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Food insecurity among Black college students: An exploratory study

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ABSTRACT

Literature suggests that food insecurity negatively affects academic well-being and sense of belonging among college students; however, limited research has focused on Black students. This exploratory study examines the prevalence and impact of food insecurity among Black students. The results indicate that a greater proportion of Black students experienced food insecurity compared to White students. Additionally, this study found that Black students do not experience the same negative consequences of food insecurity as White students and that these negative consequences may be offset due to Black students' higher level of engagement and resource utilization. Implications for social workers are discussed.

KEYWORDS

Black college students; food insecurity; higher education

Food insecurity is defined as “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” (U.S. Department of Agriculture, 2020, para. 3). Numerous studies and increased attention over recent years have highlighted food insecurity as a pervasive social issue that impacts college students across the United States (Chaparro et al., 2009; Cullen et al., 2019; Goldrick-Rab et al., 2018; Ilieva et al., 2019; Maroto et al., 2015; Martinez et al., 2018; Morris et al., 2016; Payne-Sturges et al., 2018; Riddle et al., 2020; Willis, 2019; Wood & Harris, 2018; Wood et al., 2016).

Food insecurity rates among American college students range from 12% to 56%, including private and public universities as well as community colleges (Cullen et al., 2019; Goldrick-Rab et al., 2018; Maroto et al., 2015; Morris et al., 2016; Payne-Sturges et al., 2018; Willis, 2019; Wood et al., 2016). It is important to note that even the lowest end of the range of food insecurity rates among college students is higher than the overall national food insecurity rate of 10.5% (Coleman-Jensen et al., 2020). Another notable and consistent finding from extant research is that Black college students experience food insecurity at much higher rates than do White college students (Cullen et al., 2019; Goldrick-Rab et al., 2018; Henry, 2017; Maroto et al., 2015; Martinez et al., 2018; Morris et al., 2016; Payne-Sturges et al., 2018; Wood & Harris, 2018; Wood et al., 2016).

College education is a major contributor to economic security in the United States (U.S. Department of Education, 2016). Further, with the increased efforts in recent years by American universities and colleges to achieve diversity and inclusion (U.S. Department of Education, 2016), it is crucial to pay attention to the wellbeing of students of color on college campuses to support their future social mobility. In particular, given the evidence from existing literature on food insecurity among Black college students, it is critical to understand their college experiences as related to food insecurity. Thus, the purpose of this exploratory study is to examine the relationship between food insecurity and campus experiences among Black college students. To that end, the following literature review examines the prevalence of food insecurity among Black college students in comparison to White students. Further, this manuscript

explores factors that contribute to the wellbeing of students on campus, such as academic wellbeing, sense of belonging, and physical, mental, and psychosocial wellbeing.

Literature review

Prevalence of food insecurity among black and White college students

A number of recent studies suggest that Black college students in the United States are at greater risk of experiencing food insecurity than their White peers (Cullen et al., 2019; Goldrick-Rab et al., 2018; Henry, 2017; Maroto et al., 2015; Martinez et al., 2018; Morris et al., 2016; Payne-Sturges et al., 2018; Wood & Harris, 2018; Wood et al., 2016). Three studies in particular report food insecurity rates for Black students almost twice as high as those of White students, regardless of the institutional type (Cullen et al., 2019; Maroto et al., 2015; Martinez et al., 2018).

Goldrick-Rab et al. (2018) found differing student food insecurity rates at four-year institutions as compared to community colleges. However, the gap in rates between Black and White students was consistent: 54% food insecurity rate for Black students versus 37% for White students at community colleges, and 47% food insecurity rate for Black students versus 30% for White students at four-year institutions.

Impact of food insecurity among general college student population

Food insecurity and academic wellbeing

Research indicates that food insecurity has detrimental impacts on college students' academic wellbeing. Specifically, food insecurity has been associated with lower GPAs, class attendance, ability to focus/concentrate, and persistence (Allen & Alleman, 2019; Crutchfield et al., 2020; El Zein et al., 2019; Henry, 2017; Maroto et al., 2015; Meza et al., 2019; Morris et al., 2016). Further, food insecure students reported increased disruptions to their academic performance (Payne-Sturges et al., 2018) and taking semesters off to work and financially support themselves, which delayed their graduation (Allen & Alleman, 2019). Some food-insecure students also reported scheduling classes to avoid being hungry in class (Allen & Alleman, 2019) or skipping class to avoid the embarrassment of having their classmates hear their stomachs growl (Meza et al., 2019).

Food insecurity and physical, mental, and psychosocial wellbeing

Common consequences of food insecurity for college students' physical and mental health include sleep disturbance (Crutchfield et al., 2020; El Zein et al., 2019; Meza et al., 2019), passing out (Allen & Alleman, 2019; Crutchfield et al., 2020), lack of energy (Henry, 2017; Meza et al., 2019; Payne-Sturges et al., 2018), migraines (Allen & Alleman, 2019), dizziness, and weight gain or loss (Crutchfield et al., 2020). Additional common consequences of food insecurity among college students include high stress levels (Crutchfield et al., 2020; Meza et al., 2019; Payne-Sturges et al., 2018), depression (Crutchfield et al., 2020; Payne-Sturges et al., 2018), and feelings of sadness, hopelessness, and anger (Meza et al., 2019). Food insecurity also impacts college students' psychosocial wellbeing, as some food-insecure students reported feeling ashamed and experiencing social isolation as a result of food insecurity (Allen & Alleman, 2019; Henry, 2017; Meza et al., 2019).

Food insecurity and sense of belonging

Research on food insecure students' sense of belonging on college campuses is extremely scarce, with only four studies examining the topic so far to the authors' knowledge.

One of the existing studies, conducted in a community college setting, found that food-insecure students were less likely to perceive a sense of belonging with faculty and felt less welcome to engage in campus life overall as compared to food-secure students (Wood et al., 2016). Further, three qualitative studies found a negative impact of food insecurity on students' connections with peers and ability to

engage in social activities, specifically activities that require the purchase of food (Allen & Alleman, 2019; Henry, 2017; Meza et al., 2019). Researchers also suggest that food insecurity is associated with decreased participation in student organizations and other institutional activities (Allen & Alleman, 2019; Henry, 2017). Students in one study ($N = 10$) noted a desire to attend campus events to feel part of the campus community, but reported a struggle to afford the high cost of refreshments at such events (Allen & Alleman, 2019). Additionally, students in a different study reported not participating in student organizations or campus events because they either could not afford the cost of the activity or did not have time to participate due to their work schedules (Henry, 2017).

The literature on the consequences of food insecurity for the overall student body is clear: experiencing food insecurity has detrimental effects on students' academic wellbeing, health, psycho-social wellbeing, and sense of belonging. For the purpose of the current study, literature on the impact of food insecurity among Black college students is reviewed below.

Impact of food insecurity among Black college students

The sparse research on this topic suggests that the negative impacts of food insecurity are similar for Black and White students (Ilieva et al., 2019; Lin et al., 2013). Specifically, Ilieva et al. (2019) reported that as the level of food insecurity increased among Black college students, their likelihood of facing academic challenges also increased. A different study found that food-insecure Black female students also reported higher rates of substance use, increased conflict with partners, lower self-esteem, and less focus on their future as compared to their food secure counterparts (Lin et al., 2013).

One area that has not yet been examined in the literature is the impact of food insecurity specifically on Black college students' sense of belonging. As discussed above, several studies noted that food insecurity is associated with a lower sense of belonging among college students in general (Allen & Alleman, 2019; Henry, 2017; Meza et al., 2019; Wood et al., 2016). No studies to the authors' knowledge have examined whether there is a differential impact of food insecurity on sense of belonging between Black and White students. However, some studies do provide insights into: (1) the differences in Black and White students' perceived sense of belonging and (2) the importance of sense of belonging in promoting academic success. Each of these areas is discussed next.

Differences in Black and white students' perceived sense of belonging

Literature on sense of belonging indicates that Black students and other students of color experience a lower perceived sense of belonging at institutions of higher education. For example, Black, Hispanic, and Native American students at four-year universities reported a lower sense of belonging than White, Asian, and multiracial students (Gopalan & Brady, 2020). Further, one study found that students of color reported a lower sense of belonging during their second semester at Predominantly White institutions (PWIs) than did their White peers (Johnson et al., 2007). A different study found a decreased sense of belonging among Black students at PWIs who also experienced "anxious expectations of race-based rejection" (Mendoza-Denton et al., 2002, p. 903). Further, students' perception of overall racial climate at their college has been positively associated with sense of belonging (Johnson et al., 2007). Research suggests that Black students are less likely than students of any other racial or ethnic group to have a positive perception of their institutions' overall racial climate (Fischer, 2007; Johnson et al., 2007).

Thus, extant literature clearly suggests that Black college students are less likely than their White peers to feel a sense of belonging on campus. To understand what this means for Black students' potential success in college, the connection between sense of belonging and academic wellbeing must also be examined.

Importance of sense of belonging in promoting academic wellbeing

A sense of belonging in college is known to be associated with students' academic wellbeing and persistence to graduate. Specifically, sense of belonging is positively associated with persistence and use of campus services among students at four-year institutions (Gopalan & Brady, 2020). In addition,

there are positive associations between sense of belonging and students' adjustment to college as well as academic performance (Ostrove & Long, 2007).

Notably, two other studies found positive associations between sense of belonging and academic performance and persistence for students of color but not White students (Murphy & Zirkel, 2015; Murphy et al., 2020). In particular, Murphy and Zirkel found that sense of belonging for students of color during their first few weeks at college had a strong, positive relationship to second semester GPA. This highlights the longer-term benefit for students of color in establishing sense of belonging early in college. Further, one study by Fischer (2007) reported that informal social connections, or friendships, positively impact persistence and satisfaction in all students regardless of race. The same study found that formal campus involvement was also positively associated with GPA and persistence for Black and Hispanic students, but not for White students.

Based on the existing state of knowledge, the current study seeks to explore food insecurity among Black college students and the connections between sense of belonging, academic wellbeing, and overall impact.

Research questions

Extant literature suggests that Black adults' social mobility and economic security may be impacted by their experiences with food insecurity and a lacking sense of belonging while in college. However, research on the relationship between food insecurity, academic wellbeing, and sense of belonging, specifically among Black college students, is non-existent. This gap in knowledge is the impetus for the current exploratory study, which examined the following three research questions:

- (1) To what extent is there a difference in the prevalence of food insecurity between Black and White students?
- (2) To what extent does food insecurity impact academic wellbeing and sense of belonging among Black students? And how does this impact differ from White students and the student body in general?
- (3) What factors may help explain the differential impact of food insecurity among Black students as compared to White students?

Methods

Research design and procedure

This IRB approved, cross-sectional study examined the prevalence and impact of food insecurity among Black college students at one regional, Midwestern university in 2019. This exploratory study analyzed parts of a larger campus climate survey that was administered using a 15–20 minute electronic survey through Qualtrics. In an effort to protect the confidentiality of participants, no IP addresses or other directly identifying information were collected.

To encourage participation in this voluntary study, the survey link was emailed out twice via the university president's listserv. Students could also opt to be entered into a drawing for a \$50 gift card if they participated in the study. Data were collected from 958 students from the total spring 2019 student population of 14,795 (Northern Kentucky University, Office of Institutional Research, 2020). This translates to a 6.5% response rate, which is fairly typical for online campus climate surveys (e.g., de Heer & Jones, 2017; Johnson et al., 2014).

Measures

The self-report campus climate survey used in this study was created by a multidisciplinary team of 18 university students, faculty, and staff at Northern Kentucky University. A subset of the items from this campus climate survey was used for the current study. This subset of items measured food insecurity, sense of belonging, academic success, resource utilization, and student engagement on campus. No existing robust scales on these specific concepts were used for this exploratory study, as this study relied upon available items in the existing campus climate survey.

Measuring food insecurity

Two statements with yes/no response options were used to measure food insecurity: (1) I have been hungry at least once in the past week and was unable to buy food for myself; (2) Within the past year, I couldn't afford to eat balanced meals. If a participant responded "yes" to experiencing at least one of the two indicators, then they were categorized as having experienced food insecurity.

Measuring sense of belonging

Sense of belonging was measured using one single survey item. This item asked participants to indicate their level of agreement (on a four-point scale, with 1=Strongly Disagree and 4=Strongly Agree) with the statement, "I feel as though I belong at NKU."

Measuring academic wellbeing

Academic wellbeing was measured by two survey items: GPA and skipping classes. Students were asked to provide their GPA. Using a 4-point scale, with 1 being *Never* and 4 being *Often*, students were asked to respond to the question: "Do you ever skip classes?"

Measuring resource utilization & student engagement

Students were asked to note whether they had accessed a variety of campus resources, including the campus food pantry, the health & counseling center, learning assistance programs (tutoring, writing center, success skills), and University Connect and Persist (UCAP). The UCAP office assists students who are experiencing academic, personal, or financial challenges by providing a lending library for textbooks, retention awards, academic and financial success planning, and networking. In addition, students were asked whether they were actively involved in student organizations.

Data analysis

Data were compiled and analyzed using SPSS Version 27 computer software. Descriptive statistics were used to examine demographic variables, while independent samples t-tests and crosstabs with chi-square were used to examine group differences. Findings significant at the .05 level are reported.

Sample demographics

Data were collected from 958 students enrolled at one regional, 4-year Midwestern university. The majority of participants identified as White (81.2%), while 8.6% identified as Black, 1.7% identified as Latino/Hispanic, 3.3% identified as Asian, and 5.2% identified as Other. Most of the student participants (85%, $n = 816$) identified as undergraduate, while 15% ($n = 142$) of the participants identified as graduate students. The mean age of participants was 23.

In terms of gender, 68.2% of participants identified as female, while the remaining 29% and 2.8% identified as male and other respectively. For sexual orientation, 76.6% of participants identified as Heterosexual, 4.8% as Lesbian or Gay, 10.2% as Bisexual, and 8.4% as other. These demographics are fairly comparable to the demographics of the overall student population at Northern Kentucky

University during the spring 2019 semester, though students of color and women are slightly over-represented in this sample (Northern Kentucky University, Office of Institutional Research, 2020).

All analyses discussed from this point forth are focused solely on Black and White students. Students who identified as a race/ethnicity other than Black or White were excluded from the analyses in order to gain a clearer understanding of the differences and similarities in Black and White students' experiences with food insecurity. This in no way suggests that the needs and experiences of other racial/ethnic groups are of lesser importance.

The sample for this study's analyses consists of 858 students, 776 of whom are White (90%), and 82 of whom are Black (10%).

Results

Research Question 1: To what extent is there a difference in the prevalence of food insecurity between Black and White students?

Prevalence of food insecurity ($N = 858$)

Within the sample of 858 students, 663 reported that they had not experienced either of the two indicators of food insecurity. On the other hand, 195 students reported that they had experience at least one of the two indicators. As such, within this sample, 77% of students were categorized as food secure, while 23% were categorized as food insecure.

A crosstab with Chi-Square was conducted to compare the prevalence of food insecurity between Black and White students. This analysis revealed that 21.1% ($n = 164$) of White students identified as food insecure, while 37.8% ($n = 31$) of Black students identified as food insecure ($\chi^2(1, N = 858) = 11.736, p = .001$). These results suggest that a significantly greater proportion of Black students experienced food insecurity as compared to White students.

Research Question 2: To what extent does food insecurity impact academic wellbeing and sense of belonging among Black students? And how does this impact differ from White students and the student body in general?

Impact of food insecurity among all students ($N = 858$)

Independent samples t-tests were conducted to compare food secure and food insecure students in terms of their GPA, skipping classes, and sense of belonging. When comparing all food-insecure with all food-secure students, without taking ethnicity into account, the analyses revealed that food secure students fair significantly better as compared to their food insecure counterparts. Specifically, food-secure students had a significantly higher average GPA ($t = 3.183, p = .002$), skipped significantly less classes ($t = -3.956, p = .000$), and had a significantly higher sense of belonging ($t = 2.287, p = .023$) (See Table 1). This suggests that food insecurity compromises academic wellbeing and sense of belonging. This finding is in line with the existing literature.

Impact of food insecurity among White students ($n = 776$)

Independent samples t-tests were also conducted to examine the impact of food insecurity on academic wellbeing and sense of belonging specifically among White students. The findings from these analyses mirrored those listed above in Table 1. In particular, food-secure White students had a significantly higher average GPA ($t = 3.298, p = .001$), skipped significantly fewer classes ($t = -4.391, p = .000$), and had a significantly higher sense of belonging ($t = 2.551, p = .011$) as compared to food-insecure White students. Again, this suggests that, among White students, food insecurity leads to less favorable outcomes in terms of academic wellbeing and sense of belonging. These findings are displayed in Table 2.

Table 1. Impact of food insecurity among all students ($N = 858$).

	Food Secure		Food Insecure		<i>t</i>	<i>p</i>	Effect Size (Cohen's <i>d</i>)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
GPA	3.44	.529	3.30	.522	3.183	.002**	.269
Skipping classes	1.73	.717	1.97	.786	-3.956	.000***	-.326
Sense of belonging	3.35	.715	3.19	.825	2.287	.023*	.210

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2. Impact of food insecurity among White students ($n = 776$).

	Food Secure		Food Insecure		<i>t</i>	<i>p</i>	Effect Size (Cohen's <i>d</i>)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
GPA	3.46	.526	3.30	.533	3.298	.001**	.300
Skipping classes	1.73	.724	2.02	.802	-4.391	.000***	-.389
Sense of belonging	3.37	.707	3.18	.845	2.551	.011*	.252

* $p < .05$; ** $p < .01$; *** $p < .001$.

Impact of food insecurity among Black students ($n = 82$)

The authors of this study hypothesized that the impact of food insecurity among Black students would be comparable to the impact of food insecurity among White students and the sample as a whole. This hypothesis was, however, disproved. As can be seen in Table 3, the results of independent samples *t*-tests revealed no statistically significant differences in GPA, skipping classes, or sense of belonging between food-secure and food-insecure Black students. This suggests that, among Black students, food insecurity does not seem to have the same level of negative impact as was found among White students and among the entire sample.

Comparing food insecure Black students with food insecure white students ($n = 195$)

Independent samples *t*-tests were conducted to compare academic outcomes and sense of belonging between White food insecure students and Black food insecure students. The findings from these analyses, which are displayed in Table 4, indicate that Black food-insecure students fare slightly **better** than White food-insecure students. In particular, there were no significant differences in the average GPA and sense of belonging between Black and White food-insecure students. Furthermore, Black food-insecure students skipped significantly **fewer** classes than White food insecure students ($t = 2.021, p = .045$). Again, this suggests that Black food-insecure students fare slightly better as compared to White food-insecure students.

This is especially noteworthy given the extensive literature that suggests that White students in general tend to fare better academically and in terms of sense of belonging as compared to Black students. These findings were also demonstrated in this study, as noted in Table 5. Table 5 shows that, when taking food insecurity out of the equation, and simply comparing Black and White students, White students had a significantly higher average GPA ($t = 2.503, p = .013$). White students also reported a higher sense of belonging. This analysis approached significance ($t = 1.879, p = .061$).

Table 3. Impact of food insecurity among Black students ($n = 82$).

	Food Secure		Food Insecure		<i>t</i>	<i>p</i>	Effect Size (Cohen's <i>d</i>)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
GPA	3.23	.521	3.30	.464	-.638	.526	-.156
Skipping classes	1.74	.621	1.71	.643	.232	.817	.055
Sense of belonging	3.06	.776	3.24	.723	-.912	.366	-.240

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4. Comparison of the impact of food insecurity on Black & White students ($n = 195$).

	White Food Insecure		Black Food Insecure		t	p	Effect Size (Cohen's d)
	M	SD	M	SD			
GPA	3.30	.533	3.30	.464	.000	1.000	.000
Skipping classes	2.02	.802	1.71	.643	2.021	.045*	.396
Sense of belonging	3.18	.845	3.24	.723	-.322	.748	-.070

* $p < .05$; ** $p < .01$; *** $p < .001$.**Table 5.** Comparison of Black & White students' academic wellbeing & sense of belonging (without considering food insecurity) ($N = 776$).

	White Students		Black Students		t	p	Effect Size (Cohen's d)
	M	SD	M	SD			
GPA	3.42	.531	3.26	.496	2.503	.013*	.316
Skipping classes	1.79	.751	1.73	.626	.714	.476	.087
Sense of belonging	3.33	.743	3.14	.753	1.879	.061	.257

* $p < .05$; ** $p < .01$; *** $p < .001$.

Taken together, the results suggest that the achievement gap appears larger when comparing Black and White students in general, and that this achievement gap in fact seems to be reversed when comparing food-insecure Black and White students.

Research Question 3: What factors may help explain the differential impact of food insecurity among Black students as compared to White students?

Comparison of resource utilization & student engagement among food insecure and food secure Black students ($n = 82$)

As was noted above, when comparing Black food-insecure students with Black food-secure students, no significant differences emerged in terms of GPA, skipping classes, or sense of belonging. In order to better understand these findings, crosstabs with Chi-Square were conducted to compare Black food-secure and Black food-insecure students in terms of their service utilization and student engagement. The findings from these analyses (as displayed in Table 6) show a consistent pattern, with a higher proportion of Black food-insecure students accessing support services and actively participating in student organizations as compared to their Black food-secure counterparts. The difference was most pronounced for Learning Assistance Programs, with 75% of Black food-insecure students accessing these programs, as compared to 41.4% of Black food-secure students ($p = .020$). While this was the only statistically significant finding, the pattern was consistent, with a higher rate of utilization/engagement among food-insecure Black students. Within the context of these findings, it is important to note that there was no notable difference in the housing situation of food-insecure and food-secure

Table 6. Comparison of Black food insecure & Black food secure students: proportion of students accessing support resources & involvement in student organizations.

	Black Food Secure	Black Food Insecure	χ^2	p
Campus Food Pantry	36.7%	60%	2.630	.105
Health & Counseling Center	46.4%	65%	1.621	.203
Learning Assistance Programs (tutoring, writing center, success skills)	41.4%	75%	5.408	.020*
University Connect & Persist	43.3%	61.9%	1.705	.192
Actively involved in student organizations	63.6%	82.6%	2.391	.122

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7. Comparison of White food insecure & Black food insecure students: proportion of students accessing support resources & involvement in student organizations.

	White Food Insecure	Black Food Insecure	χ^2	<i>p</i>
Campus Food Pantry	25.2%	60%	9.979	.002**
Health & Counseling Center	49.2%	65%	1.723	.189
Learning Assistance Programs (tutoring, writing center, success skills)	40.2%	75%	8.479	.004**
University Connect & Persist	15.9%	61.9%	21.908	.000***
Actively involved in student organizations	46.9%	82.6%	9.980	.002**

* $p < .05$; ** $p < .01$; *** $p < .001$.

Black students. Specifically, 58.1% of Black food-secure students and 54.8% of Black food-insecure students reported living on campus.

These higher rates of resource utilization and engagement in student organizations may help explain the findings for Research Question 2.

Comparison of resource utilization & student engagement among Black and White food insecure students ($n = 195$)

Crosstabs with Chi-Square were conducted to compare resource utilization and student engagement between food-insecure Black and White students. The findings, as shown in Table 7, revealed that a significantly greater proportion of Black food-insecure students accessed resources as compared to their White counterparts. Specifically, a significantly greater proportion of Black food-insecure students accessed the campus food pantry, learning assistance programs, and UCAP. Furthermore, a significantly greater proportion of Black food-insecure students were involved in student organizations.

It is important to note that Black students' higher resource utilization and engagement could be attributed to a significantly higher proportion of Black food-insecure students living on campus compared to White food-insecure students (54.8% vs. 25.6%, $\chi^2 = 10.555$, $p = .001$). This is in line with the differences found among all Black and White students in this study, where 56.8% of Black and 22.1% of White students reported living on campus ($\chi^2 = 42.623$, $p = .000$).

Discussion

This exploratory study aimed to examine the prevalence and impact of food insecurity among Black college students using a component of a larger campus climate study conducted at one university. Based on existing literature, it was expected that food insecurity would be more prevalent among Black students than White students. It was also expected that food-insecure Black students would have less favorable college experiences, such as decreased academic wellbeing and a lower sense of belonging, as compared to food-secure Black students. Another expectation was that, when compared to White food-insecure students, Black food-insecure students would have less favorable academic wellbeing and lower sense of belonging. This finding was expected due to the extensive literature that demonstrates a significant racial achievement gap between Black and White college students.

The results from the current study were striking. The results indeed evidenced that Black college students experienced food insecurity significantly more than White college students (38% versus 21%). Contrary to what was expected, there were no notable differences between Black food-insecure and Black food-secure students' academic outcomes and sense of belonging. Furthermore, contrary to prior research, this study found that Black students did not experience the negative consequences of food insecurity that were experienced by White college students. Specifically, the Black food insecure students in this study did **not** experience a lowered GPA, an increase in skipping classes, or a decreased sense of belonging. The results of this exploratory study may suggest that Black food-insecure students

fares better academically and in terms of sense of belonging as compared to White food-insecure students.

In order to better understand these results, resource utilization and student engagement were examined. The results suggest a possibility that Black food-insecure students may have been protected from the negative outcomes generally associated with food insecurity due to their high service utilization and high engagement in student organizations. Specifically, the Black food-insecure students in this exploratory study utilized campus resources at a higher rate than both Black food-secure students and White food-insecure students. Additionally, more Black food-insecure students were involved in student organizations than Black food-secure and White food-insecure students. The racial difference may be influenced by the living arrangements, as significantly more Black students than White students lived on campus regardless of food security status.

Study limitations

As an exploratory study, a few very important limitations must be acknowledged. First, data were only collected from students at one medium-sized, public regional university in the Midwest. Furthermore, this university is a PWI. In and of itself, this setting has the potential to impact findings related to sense of belonging. Second, the subsample of Black students was small ($n = 82$) particularly as compared to the White students ($n = 776$). This smaller sample size of Black students can, at least in part, be attributed to the fact that Northern Kentucky University is a PWI. Additionally, this study utilized secondary data that was collected as part of a university-wide campus climate study. As such, this study relied on the survey items that were included in the larger campus climate survey. This suggests that the reliability and validity of the measurement instruments have not been established. Finally, it must be noted that the data were analyzed using independent samples t-tests and chi-squares, which limited statistical power. Based on these limitations, caution is needed when interpreting and applying the study findings to other settings.

Despite these limitations, the findings may still provide helpful preliminary insights for other colleges and universities, particularly PWIs. The results of this study suggest that the negative consequences of food insecurity among Black students may possibly be offset when they access resources and engage in campus organizations. This may provide important insights into both Black students' college experiences and implications for social work practitioners, educators, and researchers as discussed below.

Implications for future research

The findings from this exploratory study suggest that additional research is warranted on the relationship between food insecurity, academic wellbeing, and sense of belonging among Black students. Future studies should strive to address the limitations of this study. Specifically, future studies should: focus on collecting data at a variety of institutions, including HBCUs, in geographically diverse locations; collect data from a larger subsample of Black students; utilize more robust measures of food insecurity and sense of belonging; and use more advanced statistical analyses.

Further, understanding food insecurity and factors associated with the challenge among other marginalized student groups, including students of color other than Black, foreign-born students, older students, and LGBTQIA+ students, among others, may provide further insights. In addition, longitudinal studies to investigate the economic wellbeing of Black individuals based on experience of college life, graduation, and contributing factors such as food insecurity, campus engagement, and service utilization, would provide knowledge on the impact of quality of college life on future success among Black Americans.

Implications for practice & policy

Provide campus services that meet the needs of Black students

Given the results of this study, it is recommended that universities and colleges deliberately target initiatives to ensure that all students, with particular focus on Black students, can readily access university supports. In particular, university supports serve as a direct connection for Black students to the campus community and available resources. University social workers, counselors, advisors, and faculty members are all potential points of contact who can collaborate with university supports and students in need.

Access to Resources

In this study, Black food-insecure students accessed university resources (UCAP in particular) at a robust rate as compared to other students. Further, Black food insecure students utilized the campus food pantry, FUEL NKU, significantly more than others in this study. This is a potential and personalizable point of contact for university faculty and staff members, an opportunity to be sure that students are accessing all available resources. Specifically, a coordinated community approach to providing services may be key to increasing access to the campus food pantry and other resources. For instance, campus counseling staff have an opportunity to address not just the mental health needs of students, but their overall wellness needs by being attuned to issues like food insecurity and sense of belonging. Similarly, academic advisors and faculty members should be aware of campus resources so they can connect students to needed resources, such as the campus food pantry. The campus food pantry can play a vital role for student success by directly addressing food insecure students' nutritional needs and connecting students to additional resources.

University commitment

The campus community must dedicate time and resources to guarantee that students have access to food that is nutritious, affordable or free, and accessible. This includes engagement in training and education for faculty, staff, and administrators regarding food insecurity, along with dedicating and supporting spaces and initiatives to foster a sense of belonging and security among students. Social workers on university campuses, including faculty and staff, are perfectly positioned to advocate for Black students' needs by intentionally reaching out to and engaging with Black students, thereby increasing the likelihood that Black students will feel safe and comfortable accessing services if the need arises.

Engage Black students in campus organizations

Universities and colleges should also encourage Black students to become active participants in the campus community. Since some studies found food insecurity to be connected to decreased student engagement (Allen & Alleman, 2019; Henry, 2017), understanding barriers to participation may be key. For example, offering free food may encourage more participation from food-insecure students as the cost of food may be a barrier in participating in both informal and formal activities (Allen & Alleman, 2019; Henry, 2017; Meza et al., 2019). Student organizations should have opportunities to apply for campus funding to provide free food during organizational meetings. Similarly, student events should offer free food for student attendees, funded through campus resources rather than student fees.

Notably, some of these practice and policy implications exceed the reported results of this study as they are only tangentially related to food insecurity (i.e. promoting student engagement). More targeted studies are needed to examine the need for and usefulness of these practices and policies. Nonetheless, these practice and policy implications were included in this manuscript to offer food for thought and promote a holistic student wellness perspective.

Perspective and framing

Consistent with prior research, this study found that food insecurity is significantly more common among Black students than White students. Many studies also found that Black college students overall are less engaged on campus and have more challenges academically. This study provides a new perspective on Black students and food insecurity: Black students may thrive, even when food-insecure, if they have easy access to services and campus activities that fit their needs and who they are.

It is not enough to just provide support services. Addressing only the presenting problem does not account for the larger societal structures and considerations related to the social determinants of health. Institutions must recognize that perceptions of overall racial climate do have an impact on students' sense of belonging and that Black students tend to perceive the climate more negatively than any other racial group (Fischer, 2007; Johnson et al., 2007). For instance, considering where Black students live (i.e., on or off campus) may provide some insight in how to best support and engage them. Social workers in higher education should actively seek to develop, implement, and sustain services strategically with the needs of Black students in mind by collaborating with Black students, partners across campus, and the surrounding communities.

Conclusion

This exploratory study provides beginning knowledge on food insecure Black college students as it relates to their academic wellbeing and sense of belonging. Although interest in research on food insecurity among college students has grown in recent years, this specific topic was not previously examined to the authors' knowledge. It is crucial to acknowledge that American universities and colleges have responsibilities in supporting Black students as part of their effort to become more diverse and inclusive (U.S. Department of Education, 2016). These efforts must include tailored and strategically advertised services that address the needs of Black students, including nutritional, physical & mental health, educational, financial, and social needs. Furthermore, the efforts should include not only promoting the enrollment and retention of Black students, but also recruiting and retaining Black faculty, staff, and administrators to create a campus climate where Black students, along with other students, can thrive and succeed. The social work profession is tasked with enhancing well-being of people and communities "through its quest for social and economic justice, the prevention of conditions that limit human rights, the elimination of poverty, and the enhancement of the quality of life for all persons" (Council on Social Work Education, 2015, p. 5). Social work professionals in any setting, including higher education, must endeavor to meet this purpose.

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