Developing a Scale to Measure Willingness to Seek Food-Related Assistance: Insights from a College Population

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Abstract

Background: College campuses have implemented food pantries and basic needs programs to support students' well-being and promote food security. However, barriers associated with use persist. Understanding help-seeking behaviors and an individual's willingness to seek food-related assistance is essential to inform programming and advance food security research. Thus, the purpose of this study was to develop a scale measuring an individual's willingness to seek help from various people and resources during a period of limited or uncertain access to adequate food.

Methods: Scale development occurred in three phases: expert panel evaluation, cognitive interviews for feedback and refinement, and online survey administration (n=1093), alongside the United States Department of Agriculture Adult Food Security Survey Module. Chi-squared tests analyzed associations between willingness and categorical variables. Pearson's linear regressions were used to explore relationships between food security, socio-demographic characteristics, and willingness scores.

Results: Food insecurity was negatively associated with Willingness Scale scores (ß= -0.018, $p = 0.04$). The very low food security group had the most individuals classified as unwilling ($p < 0.01$). Willingness to seek help from one's circle of support was the most preferred source of assistance across all food security groups. Although social media was the least favorable source of support, those with very low food security were the most willing to seek assistance through social media (22.3%).

Conclusion: The findings from this study emphasize the importance of an individual's circle of support in improving food access and contribute to a broader understanding of the relationship between food security and food access use.

Keywords: college students, food insecurity, scale development, willingness

Developing a Scale to Measure Willingness to Seek Food-Related Assistance: Insights from a College Population

Addressing a lack of food security, which affects 13.5% of households across the United States, offers a vital opportunity to empower communities and implement innovative solutions to improve access to nutritious food (U.S. Department of Agriculture Economic Research Service, 2024). Defined as a household-level economic and social condition characterized by limited or uncertain access to adequate food, a lack of food security is often associated with the immediate consequence of hunger (U.S. Department of Agriculture, 2024) However, a lack of food security is linked to long-term, adverse health implications, including diet-related chronic diseases (Laraia, 2013; Thomas et al., 2021). These long-term health impacts pose a serious concern, particularly for populations with a heightened risk of experiencing a lack of food security (Flores & Amiri, 2019; Leung et al., 2021).

College students are disproportionately affected by a lack of food security, with an estimated prevalence of 41%, which is significantly higher than that of the general population (Nikolaus et al., 2020). Many college students face unique challenges directly linked to their enrollment in higher education, such as the financial strain of tuition and living expenses, limited time due to academic commitments, and the responsibilities associated with newfound independence (Fortin et al., 2021; Zigmont et al., 2021). For some, college is their first experience managing their finances and providing for themselves (Zigmont et al., 2021). Like the general population, a lack of food security among college students is associated with adverse physical and mental health outcomes, including diminished overall physical health, and increased stress, anxiety, and depression (Guzman et al., 2022; Oh et al., 2022; Cedillo et al.,

2023). These struggles are further compounded by their detrimental effect on academic performance, such as lower grade point averages and higher dropout rates (DeBate et al., 2021).

Ongoing efforts to combat a lack of food security across the United States involve the development of innovative interventions and programs (U.S. Department of Agriculture, 2021). However, significant barriers persist, preventing or restricting the use of these food access resources, such as low variability or cultural relevance in provided food options, limited access or transportation, and restrictive program participation eligibility requirements (Leung et al., 2013; Fong et al., 2016; Klobodu et al., 2021). The Supplemental Nutrition Assistance Program (SNAP), known as CalFresh in California, is one example of an underutilized resource within college populations (U.S. Government Accountability Office, 2024). Across the 10-campus University of California system, only 22% of undergraduate students eligible for CalFresh were enrolled in the program in 2019 (Rothstein et al., 2024). Commonly noted challenges with SNAP enrollment include a long and often confusing application process, work eligibility requirements, and stigma surrounding food access programming supported by government funding (Freudenberg et al., 2019; Chrisman et al., 2024; Martinez et al., 2024).

To help bolster food security for students outside of federal or state programs, many colleges have implemented food pantries on campus for students to access. However, while the formation of campus pantries and basic needs centers helps mitigate the challenges often associated with location and eligibility, stigma remains a major barrier, often deterring use (El Zein et al., 2018; Brito-Silva et al., 2022). Further, students experiencing a lack of food security may not perceive themselves as food insecure and thus may refrain from using food access resources (Engel et al., 2022). In a study conducted at the University of California, Davis, results from individual student interviews showed that students across all four food security

classification groups (high food security, marginal food security, low food security, and very low food security) were hesitant to use on-campus food access programs in fear they would be taking resources away from other students with greater need (Sklar et al., 2024).

This theme of not wanting to use resources due to the perception that others could benefit more has been noted within the literature as a deterrent to food access resource use amongst college students (Fortin et al., 2021; Mitchell & Prescott 2022). Re-branding food access programs to highlight details about who is eligible and encouraged to use food access resources may decrease the stigma associated with use while improving food security status (El Zein et al., 2022; Sklar et al., 2024). However, to create effective change, additional insight into an individual's help-seeking behaviors and willingness to seek help from various people and resources during a period of limited or uncertain access to adequate food is essential. Beyond stigma, cultural differences/experiences may influence an individual's willingness to seek help and where they choose to seek it. Previous research has noted differences in help-seeking by race/ethnicity (Taylor et al., 2004; Saykeo et al., 2018), age, and gender (Mackenzie et al., 2006). Similarly, differences in food-related help-seeking or resource use have been demonstrated among individuals who have previously experienced hardships compared to those only experiencing these challenges for the first time, including the way in which they respond or from whom they seek help (Mooney et al., 2023). Understanding these cultural and identity-based differences can provide insight into where or to whom students are willing to turn in times of need and can help shape future programming and food security research.

Previous researchers have explored and created tools to assess an individual's willingness to seek mental health-related resources (Wilson et al., 2005); however, to date of publication, no standardized tool has been used to measure individual willingness to seek

assistance related to food acquisition. Thus, the purpose of this study is to develop a scale that measures individual willingness to seek help from various people and resources during a period of limited or uncertain access to adequate food. The secondary objective is to assess how demographic characteristics and food security status differ based on overall willingness scores, as calculated by the Willingness Scale.

Methods

Willingness Scale Development

The authors thoroughly reviewed relevant literature to ensure the inclusion of well-constructed and contextually appropriate questions to measure food-related, help-seeking behaviors. The scale's initial design was modeled from the General Health Seeking Questionnaire framework (Wilson et al., 2005) and the creation and validation were guided by previously published literature (Boateng, 2018). A Likert scale design was chosen to capture subjective responses while minimizing respondent burden. The scale was designed to address two key questions: (1) To what extent are individuals willing to seek food-related assistance? (2) Which sources are they most likely to turn to for help? Guided by these key questions, the Willingness Scale was developed, and the main scale question was formulated. Sub-questions, referred to as question items, including physical resources, community members, and individuals within a person's circle of support, were carefully selected to represent opportunities for food-related support (Figure 1). The Circle of Support category includes: parents/guardians, other family members, friends, acquaintances, significant others/intimate partners (e.g., girlfriend, boyfriend, partner, wife, husband, spouse), as well as housemates and roommates. This category was developed using the Circle of Support model, which emphasizes the different layers of relationships in an individual's life (Snow, 1998). Rather than listing each individual or

relationship type as separate items, this approach was chosen to ensure inclusivity and proper scoring for individuals who may not have all these specific relationships.

Figure 1

Willingness Scale Design: Sources of Assistance for Food Access

Initially, the scale consisted of a single question prompt and seven question items with total scores ranging from 0 to 28 categorized into three levels of willingness: unwilling (0–9), low willingness (10–19), and willing (20–28). A panel of experts, including one statistician, four nutrition faculty, two graduate students, and two registered dietitians, reviewed the scale for content and clarity. Based on their feedback, the question and the question items were refined for

precision. To address the broad scope of the "circle of support" item within the Willingness Scale, the authors added a supplementary question to identify which specific members within an individual circle of support they would be willing to approach for food-related assistance. Two items were combined, resulting in a six-item scale. Additionally, the scoring system was updated to ensure consistency and enhance interpretability, following recommendations from the statistician. Potential responses ranged from 1 to 5 points per item to maintain a positively anchored scale and avoid confusion surrounding a score of 0, which could be indicative of a lack of response rather than low willingness: Not Willing (1 point), Somewhat Unwilling (2 points), Neutral (3 points), Somewhat Willing (4 points), and Willing (5 points), with total scores ranging from 6 to 30. To facilitate pattern identification and comparisons, a tertiary category scoring scale was used: Unwilling (6–14), Low Willingness (15–22), and Willing (23–30). The final scale can be viewed in Appendix A.

Cognitive interviews were conducted with college students (the scale's target population) to ensure clarity and proper interpretation of the questions. Participants were recruited via email if they had previously participated in a study and permitted follow-ups for future research. To ensure equity and randomness in selection, a random number generator was used to select the individuals invited to participate. A convenience sample of nine University of California, Davis college students participated in online individual interviews held over Zoom, lasting approximately 10–15 minutes each. All interviews were recorded and led by the same graduate student researcher. Participants verbalized their thought processes using a concurrent think-aloud approach while responding to the scale. Participant responses were analyzed using qualitative content analysis and discourse analysis. Recommendations, feedback, confusion, and misinterpretations were documented, and participants were encouraged to suggest ways to make

questions more clear/inclusive. Based on the interviews, the scale was revised to enhance clarity, with content modified or removed as necessary and additional examples added to improve comprehension. Additional cognitive interviews were conducted with five participants to confirm that the revisions were effective and that no further changes were required. Interview participant demographics can be found in Table 1. The study's interview protocol, the interview guide, and the Willingness Scale were approved as exempt research by the University of California, Davis Institutional Review Board.

Table 1

Sociodemographic Characteristics of Interview Participants

Characteristics	Total	
	n	%
Race		
White	4	28.5
Middle Eastern	2	14.2
African American/Black	1	7
Latino/a/x/Hispanic (Mexican-American, Puerto Rican, Cuban)	2	14.2
Gender		
Female	11	78.5
Male	3	21.5
Class Standing*		
Freshman	4	28.5
Sophomore	0	0
Junior	3	21.4
Senior	3	21.4
Graduate Student	3	21.4

*Class standing could not be determined for one student due to incomplete demographic data.

Willingness Scale Implementation

The Willingness Scale was integrated into a broader study to evaluate its use in a college student population and investigate the association between willingness to seek help from various people and resources during a period of limited or uncertain access to adequate food, demographic characteristics, and food security status. A convenience sample of college students was recruited during the academic Spring Quarter 2024. Recruitment targeted students enrolled in an introductory nutrition course, other introductory classes, and the university's research portal. Participants were required to be 18 years or older and enrolled at the University of California, Davis during the study period. Participants completed a questionnaire that contained the Willingness Scale administered through Qualtrics survey software (Provo, UT, 2015). Self-reported demographic information and food security status, measured with the 10-item United States Department of Agriculture Adult Food Security Survey Module (AFSSM) was also collected (United States Department of Agriculture, Economic Research Service, 2017).

Statistical Analysis

Participant demographics are presented as absolute counts (*n*) and percentages (%) for categorical variables, while continuous variables are summarized as mean ± standard deviation (SD). Chi-squared tests were conducted to analyze associations between categorical variables. The Shapiro-Wilk test was used to assess data normality and Levene's test was applied to evaluate variance. The authors transformed data where necessary to meet the assumptions for statistical analyses. Using the AFSSM coding scale, raw Adult Food Security Survey scores ranging from 0 to 10 were classified into one of four food security groups: high food security (0 affirmative responses), marginal food security (1-2 affirmative responses), low food security (3-5 affirmative responses), or very low food security (6 or more affirmative responses). Willingness

scores were categorized into three levels using the Willingness Scale tertiary scoring rubric: “Unwilling” (6-14), “Somewhat Willing” (15-22), and “Willing” (23-30). In addition, beyond the Willingness Scale scoring rubric, but for further study analysis, a binomial variable of “Willing” or “Not Willing” was also created to further explore participants' willingness to seek help from various people and resources during a period of limited or uncertain access to adequate food. Responses were coded as “Willing” (if students selected “Somewhat Willing” or “Willing”) or as “Unwilling” (if they selected “Neutral” or “Somewhat Unwilling” or “Not Willing”). "Neutral" was categorized within the “Unwilling” variable because their neutrality suggests a preference for exploring other options. Associations between willingness to seek help during a period of limited or uncertain access to adequate food and food security status were explored through univariate and multivariable linear regression, controlling for self-identified gender, race/ethnicity, first-generation student status, transfer student status, and household income. All statistical analyses were performed using STATA v13 (StataCorp, College Station, TX, USA), with a significance threshold set at $p < 0.05$.

Results

A total of 1,093 participants completed the questionnaire and were included in the analysis. Demographic characteristics, including self-reported gender, ethnicity/race, first-generation student status, transfer status, income, and food security classification, are noted in Table 2. Participants were primarily female (69.6%), of Asian descent (55.2%), and freshman (first-year) students (44.6%). Within the population, 59.9% were classified with high food security, 24.0% with marginal food security, 14.5% with low food security, and 8.6% with very low food security status. Chi-squared tests were conducted to investigate differences in willingness by characteristics including, but not limited to, race/ethnicity, income, gender,

transfer status, and first-generation student status. A significant association between willingness and transfer status ($X^2 = 11.89$, $p = 0.002$) was noted. However, no other relationship between willingness and demographic characteristics was observed.

Table 2

Sociodemographic Characteristics of Participants

Sociodemographic Characteristics	Total Population (n = 1093)	
	n	%
Self-reported gender		
Female	761	69.6
Male	287	26.3
Nonbinary/Third gender	24	2.2
Transgender	9	0.8
Other	11	1
Unreported	1	0.1
Age in years,		
Mean ± SD	19.78 ± 2.07	
Race/Ethnicity*		
African American/Black, not of Hispanic origin	32	2.9
American Indian/Alaska Native	11	1.0
Asian	603	55.2
Chicano	73	6.6
Latino/a/x/Hispanic Mexican-American, Puerto Rican, Cuban	215	19.6
Middle Eastern/Northern African	34	3.1
Pacific Islander	21	1.9
White, not of Hispanic origin	268	24.5
Other	21	1.9

Sociodemographic Characteristics	Total Population (n = 1093)	
	n	%
Unreported	24	2.2
First-Generation Student		
Yes	428	39.2
No	590	54.0
Unreported	75	6.8
Enrollment status		
Freshman 1st-year	487	44.6
Sophomore 2nd-year	222	20.3
Junior 3rd-year	167	15.3
Senior 4th-year	192	17.6
Other	19	1.7
Unreported	6	0.5
Transfer student		
Yes	145	13.3
No	944	86.4
Unreported	4	0.3
Household Income		
$0 – $39,999	286	26.2
$40,000 - $79,999	147	13.4
$80,000 +	289	26.4
Unreported	371	34.0
Meal plan		
Yes	510	46.7
No	581	53.3
Food Security Status		
High Food Security	578	59.9
Marginal Food Security	262	24.0
Low Food Security	159	14.5
Very Low Food Security	93	8.6

*Individuals identifying as multiracial are counted under each racial category they belong to.

The relationship between food security classification groups and willingness to seek help was analyzed, focusing on differences across the four food security classification groups. Table 3 reports differences in willingness categorization by food security classification groups. There were no significant differences in willingness scores across all three willingness categorization levels. While not significant, it was noted that as food insecurity increased, willingness to seek help decreased.

Participants with high food security were the most willing to seek help (29.5%) and those in the very low food security group were the least willing to seek help (21.2%). Participants with marginal food security had the highest frequency of individuals who scored as being "Somewhat Willing," while those in the high food security group had the lowest frequency of individuals in the "Somewhat Willing" (59.2%) category. Participants with low food security had the highest frequency of individuals who were unwilling to seek help (17.1%), while participants with high food security had the lowest (11.3%).

Table 3

Differences in Willingness Levels by Food Security Classification Groups: Counts and Frequencies

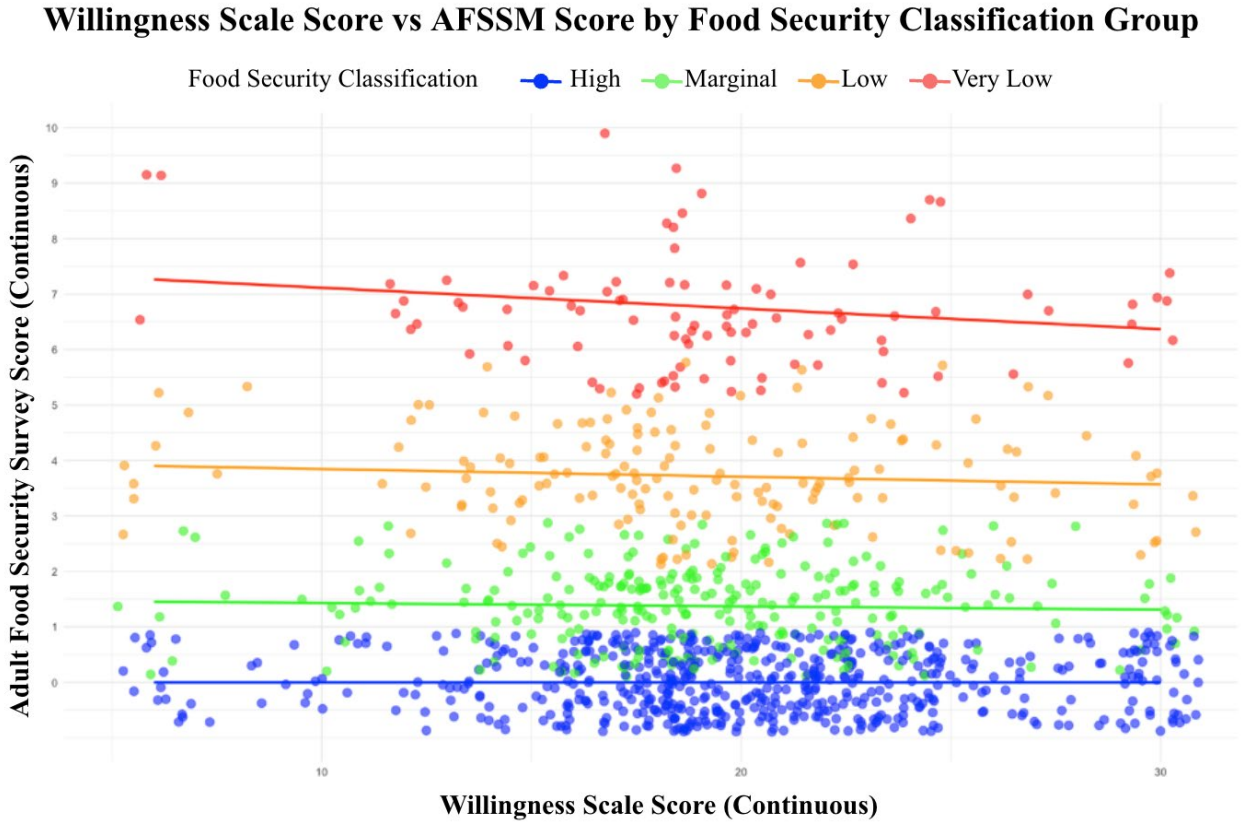
	High Food Security n = 578		Marginal Food Security n = 262		Low Food Security n = 159		Very Low Food Security n = 94		*p*-value
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	
Willing to seek help	171	29.5	60	22.9	36	22.8	20	21.2	0.07
Somewhat willing to seek help	342	59.2	172	65.6	96	60.1	61	64.9	0.28
Unwilling to seek help	65	11.3	30	11.45	27	17.1	13	13.8	0.23

To illustrate a potential variation of willingness, a scatter plot was generated to examine the relationship between Willingness Scale scores and food security (AFSSM scores ranging from 0 to 10). For added clarity, data points were grouped and color-coded by the four Food Security classification groups: High Food Security (blue), Marginal Food Security (green), Low Food Security (orange), and Very Low Food Security (red) (Figure 2).

The plot illustrates distinct patterns across the Food Security classification groups. Among participants with High Food Security (blue), data are clustered towards higher Willingness Scale scores with a relatively flat trend line, suggesting a weak or negligible relationship between food security status and Willingness Scale scores. Conversely, participants with Very Low Food Security (red) exhibited a broad range of Willingness Scale scores and a negative trend line (-0.037). Within the Very Low Food Security group, individuals with lower Willingness Scale scores appeared to experience greater severity of food insecurity, as indicated by higher food security scores, compared to those with higher Willingness Scale scores in the same Food Security classification groups.

Figure 2

Relationship Between Willingness Scale Scores and Adult Food Security Survey Module (AFSSM) Scores by Food Security Survey Classification Groups: Scatter Plot with Trend Line



To further evaluate the relationship between food security and Willingness Scale scores, univariate and multivariate linear regression models were conducted (Table 4). Within the univariate model, food security was significantly associated with willingness scale scores (B = -0.011, p = 0.02). This means that as AFSSM scores increased, reflecting greater food insecurity, Willingness Scale scores significantly decreased. This suggests that food security may

significantly influence individuals' willingness to seek assistance, with those experiencing low food security potentially being less willing to seek out food-related help when in need.

Multivariate linear regressions investigating the relationship between food security status (AFSSM scores) and Willingness Scale scores were conducted, controlling for self-identified gender, race/ethnicity, first-generation status, transfer student status, and household income. Variables not significantly contributing to the model were dropped (first-generation status and ethnicity). Within the multivariate model, the beta coefficient for food security status slightly decreased after controlling for demographic and socioeconomic variables. However, food security remained significantly associated with Willingness Scale scores (B = -0.01, $p = 0.04$). As AFSSM scores increased, indicating greater food insecurity, Willingness Scale scores decreased. This suggests that food insecurity is linked to a lower willingness to seek help during a period of limited or uncertain access to adequate food.

Table 4

Univariate and Multivariate Linear Regression Results: Predictors of Willingness Scores by AFFSM scores.

Measure	β-Coefficient	95% CI	*p*-value
Univariate Model			
Food Security Status	-0.01	[-0.02, -0.00]	0.01
Multivariate Model*			
Food Security Status	-0.01	[-0.02, -0.00]	0.01

*Covariates within the multivariate model include income, transfer status, gender, race/ethnicity, and first-generation status.

The frequency of willingness for each item was calculated by food security classification to identify potential differences in the willingness across groups. (Table 5). Chi-square tests and subsequent pairwise comparisons were used to explore these differences further. Across all food security classification groups, willingness to ask one's "Circle of Support" for food-related assistance had the highest frequency of willingness across groups (73.4% -- 75.5%), with no significant differences between food security classification groups ($X^2 = 0.17$, $p = 0.98$). Similarly, for the "Community Members" item, significant differences in willingness responses were not observed across the four food security classification groups ($X^2=3.88$, $p = 0.27$). In addition, no significant differences in willingness were observed for "Campus Food Access Programs" ($X^2 = 4.6$, $p = 0.20$) or "Community Food Access Resources" ($X^2 = 5.53$ $p = 0.13$). For both Campus Food Access Programs and Community Food Access Resources, willingness to use these resources was highest among participants with High Food Security (62.8% and 41.6%, respectively). Similarly, "Federal Food Access Resources" had no significant differences in willingness across food security classifications, with the highest willingness reported in participants with Low and Very Low Food Security (58.9% and 58.2%, respectively). Willingness to use "Social Media" as a resource for food acquisition was the lowest out of the items, ranging from 13.7%-22.3%, with the highest willingness frequency observed in the Very Low Food Security classification group.

Table 5

Willingness to Seek Assistance Across Willingness Scale Items by Food Security Classification Group

	High Food Security n = 575		Marginal Food Security n = 262		Low Food Security n = 158		Very Low Food Security n = 94		X^2	*p*-value
	n	%	*n*	%	*n*	%	*n*	%		
Circle of support	434	75.5	197	75.1	118	74.7	69	73.4	0.17	0.98
Community members	176	30.6	75	28.6	50	31.6	37	39.4	3.88	0.27
Campus Food Access Programs	361	62.8	143	54.6	94	59.5	56	59.6	4.60	0.20
Community Food Access Resources	239	41.6	87	33.2	57	36.1	36	38.3	5.53	0.13
Social media	89	15.5	36	13.7	22	13.9	21	22.3	4.30	0.23
Federal Food Access resources	329	57.2	132	50.4	93	58.9	55	58.2	4.15	0.24

Discussion

The purpose of this study was to develop and implement a scale designed to measure college students' willingness to seek help from various resources during periods of limited or uncertain access to adequate food. The Willingness Scale was created to provide a nuanced understanding of how college students navigate food insecurity by leveraging social and community support systems. While previous research has examined the benefits, barriers, and stigma associated with food access resource use, limited studies have explored the complexities of willingness to seek help as a means to improve or maintain food security. Furthermore, while standardized quantitative instruments exist to assess elements of food security, such as internal

factors, food access usage, and food acquisition strategies, no tool has been specifically designed to assess an individual's willingness to seek help during food-insecure periods (Kilgrow et al., 2025). Thus, the creation of the Willingness Scale aims to close this gap and provide a measure of willingness to seek help that can be used for research and evaluation.

Findings from this study indicate a strong relationship between food security classification and willingness to seek food-related assistance. Food insecurity was negatively associated with Willingness Scale scores, with the very low food security group having the highest proportion of individuals categorized as unwilling to seek help. These results align with prior research suggesting that individuals experiencing a lack of food security may be reluctant to seek assistance, even when in need (El Zein et al., 2018; Sklar et al., 2024). While the present study did not collect qualitative data to explore the reasons behind this reluctance, existing literature suggests that fear of judgment and concerns that others may need resources more could be contributing factors (Anderson et al., 2022; Weaver et al., 2022; Sklar et al., 2024).

Previous studies have also noted that many students perceive financial and food-related struggles as inherent to the college experience (Fortin et al., 2021). As a result, students may hesitate to seek assistance or believe that available resources are meant for those with greater need (Zigmont et al., 2019; Sklar et al., 2024). Addressing these perceptions is essential to ensuring that support services are both accessible and utilized by students who could benefit from them. Additionally, previous studies have identified physical barriers to resource utilization, including inconvenient operating hours, transportation or location challenges, limited food options, and confusion surrounding basic needs program eligibility and application processes (Zigmont et al., 2019; El Zein et al., 2022; Mooney et al., 2023). Despite these barriers, research has consistently demonstrated that using food assistance programs is associated

with improved food security, increased fruit and vegetable consumption, and better physical and mental health (Chodur et al., 2023; Martinez et al., 2022; McArthur et al., 2020). However, understanding the determinants of use is first needed for students to receive these benefits.

When examining differences in willingness to seek food-related assistance across food security classification groups, findings remain relatively consistent. Across all four food security groups, the majority of students were willing to seek help from their circle of support. However, willingness was low for other scale items, including community food access resources, community members, and social media. An unexpected trend emerged among students with marginal food security, who exhibited a lower willingness to utilize campus and federal food access resources compared to their peers in other food security classifications. This discrepancy suggests potential gaps in trust, awareness, and accessibility of these resources. These findings align with prior recommendations advocating for enhanced programming and marketing strategies that reduce stigma, improve accessibility, and leverage innovative outreach methods to support students facing a lack of food security (El Zein et al., 2022; Sklar et al., 2024).

Interestingly, students with very low food security demonstrated the highest willingness to seek help through social media. While the exact reasons remain unknown, the anonymity associated with social media has been reported to encourage help-seeking behaviors through online media sources (Horgan & Sweeney, 2010). For students experiencing a lack of food security, social media can serve as a private platform to request assistance, seek out help, and/or share their experiences, thus decreasing possible feelings of stigma, shame, or embarrassment (Horgan & Sweeney, 2010). This finding highlights the potential of social media as a critical tool for connecting food-insecure individuals with assistance programs, especially when traditional help-seeking avenues may feel inaccessible or stigmatized. Future research should explore the

role of online platforms in helping students navigate hardships and experiences with a lack of food security.

Although no significant differences in willingness scores were observed across participant demographics within this sample, variations may exist in other college or adult populations based on factors such as race/ethnicity and/or gender identity. Previous research has shown that certain subpopulations—first-generation students, individuals from marginalized racial/ethnic groups, nontraditional students, and graduate students—are at greater risk of food insecurity compared to their peers (Tanner et al., 2023; Coffino et al., 2021; Willis et al., 2019). Additionally, cultural and identity-based differences have been documented in perceptions of the social acceptability of seeking assistance, which may influence help-seeking behaviors (Taylor et al., 2020; Saykeo et al., 2018; Mackenzie et al., 2006). These perceptions can significantly influence whether individuals are willing to utilize available food assistance programs or instead turn to informal support systems, such as relying on their circle of support or community networks. Understanding these dynamics is crucial for developing culturally and identity-relevant support programs that effectively address food insecurity and related challenges among diverse student populations. Future research should further explore how intersecting identities shape an individual's willingness to seek out food-related assistance and identify strategies to make programs and their offerings more equitable and effective.

Beyond demographic characteristics, personal and past experiences may also play a key role in shaping an individual's willingness to seek help. Although these were not captured within the current study, previous research has shown that students who have experienced food insecurity may be less inclined to seek assistance, as they may perceive food insecurity to be an everyday experience rather than an ongoing challenge (Mooney et al., 2024). Psychological

research further highlights a strong association between adverse childhood experiences (ACEs) and food insecurity, with evidence indicating that young adults with higher ACE scores are less likely to seek help in times of need (Jackson et al., 2016). Similarly, past experiences of discrimination among college students have been linked to increased food insecurity and influenced help-seeking behaviors (Gamba et al., 2024; Carter et al., 2010). Students who have faced discrimination may feel hesitant to engage with institutional, community, and/or federal food support systems, especially if they perceive these resources as stigmatized or inequitable (Peterson et al, 2022). Future research should explore how past experiences, including history of food insecurity, trauma, and/or experiences of discrimination, impact willingness to seek food-related assistance. Further, these factors may serve as an indicator of broader stressors among students experiencing low or very low food insecurity, which could inhibit one's willingness or ability to prioritize food-related needs. Understanding these nuanced factors can inform targeted interventions aimed at reducing barriers, building trust, and ensuring that food assistance programs are designed to effectively reach and benefit those who need them most.

The development of the Willingness Scale provides a critical step toward understanding the complexities of food-related help-seeking behaviors and preferences among college students. Ultimately, improving food access, resource use and awareness among students can lead to potential improvements in overall well-being, including better diet quality, sleep, physical health, and mental health (Chodur et al., 2023; Martinez et al., 2022). The use of this scale can help inform culturally relevant and identity-inclusive programs that reduce stigma, enhance access, and foster a supportive environment within campus and community food resources, ultimately improving diet, health, and related outcomes.

No research is without limitations. This study relied on cross-sectional data and self-reported methods, which may introduce response bias and only capture a snapshot in time, thus limiting insights into behaviors beyond the study period. Despite this limitation, this method was chosen to test the tool within a large population while minimizing respondent burden.

Additionally, although content validity was used, no additional reliability or validity testing was conducted. However, because the questionnaire is cross-sectional and focused on feelings and perceptions, responses may be dynamic and shift based on several other external factors, making traditional reliability testing less useful. While two graduate students were interviewed during the scale development phase, no graduate students took part in formal data collection because participants were recruited from another study that targeted undergraduate students. As graduate students may have unique experiences compared to undergraduate students, it is crucial that future research explore willingness, food security, and related variables of interest to further understand experiences for this group. Findings from the study population may not be fully representative or generalizable to all college campuses since demographics often vary.

Furthermore, it is important to note that individuals within broader racial or ethnic categories may have diverse experiences and cultural norms, even when belonging to the same group. These differences can arise due to various factors, including geographic location, religious beliefs, and upbringing. Future research should consider including more extensive and comprehensive race and ethnicity categories that capture and highlight these differences. Additionally, the University of California, Davis, is unique in that it has a Basic Needs Department serving more than a quarter of its student population. As a result, the stigma

surrounding food insecurity may differ on other campuses where food security resources are less widely available or openly discussed.

Conclusion

The Willingness Scale can potentially be a valuable tool for researchers and practitioners aiming to address a lack of food security more effectively and equitably. By identifying patterns in willingness to seek food-related help, policymakers, practitioners, and community organizations can design more targeted interventions to improve access to resources. While this study was limited in its evaluation of all factors pertaining to food security status, future research is needed to examine the role of willingness across diverse populations and its influence, not only on food security status, but also on other factors, such as health-related behaviors, mental and physical health, and dietary pattern.

Reflections

The study's reliance on cross-sectional data and self-reported methods limits long-term insights, which could be improved through further testing across diverse populations, such as young adults outside a college setting, and by cross-referencing questionnaire responses with qualitative data. To improve equity and inclusivity, the tool could be updated to reflect specific resources, individuals, and organizations that are most relevant to the population of interest. Moreover, while it was not the purpose of the study, it is important to note that numerous factors beyond general sociodemographic characteristics, such as adverse childhood experiences, trauma, and discrimination, could influence an individual’s willingness to seek food-related help. These factors were not measured in this study but should be considered in future research when forming conclusions about the impact of willingness scores.

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Appendix A

These next few questions will ask about your willingness to seek help from various people and resources during times of need. Please read over the questions carefully and choose the response that fits you best.

Please indicate: How willing would you be to ask the following social network and physical resources for assistance with obtaining food during a period of uncertain access to food?

	Please choose the response that fits you best 1 = Not willing 2 = Somewhat unwilling 3 = Neutral 4= Somewhat willing 5 = Willing
1. Circle of Support (Parents/Guardians; other family members; Friends; Acquaintances; Significant others; Intimate partners (e.g. Girlfriend, Boyfriend, Partner, Wife, Husband, Spouse), Housemates/Roommates)	
2. Community members (classmates, neighbors, professors, teaching assistant (TA), Dorm Advisor (RA), employer, co-workers, religious groups, student organizations, etc.)	
3. Campus-based food access resources (Aggie Compass, ASUCD Food Pantry, Satellite Food Pantries (e.g., AB540 pantry, LGBTQ+ Pantry, Graduate student pantry, etc.) AggieFresh, AggieEats food truck, Fruit and Veggie Up!)	

4. (Non-University) Community-based food access resources (food pantries, STEAC, night market, freedges, Wheels on Meals, etc.)	
5. Social media (Instagram, Facebook, Reddit, TikTok, Discord, Twitter, etc.)	
6. Federal/State food access resources (e.g., Food Stamps; SNAP/CalFresh/ EBT, WIC)	

Now add up the scores for each item to get a total: _____

Individual scores can vary from 6 - 30

Scores ranging from 23 – 30 would be considered *willing*
Scores ranging from 15– 22 would be considered *low willingness*
Scores ranging from 6 – 14 would be considered *unwilling*

Supplementary Question:

Display Logic: If participant answered #1 - Somewhat unwilling (1), Neutral (2), Somewhat Willing (3), or Willing (4)

2. Please indicate what members within your circle of support you would be willing to ask for assistance with obtaining food.

	Please choose the response that fits you best. 1 = Not willing 2 = Somewhat unwilling 3 =Neutral 4 = Somewhat willing 5 = Willing 0 = Not Applicable
1. Parents/Guardians	
2. Other family members	
3. Friends	
4. Acquaintances	
5. Significant others; Intimate partners (e.g. Girlfriend, Boyfriend, Partner, Wife, Husband, Spouse)	
6. Housemates/roommates	