as man, woman, or other gender (genderqueer, nonbinary, or "I prefer to identify as" with an option to write-in gender identity). Sexuality was coded as heterosexual/straight or other sexuality (gay or lesbian, bisexual, or "I prefer to identify as" with an option to write-in gender identity). The Appendix shows survey questions, response options, and coding for each variable.

Each basic need (food security, nutrition security, housing security, homelessness, social support, transportation reliability, ability to afford health services, and health insurance status), was coded as secure (0) or insecure (1). A BNI score was calculated by summing the number of insecurities across the eight primary needs assessed. The score ranged from 0–8 where 0 indicated no BNI and 8 indicated the participant experienced all eight insecurities.

Descriptive statistics (frequency, percentage) were calculated for each basic need by participant type (student or faculty/staff) and by institution type (four-year, two-year,

or tribal college). BNI score (range = 0–8) was not normally distributed; thus, median and interquartile range (IQR) were calculated. Wald 95% confidence limits were also calculated for the proportion of students and faculty/staff experiencing each insecurity by institution type using Statistical Analysis Software (SAS) Version 9.4.

Logistic regression was used to calculate odds ratios (OR) and 95% confidence intervals (CI) for each insecurity among students at two-year and tribal colleges compared to students at four-year colleges, and among faculty/staff at two-year and tribal colleges compared to faculty/staff at four-year colleges. Multinomial logistic regression was utilized to calculate OR and 95% CI of very low food security compared to high food security in students and faculty/staff at two-year and tribal colleges compared to four-year colleges. Additionally, multivariable logistic regression was used to examine adjusted odds ratios (aOR) and 95% CI for associations between institution type and insecurities, controlling for gender, sexual orientation, race and ethnicity, and parental status. A p-value of $< .05$ was used to indicate statistical significance.

Results

A total of 18,359 responses were received via Qualtrics and 10 paper surveys were returned to the research team for a total of 18,369 participants. Nine-hundred fifty-five did not complete all screening questions and an additional 668 were ineligible based on screening question responses. Other exclusions included reCAPTCHA score < 0.50 (n = 780), duplicate responses (n = 252), and incomplete USDA adult FSSM (n = 1,255). Analysis of free-text responses to open-ended questions identified 772 additional participants for exclusion. Twenty-five were excluded for missing participant "type" or indicating they were retired. In total, 4,707 responses were removed (25.6%) and the final analytic sample included 13,662 unique participants (74.4%) resulting in final sample sizes of 9,995 students and 3,667 faculty/staff. This was an estimated response rate of 13.7% overall (11.6% for students and 20.5% for faculty and staff).

Most respondents were from two-year colleges (60.2%), were students (73.2%), and were 16–24 years of age (38.9%) or 25–34 years of age (23.2%). Participant demographics by institution type and current primary institutional role (student or faculty/staff) are included in Table 1.

Table 1. Demographic Characteristics [n (%)] of Survey Respondents (N = 13,662)

Demographic Variables	Four-Year Colleges (*n* = 4,936)		Tribal Colleges (*n* = 503)		Two-year colleges (*n* = 8,223)	
	Students (*n* = 3,503)	Faculty/Staff (*n* = 1,433)	Students (*n* = 346)	Faculty/Staff (*n* = 157)	Students (*n* = 6,146)	Faculty/Staff (*n* = 2,077)
Participant Type						
Faculty	—	566 (39.5)	—	73 (46.5)	—	864 (41.6)
Grad/professional student	747 (21.3)	—	37 (10.7)	—	—	—
Staff or administration	—	867 (60.5)	—	84 (53.5)	—	1,213 (58.4)
Undergraduate student	2,756 (78.7)	—	309 (89.3)	—	6,146 (100.0)	—
Age Category						
16–24 years of age	2,230 (63.7)	56 (3.9)	119 (34.4)	< 10	2,833 (46.1)	72 (3.5)
25–34 years of age	707 (20.2)	298 (20.8)	95 (27.5)	47 (29.9)	1,624 (26.4)	393 (18.9)
35–44 years of age	356 (10.2)	419 (29.2)	81 (23.4)	39 (24.8)	961 (15.6)	500 (24.1)
45 years of age and older	210 (6.0)	660 (46.1)	51 (14.7)	64 (40.8)	728 (11.9)	1,112 (53.5)
Race and Ethnicity[a]						
Hispanic or Latino/a	957 (33.2)	289 (23.3)	< 10	< 10	1,648 (33.1)	439 (24.9)
Native American	129 (4.5)	29 (2.3)	197 (67.0)	69 (51.9)	657 (13.2)	97 (5.5)
Other or multiple	870 (30.2)	230 (18.6)	48 (16.3)	28 (21.1)	1,167 (23.4)	303 (17.2)
White, non-Hispanic/ Latino/a	930 (32.2)	691 (55.8)	40 (13.6)	31 (23.3)	1,508 (30.3)	921 (52.3)
Gender[b]						
Man	775 (26.6)	366 (28.6)	99 (33.6)	51 (38.1)	1,438 (28.3)	564 (30.9)
Other gender	190 (6.5)	39 (3.1)	13 (4.4)	< 10	253 (5.0)	53 (2.9)
Woman	1,954 (66.9)	873 (68.3)	183 (62.0)	74 (55.2)	3,384 (66.7)	1,207 (66.2)
Sexual Orientation[c]						
Other sexuality	790 (28.2)	220 (17.8)	47 (17.0)	22 (17.9)	1,024 (21.2)	235 (13.3)
Straight	2,013 (71.8)	1,016 (82.2)	229 (83.0)	101 (82.1)	3,807 (78.8)	1,527 (86.7)
Children						
No	2,940 (83.9)	923 (64.4)	191 (55.2)	85 (54.1)	4,179 (68.0)	1,245 (59.9)
Yes	563 (16.1)	510 (35.6)	155 (44.8)	72 (45.9)	1,967 (32.0)	832 (40.1)
Food Assistance Program Use[d]						
No	2,234 (66.0)	1,110 (79.5)	88 (26.6)	86 (55.8)	3,053 (51.4)	1,440 (71.6)
Yes	1,150 (34.0)	286 (20.5)	243 (73.4)	68 (44.2)	2,888 (48.6)	571 (28.4)

(*continued*)

Table 1. Demographic Characteristics [n (%)] of Survey Respondents (N = 13,662) (*continued*)

Demographic Variables	Four-Year Colleges (*n* = 4,936)		Tribal Colleges (*n* = 503)		Two-year colleges (*n* = 8,223)	
Anxiety Symptoms [e]						
No (GAD-2 score < 3)	1,580 (52.3)	951 (72.4)	196 (63.8)	94 (67.1)	3,068 (58.4)	1,399 (74.2)
Yes (GAD-2 score ≥ 3)	1,444 (47.8)	362 (27.6)	111 (36.2)	46 (32.9)	2,190 (41.7)	487 (25.8)
Depression Symptoms [f]						
No (PHQ-2 score < 3)	1,952 (64.5)	1,060 (80.7)	205 (66.8)	105 (75.0)	3,470 (66.0)	1,519 (80.5)
Yes (PHQ-2 score ≥ 3)	1,073 (35.5)	253 (19.3)	102 (33.2)	35 (25.0)	1,788 (34.0)	367 (19.5)

Note. GAD = Generalized Anxiety Disorder; PHQ = Patient Health Questionnaire. < 10 indicates there were less than 10 participants for this category.

[a] Race and ethnicity missing for 1,835 students and 535 staff. [b] Gender missing for 1,706 students and 431 staff. [c] Sexual orientation missing for 2,085 students and 546 staff. [d] Food assistance program use missing for 339 students and 106 staff. [e] GAD-2 score missing for 1,406 students and 328 staff. [f] PHQ-2 score missing for 1,405 students and 328 staff.

Students

Table 2 shows the prevalence of BNI among students and faculty/staff by institution type. The prevalence of all BNI differed significantly ($p < .05$) among students at four-year, tribal, and two-year institutions. At least one BNI was reported by 80.7% of students among all institutions and the median number of BNI reported was 2.0 (IQR = 1.0, 4.0). Housing insecurity was the most commonly experienced BNI among students at four-year (56.5%, 95% CI [54.8, 58.2]) and two-year (64.8%, 95% CI [63.6, 66.1]) institutions while food insecurity was the most commonly experienced BNI among students at tribal institutions (84.1%, 95% CI = [80.2, 88.0]). Across institution types, more than half of students reported food insecurity (56.4% at four-year, 84.1% at tribal, 57.5% at two-year colleges), housing insecurity (56.5% at four-year, 80.2% at tribal, 64.8% at two-year colleges), and inability to afford health services (51.3% at four-year, 62.9% at tribal, 51.5% at two-year colleges). Self-reported homelessness and lack of social support were the least frequently reported BNI among students across institution types. Worth noting is a substantial gap between the percentage of students who were food insecure and the percentage of students reporting receiving SNAP, often referred to as the SNAP gap. As shown in Table 2, 73.5% of food insecure students at four-year institutions, 50.2% of food insecure students at tribal institutions, and 61.3% of food insecure students at two-year institutions did not receive SNAP.

Table 2. Prevalence of Basic Needs Insecurities (% [95% CI]) Among Students and Faculty or Staff at Four-Year, Tribal, and Two-Year Colleges in the State of New Mexico

	Students (*n* = 9,995)				Faculty or Staff (*n* = 3,667)			
	Four-year (*n* = 3,503)	Tribal (*n* = 346)	Two-year (*n* = 6,146)	*p*	Four-year (*n* = 1,433)	Tribal (*n* = 157)	Two-year (*n* = 2,077)	*p*
Core BNI								
Food insecurity	56.4 [54.7, 58.0]	84.1 [80.2, 88.0]	57.5 [56.3, 58.8]	<.001	28.3 [26.0, 30.7]	62.4 [54.8, 70.0]	37.1 [35.0, 39.2]	<.001
Nutrition insecurity	43.8 [42.0, 45.6]	46.4 [40.8, 52.0]	38.9 [37.6, 40.2]	<.001	27.2 [24.8, 29.6]	42.1 [34.0, 50.3]	28.3 [26.3, 30.3]	<.001
Housing insecurity	56.5 [54.8, 58.2]	80.2 [75.8, 84.5]	64.8 [63.6, 66.1]	<.001	40.4 [37.8, 43.0]	67.1 [59.6, 74.7]	47.0 [44.8, 49.2]	<.001
Self-reported homelessness	4.0 [3.3, 4.6]	21.5 [17.0, 26.1]	7.8 [7.1, 8.5]	<.001	2.5 [1.7, 3.4]	10.2 [5.3, 15.1]	4.3 [3.4, 5.2]	<.001
No social support	7.8 [6.9, 8.8]	12.8 [9.0, 16.5]	9.3 [8.5, 10.1]	.004	5.4 [4.1, 6.6]	7.9 [3.4, 12.3]	5.7 [4.6, 6.7]	.47
Unreliable transportation	30.1 [28.4, 31.8]	53.7 [47.9, 59.5]	30.0 [28.7, 31.3]	<.001	13.5 [11.6, 15.4]	29.7 [22.1, 37.3]	16.2 [14.5, 17.9]	<.001
Can't afford health services	51.3 [49.4, 53.2]	62.9 [57.1, 68.7]	51.5 [50.1, 53.0]	.001	38.5 [35.7, 41.2]	55.9 [47.0, 64.9]	40.4 [38.1, 42.8]	.004
No health insurance	13.0 [11.8, 14.2]	26.0 [21.0, 30.9]	16.1 [15.1, 17.1]	<.001	4.7 [3.6, 5.9]	7.9 [3.4, 12.4]	6.7 [5.6, 7.8]	.04
At least one BNI [a]	80.6 [79.3, 81.9]	94.8 [92.4, 97.1]	80.0 [79.0, 81.0]	<.001	57.2 [54.7, 59.8]	86.0 [80.6, 91.4]	62.7 [60.7, 64.8]	<.001
# of BNI [a], Mdn [IQR]	2.0 [1.0, 4.0]	4.0 [2.0, 5.0]	2.0 [1.0, 4.0]	<.001	1.0 [0.0, 3.0]	2.0 [1.0, 4.0]	1.0 [0.0, 3.0]	<.001
Other BNI								
Very low food security	36.9 [35.3, 38.5]	65.9 [60.9, 70.9]	38.2 [37.0, 39.4]	<.001	16.5 [14.6, 18.5]	43.3 [35.6, 51.1]	23.4 [21.6, 25.3]	<.001
SNAP gap [b]	73.5 [71.5, 75.5]	50.2 [44.3, 56.1]	61.3 [59.7, 63.0]	<.001	83.2 [79.5, 86.9]	80.4 [72.5, 88.3]	80.5 [77.7, 83.4]	.54

Note. CI = confidence interval; BNI = basic needs insecurity; SNAP = Supplemental Nutrition Assistance Program.

[a] BNI included the 8 core needs: food insecurity, nutrition insecurity, housing insecurity, self-reported homelessness, no social support, unreliable transportation, inability to afford health services, and no health insurance. [b] Respondents with food insecurity that did not report SNAP use.

Table 3 shows, in general, students at tribal colleges had higher odds of BNI compared to their counterparts at four-year institutions in unadjusted and adjusted analyses. Students attending tribal colleges had significantly higher odds of seven out of the eight core BNI (food insecurity, housing insecurity, homelessness, no social support, unreliable transportation, inability to afford health services, and no health insurance). Of particular concern, students attending tribal colleges had 6.00 (95% CI [4.06,

8.87], $p < .01$) times the odds of homelessness, 3.10 (95% CI [2.18, 4.43], $p < .01$) times the odds of food insecurity, and 2.57 (95% CI [1.85, 3.59], $p < .01$) times the odds of housing insecurity compared to students at four-year institutions, controlling for gender, sexual orientation, race and ethnicity, and parental status. Tribal students also had 4.64 (95% CI [2.89, 7.43], $p < .01$) times the odds of very low food security compared to four-year students but had lower odds of being food insecure and not receiving SNAP [SNAP gap (aOR = 0.46, 95% CI [0.34, 0.63], $p < .01$)] compared to four-year students.

Two-year college students had significantly higher odds of homelessness (aOR = 1.93, 95% CI [1.54, 2.43], $p < .01$), housing insecurity (aOR = 1.31, 95% CI [1.18, 1.45], $p < .01$), no health insurance (aOR = 1.23, 95% CI [1.07, 1.42], $p < .01$), and no social support (aOR = 1.22, 95% CI [1.02, 1.46], $p < .05$) and lower odds of nutrition insecurity (aOR = 0.86, 95% CI [0.78, 0.95], $p < .01$) and the SNAP gap (aOR = 0.65, 95% CI [0.56, 0.75], $p < .01$) compared to four-year college students. Prevalence of food insecurity, unreliable transportation, and inability to afford health services did not differ significantly between two-year and four-year students.

Faculty/Staff

At least one BNI was reported by 61.6% of all faculty/staff and the median number of BNI reported was 1.0 (IQR = 0.0, 3.0). As shown in Table 2, housing insecurity was the most commonly experienced BNI among faculty/staff at four-year (40.4%, 95% CI [37.8, 43.0]), tribal (67.1%, 95% CI [59.6, 74.7]), and two-year (47.0%, 95% CI [44.8, 49.2]) institutions. More than one third of faculty/staff also reported inability to afford health services across all institution types. Self-reported homelessness and lack of social support were the least frequently reported BNI among faculty/staff across institution types. Faculty/staff across institution types had an even higher SNAP gap than students; 80% or more of food insecure faculty/staff across institution types did not receive SNAP. Table 2 illustrates that, except for lack of social support, the prevalence of BNI differed significantly among faculty/staff at four-year, tribal, and two-year institutions. In general, the prevalence of insecurities was higher among tribal faculty/staff compared to those at four-year and two-year colleges.

Table 3 shows, adjusting for gender, sexual orientation, race and ethnicity, and parental status, tribal college faculty/staff had 3.14 (95% CI [1.40, 7.08], $p < .01$) times the odds of homelessness, 2.07 (95% CI [1.33, 3.22], $p < .01$) times the odds of food insecurity, and 1.68 (95% CI [1.08, 2.60], $p < .01$) times the odds of housing insecurity compared to faculty/staff at four-year institutions. Two-year college faculty/staff had significantly higher odds of homelessness (aOR = 1.96, 95% CI [1.21, 3.19], $p < .01$), food insecurity (aOR = 1.40, 95% CI [1.18, 1.66], $p < .01$), housing insecurity (aOR = 1.31, 95% CI [1.12, 1.53], $p < .01$), and unreliable transportation (aOR = 1.31, 95% CI [1.04, 1.64], $p < .05$) compared to faculty/staff at four-year institutions. Odds of having very low food security were also significantly higher among tribal and two-year faculty/staff compared to four-year faculty/staff. Odds of the SNAP gap were not significantly different among faculty/staff across institution types.

Table 3. Unadjusted and Adjusted Odds of Basic Needs Insecurities Among Students and Faculty/Staff at Tribal Colleges and Two-Year Colleges Compared to Four-Year Colleges in New Mexico

	Students (n = 9,995)				Faculty or Staff (n = 3,667)			
	Tribal colleges [a]		Two-year colleges [a]		Tribal colleges [b]		Two-year colleges [b]	
	OR [95% CI]	aOR [95% CI] [c]	OR [95% CI]	aOR [95% CI] [c]	OR [95% CI]	aOR [95% CI] [c]	OR [95% CI]	aOR [95% CI] [c]
Core BNI								
Food insecurity	4.10 [3.05, 5.51]**	3.10 [2.18, 4.43]**	1.05 [0.97, 1.14]	0.99 [0.90, 1.09]	4.20 [2.98, 5.92]**	2.07 [1.33, 3.22]**	1.49 [1.29, 1.72]**	1.40 [1.18, 1.66]**
Nutrition insecurity	1.11 [0.88, 1.41]	1.17 [0.89, 1.54]	0.82 [0.75, 0.90]**	0.86 [0.78, 0.95]**	1.95 [1.37, 2.79]**	1.17 [0.75, 1.82]	1.06 [0.90, 1.24]	1.09 [0.92, 1.29]
Housing insecurity	3.12 [2.35, 4.14]**	2.57 [1.85, 3.59]**	1.42 [1.30, 1.55]**	1.31 [1.18, 1.45]**	3.01 [2.11, 4.31]**	1.68 [1.08, 2.60]*	1.31 [1.14, 1.51]**	1.31 [1.12, 1.53]**
Self-reported homelessness	6.64 [4.81, 9.17]**	6.00 [4.06, 8.87]**	2.04 [1.66, 2.50]**	1.93 [1.54, 2.43]**	4.39 [2.33, 8.26]**	3.14 [1.40, 7.08]**	1.72 [1.15, 2.58]**	1.96 [1.21, 3.19]**
No social support	1.72 [1.20, 2.48]**	1.98 [1.31, 2.99]**	1.21 [1.03, 1.42]*	1.22 [1.02, 1.46]*	1.51 [0.78, 2.92]	0.89 [0.35, 2.23]	1.07 [0.78, 1.45]	1.13 [0.80, 1.59]
Unreliable transportation	2.69 [2.10, 3.44]**	2.88 [2.16, 3.84]**	1.00 [0.90, 1.11]	1.05 [0.93, 1.17]	2.71 [1.81, 4.04]**	1.41 [0.83, 2.38]	1.24 [1.01, 1.52]*	1.31 [1.04, 1.64]*
Can't afford health services	1.61 [1.25, 2.09]**	1.83 [1.36, 2.47]**	1.01 [0.92, 1.11]	1.02 [0.92, 1.13]	2.03 [1.39, 2.97]**	1.38 [0.88, 2.18]	1.09 [0.93, 1.26]	1.12 [0.95, 1.32]
No health insurance	2.35 [1.78, 3.10]**	1.69 [1.22, 2.35]**	1.28 [1.13, 1.46]**	1.23 [1.07, 1.42]**	1.73 [0.89, 3.36]	0.41 [0.17, 0.95]*	1.45 [1.06, 1.98]*	1.26 [0.90, 1.78]
Other BNI								
Very low food security [d]	6.38 [4.30, 9.47]**	4.64 [2.89, 7.43]**	1.05 [0.95, 1.17]	1.02 [0.90, 1.15]	5.49 [3.67, 8.22]**	2.39 [1.41, 4.05]**	1.64 [1.37, 1.97]**	1.58 [1.28, 1.94]**
SNAP gap [e]	0.36 [0.28, 0.47]**	0.46 [0.34, 0.63]**	0.57 [0.51, 0.65]**	0.65 [0.56, 0.75]**	0.83 [0.47, 1.47]	0.92 [0.44, 1.94]	0.84 [0.61, 1.16]	1.00 [0.70, 1.44]

Note. CI = confidence interval; OR = odds ratio; aOR = adjusted odds ratio; BNI = basic needs insecurity; SNAP = Supplemental Nutrition Assistance Program.

[a] Reference group = students at four-year colleges. [b] Reference group = faculty or staff at four-year colleges. [c] Covariates in multivariable logistic regression models include gender, sexual orientation, race and ethnicity, and parental status. [d] Reference group = high food security. [e] Respondents with food insecurity that did not report SNAP use.

*p < .05. **p < .01.

In all cohorts, the prevalence of very low food security was greater than low food security (data not shown). Among all students, 38.7% had very low food security while 19.4% had low food security, 13.0% had marginal food security, and 28.9% had high food security. Among all faculty/staff, 21.6% had very low food security while 13.1% had low food security, 11.2% had marginal food security, and 54.1% had high food security. The prevalence of very low food security was higher among students (38.7%) than faculty/staff (21.6%) and varied significantly across institution types as shown in Table 2.

Discussion

To the authors' knowledge, ours is the first statewide study of BNI among students, faculty, and staff in higher education in the nation. As a state of primarily Hispanic-serving colleges and universities and multiple indigenous serving institutions, our results uncover several novel findings. First, faculty and staff experience substantial struggles with needs insecurity; food, housing, and other BNI are not limited to students in higher education. Second, students, faculty, and staff at tribal colleges in New Mexico experience profound BNI, with burdens greatly exceeding their four-year college and university counterparts. Third, while the literature has largely focused on food insecurity, the prevalence of housing insecurity was higher than the prevalence of food insecurity for students and faculty/staff at most institution types. Thus, housing insecurity is emerging as perhaps the most common insecurity in New Mexico higher education.

Importantly, regardless of the location of our institutions—rural, on tribal lands, or urban—people struggle to have adequate shelter, even when employed. This is consistent with the fact that there is a housing crisis across the United States and globally (Hohmann, 2013; Madden & Marcuse, 2016). Therefore, it is not surprising that housing insecurity and homelessness were experienced among all the cohorts, again revealing that housing is a problem for faculty and staff just as it is for students. In our sample, 132 (3.8%) faculty and staff were homeless in the past 12 months. Future research should explore structural factors that may be associated with the struggle for housing, such as the cost of existing housing or the lack of housing units on or near campuses.

Other patterns worth highlighting include the high degree of very low food security as opposed to low food security. Very low food security affects more students and faculty/staff than the less severe category of low food security. The USDA originally defined low food insecurity as food insecurity without hunger and very low security as food insecurity with hunger (Chilton, 2024). Relying on the original USDA nomenclature reveals a very stark experience for members of our community. Many experience hunger too often. They are skipping meals and some may be experiencing weight loss leading to adverse physical and mental health outcomes. Future research must address best practices for screening and intervening.

As previously stated, the most common response to BNI across the United States is campus food pantries. However, not all campuses have them, and some do not allow faculty and staff to access them due to limited capacity of the pantries. Though they have become a necessary part of the landscape, other campus initiatives should be supported, such as meal vouchers.

We also found that a significant number of food insecure students and faculty/staff are not receiving SNAP benefits, representing a pressing need for education, outreach, and streamlining the SNAP enrollment process. Next, our results suggest unreliable transportation affects faculty and staff, just as it does for students. Transportation insecurity is a particularly important issue in a state like New Mexico which is predominantly rural. Finally, over 50% of every student cohort and almost 40% or above for the faculty/staff cohorts in our sample could not afford health services even though most had health insurance. Offering low-cost health services on campuses might be more beneficial than outreach to ensure more people have health insurance.

Other recommendations include increasing emergency aid funding and extending it to faculty and staff. Allowing our unhoused community members to park safely on campus at night is another stop gap measure. Creating more affordable housing is an intervention that all groups need. Most importantly, responding to food and housing insecurity should not be considered an auxiliary function of campuses. Basic needs centers should be established and funding them should be prioritized.

Future research is also needed to evaluate the effectiveness of novel BNI-focused interventions. In addition, regular analysis of policy at the campus, state, and federal levels along with stronger advocacy for policy change is needed. Reducing needs insecurity will require comprehensive approaches across multiple levels of influence (e.g., culturally sensitive support programs, increasing financial aid opportunities, advocating for policy changes to address systemic barriers). For example, three billion dollars of SNAP funds is unclaimed by eligible college students (Benefits Data Trust, 2023); therefore, changes in policy to allow more eligibility and easier access to SNAP are warranted (Hagedorn-Hatfield et al., 2022). Finally, because students and colleagues at tribal institutions in New Mexico had much higher BNI compared to two-year and four-year institutions, providing and prioritizing resources for Native American students, faculty, and staff is critical to alleviate these inequities.

Limitations

Using an online, cross-sectional survey tool to collect data is a limitation. Though every effort was taken to exclude fraudulent responses including bot detection via a reCAPTCHA score < 0.50, fake responses may still be in the final dataset. We also acknowledge response bias may be present as those that participated may have been more or less likely to have BNI, and differences may have existed between online participants and those who completed the survey on paper (though paper surveys constituted less than 0.1% of responses).

Further, the survey included single-item questions that have not been validated among students, faculty, or staff to assess affordability of health services and health insurance status. We condensed all types of faculty (full-time, part-time, adjunct), staff (full-time, part-time), and administration to one faculty/staff category due to sample size limitations, but we acknowledge differences in BNI likely exist within subcategories. Similarly, due to sample size limitations and privacy concerns, we collapsed some gender, sexual orientation, and race and ethnicity categories. Future studies should consider collecting data among Hispanic Serving Institutions (HSIs) nationally to ensure adequate sample sizes to report outcomes for each gender, sexual orientation, and racial and ethnic group. Finally, we did not have data from all 27 institutions to compare the representativeness of our sample to actual enrollment and employment. Thus, data presented in this study should be interpreted as representing the sample that participated and may not be generalizable nationally.

Conclusion

This article addresses a gap in basic needs literature by reporting on faculty and staff insecurities, expanding the number of insecurities measured, and offering recommendations. That 62% of faculty/staff and 81% of students among 27 minority serving public colleges and universities in New Mexico reported experiencing at least one BNI indicates substantial levels of suffering. As a response, we created the New Mexico Basic Needs Consortium consisting of faculty, staff, and students across the state with a mission to reduce BNI in New Mexico higher education communities. The Consortium goals include analyzing the effectiveness of current responses and finding the resources to expand those that are effective or yet to be implemented.

Our study has revealed a profound problem facing higher education in one state, and the problem may affect higher education in other states. For example, colleges and universities increasingly serve low-income students. States that have a large number of minority faculty and staff likely have large numbers of people afflicted with BNI. And when the faculty and staff whose jobs it is to support students cannot meet their own essential needs by working in academia, it is unlikely that postsecondary student success is being best served by employees with BNI. It is also unlikely that students achieve their loftier goals when worried and poorly fed. Our schools are not modeling systemic justice when the human rights to food and shelter are not being met for the people populating the very institutions built to advance society. We recommend that higher education institutions attend to these basic rights for all ranks to fulfill the mission to be "emblems of equal opportunity" (Daniels, 2021, p. 40), and more, be practitioners of maintaining equitable communities.

The conclusion positions the researchers involved and other student success professionals to move from merely studying the extent of the problem to working on identifying recommendations and operationalizing solutions. Even as states seek funding from numerous sources to begin to address the problem, many of the issues cannot be simply solved without fundamentally changing how we address basic needs work on campuses.

As several authors of this paper have shown previously, there is a gap in the basic needs literature when it comes to challenging colleges and universities to take responsibility for reducing BNI (Cargas & Thomas, 2024). The first step of acknowledging that there is a problem has almost been achieved by the large body of published data, some of which was described in the literature review. Now we need our institutions to accept they must play a role in addressing it.

Assisting that mindset change would be helped by research that includes a critical reflection on the history of universities and social class as well as institutional dependence on contingent faculty and underpaid staff. Higher education was designed for students in the upper quintiles of wealth; the justifications for reliance on contingent faculty are outdated, and our findings provide an opportunity to frame conversations about how to make colleges and universities more equitable for students entering institutions from lower quintiles of wealth as well as rethinking salary structures. This suggests a rethinking of organizational designs and structures that meet the basic needs of everyone. Offering tuition-free college, as the state in which this study was conducted has done, is foundational to basic needs work. However, another next step is to recognize that the true cost of college encompasses basic needs support for all those working in higher education.

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References

Baker-Smith, C., Coca, V., Goldrick-Rab, S., Looker, E., Richardson, B., & Williams, T. (2020). *#RealCollege 2020: Five years of evidence on campus basic needs insecurity*. The Hope Center for College, Community, and Justice. https://tacc.org/sites/default/files/documents/2020-02/2019_realcollege_survey_report.pdf

Balzer Carr, B., & London, R. A. (2020). Healthy, housed, and well-fed: Exploring basic needs support programming in the context of university student success. *AERA Open*, *6*(4), 1–14. https://doi.org/10.1177/2332858420972619

Benefits Data Trust. (2023). *Higher education toolkit 1*. Benefits Data Trust.

Broton, K., Mohebali, M., & Goldrick-Rab, S. (2023). Meal vouchers matter for academic attainment: A community college field experiment. *Educational Researcher*, *52*(3), 155–163. https://doi.org/10.3102/0013189X231153131

Bruening, M., Brennhofer, S., & Todd, M. (2016). Factors related to the high rates of food insecurity among diverse, urban college freshmen. *Journal of the Academy of Nutrition and Dietetics*, *116*(9), 1450–1457. https://doi.org/10.1016/j.jand.2016.04.004

Calloway, E. E., Carpenter, L. R., Gargano, T., Sharp, J. L., & Yaroch, A. L. (2022). Development of new measures to assess household nutrition security, and choice in dietary characteristics. *Appetite*, *179*, 106288. https://doi.org/10.1016/j.appet.2022.106288

Cargas, S., Walsh-Dilley, M., Mechler, H., & Coakley, K. (2021). *Food and housing insecurity at the University of New Mexico: A basic needs research report, 2021*. University of New Mexico Basic Needs Project. https://basicneeds.unm.edu/basic-needs-2021-report.pdf

Cargas, S., & Thomas, T. (2024). Basic needs insecurity in U.S. colleges: Human rights unfulfilled. *International Journal of Human Rights Education*, *8*(1), Article 5. https://repository.usfca.edu/ijhre/vol8/iss1/5/

Chaparro, P., Zaghloul, S., Holck, P., & Dobbs, J. (2009). Food insecurity prevalence among college students at the University of Hawai'i at Mānoa. *Public Health Nutrition*, *12*(11), 2097–2103. https://doi.org/10.1017/S1368980009990735

Chilton, M. (2024). *The painful truth about hunger in America*. MIT Press.

Coakley, K., Cargas, S., Walsh-Dilley, M., & Mechler, H. (2022). Basic needs insecurities are associated with anxiety, depression, and poor health among university students in the state of New Mexico. *Journal of Community Health*, *47*, 454–463. https://doi.org/10.1007/s10900-022-01073-9

Coca, V., Kienzl, G., Goldrick-Rab, S., & Richardson, B. (2020). *Basic needs insecurity in the higher education instructional workforce*. The Hope Center for College, Community, and Justice. https://www.luminafoundation.org/wp-content/uploads/2020/12/basic-needs-insecurity-in-the-higher-education-instructional-workforce.pdf

Daniels, R. (2021). *What universities owe democracy*. Johns Hopkins University Press.

Davidson, A. R., & Morrell, J. S. (2020). Food insecurity prevalence among university students in New Hampshire. *Journal of Hunger & Environmental Nutrition*, *15*(1), 118–127. https://doi.org/10.1080/19320248.2018.1512928

Dreier, P., Bomba, M., & Romero, R. (2016). Food insecurity among University of California employees. *Urban & Environmental Policy Institute*. https://documents.latimes.com/UC-workers-food-insecurity/

El Zein, A., Shelnutt, K., Colby, S., Vilaro, M. J., Zhou, W., Greene, G., Offert, M. D., Riggsbee, K., Morrell, J. S., & Mathews, A. E. (2019). Prevalence and correlates

of food insecurity among U.S. college students: A multi-institutional study. *BMC Public Health*, *19*, Article 660. https://doi.org/10.1186/s12889-019-6943-6

Gaines, A., Robb, C., Knol, L., & Sickler, S. (2014). Examining the role of financial factors, resources and skills in predicting food security status among college students. *International Journal of Consumer Studies*, *38*(4), 374–384. https://doi.org/10.1111/ijcs.12110

Goldrick-Rab, S., Richardson, J., & Kinsley, P. (2018). *Guide to assessing basic needs insecurity in higher education*. The Hope Center for College, Community, and Justice. https://www.bhcc.edu/media/03-documents/voicesofhunger/Basic-Needs-Insecurity-College-Students.pdf

Hagedorn-Hatfield, R. L., Hood, L. B., & Hege, A. (2022). A decade of college student hunger: What we know and where we need to go. *Frontiers in Public Health*, *10*, Article 837724. https://doi.org/10.3389/fpubh.2022.837724

Hohmann, J. (2013). *The right to housing: Law, concepts, possibilities*. Hart Publishing.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2003). The Patient Health Questionnaire-2: Validity of a two-item depression screener. *Medical Care*, *41*(11), 1284–1292. https://doi.org/10.1097/01.MLR.0000093487.78664.3C

Landry, M. J., Heying, E., Qamar, Z., Hagedorn-Hatfield, R. L., Savoie-Roskos, M. R., Cuite, C. L., Zigmont, V. A., OoNorasak, K., & Chen, S. (2024). Advancing college food security: Priority research gaps. *Nutrition Research Reviews*, *37*(1), 108–120. https://doi.org/10.1017/S0954422423000094

Madden, D., & Marcuse, P. (2016). *In defense of housing: The politics of crisis*. Verso.

Maslow, A. (1943). A theory of human motivation. *Psychological Review*, *50*(4), 370–396. https://doi.org/10.1037/h0054346

McKibben, B., Wu, J., & Abelson, S. (2023, August 3). New federal data confirm that college students face significant—and unacceptable—basic needs insecurity. *The Hope Center*. https://hope.temple.edu/npsas

Mechler, H., Coakley, K., Walsh-Dilley, M., & Cargas, S. (2024). Examining the relationship between food insecurity and academic performance: Implications for diversity and equity in higher education. *Journal of College Student Retention: Research, Theory & Practice*, *26*(1), 3–18. https://doi.org/10.1177/15210251211053863

Morris, L. M., Smith, S., Davis, J., & Null, D. B. (2016). The prevalence of food security and insecurity among Illinois university students. *Journal of Nutrition Education and Behavior*, *48*(6), 376–382. https://doi.org/10.1016/j.jneb.2016.03.013

Plummer, F., Manea, L., Trepel, D., & McMillan, D. (2016). Screening for anxiety disorders with the GAD-7 and GAD-2: A systematic review and diagnostic metaanalysis. *General Hospital Psychiatry*, *39*, 24–31. https://doi.org/10.1016/j.genhosppsych.2015.11.005

Silva, M. R., Kleinert, W. L., Sheppard, A. V., Cantrell, K. A., Freeman-Coppadge, D. J., Tsoy, E., Roberts, T., & Pearrow, M. (2015). The relationship between food security, housing stability, and school performance among college students in an urban university. *Journal of College Student Retention: Research, Theory & Practice*, *19*(3), 284–299. https://doi.org/10.1177/1521025115621918

Smith, R., & Knechtel, L. (2020). When student housing is a car: In college and homeless. *Journal of Student Affairs Research and Practice*, *57*(3), 322–337. https://doi.org/10.1080/19496591.2019.1671854

The Hope Center for College, Community, and Justice. (2021). *#RealCollege 2021: Basic needs insecurity during the ongoing pandemic*. https://www.luminafoundation.org/wp-content/uploads/2021/04/real-college-2021.pdf

UC Global Food Initiative. (2017). *Food and housing security at the University of California*. https://www.ucop.edu/global-food-initiative/_files/food-housing-security.pdf

Appendix

Survey Questions, Response Options, and Coding Used to Define Variables Included in This Study

Variable	Survey Question	Survey Response Options	Coding for Analysis
Participant type	Please describe your current primary role at your institution.	Undergraduate student (Part-time, less than 12 credit hours)	Student
		Undergraduate student (Full-time, 12 credit hours or more)	Student
		Graduate or professional student	Faculty or staff
		Lecturer (Part-time)	Faculty or staff
		Lecturer (Full-time)	Faculty or staff
		Faculty (Part-time or Adjunct)	Faculty or staff
		Faculty (Full-time)	Faculty or staff
		Staff (Part-time, Full-time, or temporary)	Faculty or staff
		Upper-level administration	Faculty or staff
		Other (please specify)	Student *or* Faculty or staff
		Not currently attending or employed by college or university	Excluded

Variable	Survey Question	Survey Response Options	Coding for Analysis
Age category	How old are you?	Under 16 years	Excluded
		16–17 years	16–24 years of age
		18–24 years	16–24 years of age
		25–34 years	25–34 years of age
		35–44 years	35–44 years of age
		45–54 years	35–44 years of age
		55–64 years	35–44 years of age
		65 years of age or older	35–44 years of age
Race and ethnicity	With which racial/ethnic group(s) do you identify? Please check all that apply.	Hispanic or Latinx	Hispanic or Latino/a
		American Indian or Native American	Native American
		Asian or Asian American	Other or multiple
		Black or African American	Other or multiple
		Middle Eastern, Mediterranean or North African	Other or multiple
		Native Hawaiian or Pacific Islander	Other or multiple
		White or Caucasian	White, non-Hispanic/Latino/a ***or*** Other or multiple
		Other racial/ethnic group (please specify):	Other or multiple
		I would rather not say	Excluded
Gender	What is your gender identity? (You may select multiple options)	Man	Man
		Woman	Woman
		Genderqueer	Other gender
		Nonbinary	Other gender
		I would rather not say	Excluded
		I prefer to identify as:	Other gender
Sexual Orientation	What best describes your sexual orientation? (You may select multiple options)	Heterosexual/Straight	Straight
		Gay or lesbian	Other Sexuality
		Bisexual	Other Sexuality
		I would rather not say	Excluded
		I prefer to identify as:	Other Sexuality
Children	Do you have children under the age of 18 years for whom you are financially responsible?	Yes	Yes
		No	No

(*continued*)

Variable	Survey Question	Survey Response Options	Coding for Analysis
Food Assistance Program Use	In the past 12 months, did you or your children receive assistance from any of the following food support programs? Please check all that apply.	SNAP/EBT (food stamps)	Yes
		WIC (nutritional assistance for pregnant women and young children)	Yes
		TANF (public cash assistance; formerly called ADC or ADFC)	Yes
		FDPIR (Food Distribution Program on Indian Reservations)	Yes
		National School Lunch Program (NSLP)	Yes
		School Breakfast Program (SBP)	Yes
		Summer Meals Program (SFSP)	Yes
		A food bank or food pantry (including a campus food pantry)	Yes
		Other food program	Yes
		None of these	No