African Journal of Hospitality, Tourism and Leisure 2025, Vol. 14 No. 3 pp. 614-622
ISSN: 2223-814X

Surviving Food Insecurity at Institutions of Higher Learning: An Explanatory Enquiry

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Abstract

Higher education institutions are grappling with food insecurity, despite food access being a fundamental human right. This research study investigated the lived experiences and coping mechanisms of students facing food insecurity. Participants in the study were students aged 19 to 24 years, from their second, third, and fourth years, enrolled in the School of Health Care Sciences in the optometry, nursing, and pharmacy departments. The study utilised an explanatory sequential mixed-method design. The research purposefully selected 14 students identified as experiencing moderate and severe food insecurity from the School of Health Care Sciences, based on results from the quantitative portion of the study using the Food Insecurity Experience Scale (FIES). The report focuses on qualitative findings from in-depth mobile interviews, revealing six key themes related to food insecurity among students. Food insecurity significantly impacts students' academic performance, mental health, and general welfare. Universities should prioritise student well-being by offering targeted support services like food programs, engaging with students who face food insecurity, and creating effective policies and programs.

Keywords: Coping strategies, experiences, food insecurity, interviews, university students

How to cite this article: Mashabela M.E., Rapetsoa, M.E. & Selepe, B.M. (2025). Surviving Food Insecurity at Institutions of Higher Learning: An Explanatory Enquiry. African Journal of Hospitality, Tourism and Leisure, 14(3):614-622. DOI: https://doi.org/10.46222/ajhtl.19770720.644

Introduction

This report is part of a broader investigation titled "Nutrition knowledge, food insecurity and coping strategies among students in institutions of higher learning in the Limpopo Province." This research was carried out during the COVID-19 pandemic lockdown period between adjusted levels three and one from the 8th of August 2021 to the 12th of October 2021. Food insecurity is defined as: "… a condition where families lack adequate access to food due to financial limitations or other challenges, which is associated with negative health outcomes, including an increased risk of chronic illnesses, malnutrition, and increased mortality rates …" (Sun et al., 2020). College and university students around the globe encounter food insecurity (Mukigi & Brown, 2018). This challenge arises from various barriers, including financial constraints and limited access to nutritious foods (Jensen et al., 2016). Research shows that students struggle with managing their finances, especially in regard to budgeting for food expenses (Forman et al., 2018), leading to higher levels of food insecurity than in the general population (Nazmi et al., 2018). The global economy has been profoundly impacted by the COVID-19 pandemic, with food security and nutrition being especially susceptible (Statistics SA, 2022). South Africa has also experienced these effects, similar to many other countries around the world. According to a report from Statistics South Africa, approximately 23.6% of South Africans encountered moderate to severe food insecurity in 2020, whereas approximately 14.9% experienced severe food insecurity (Statistics SA, 2022). The Food and Agriculture Organisation (FAO) of the United Nations and the South African Vulnerability Assessment Committee (SAVAC) report that 28.9% and 18.2% of the population in Limpopo, rely predominantly on agriculture for food, experienced moderate to severe food insecurity (FAO, 2020). This level of food insecurity surpasses the national average, despite South Africa boasting national food security (Stats SA, 2019). Although the country is generally considered food secure, one in four individuals within households faces regular hunger (Stats SA, 2019). In response to food insecurity, households typically adopt a range of strategies, such as choosing less expensive food options, borrowing food or money, using credit, relying on friends or family members, decreasing portion sizes or the frequency of meals, and even requesting food from others (Cordero-Ahima, 2018). The University of Limpopo enrols a student population that consists of individuals from low socio-economics backgrounds, who may experience food insecurity due to their financial circumstances. The literature on food insecurity among university students in Limpopo institutions is limited, with no studies exploring daily experiences, coping mechanisms, or consequences. Therefore, the objective of this study was to explore the coping strategies of food-insecure students at the School of Health Care Sciences at the University of Limpopo.

Literature review

Four studies reported on food insecurity levels among students in South Africa between 2012 and 2019, prior to the onset of the COVID-19 pandemic. In 2012, Kassier & Veldman (2013) examined students at the University of KwaZulu Natal utilising the Household Food Insecurity Access Scale (HFIAS) and discovered that 12.5% of the students experienced food insecurity. Research conducted at the University of the Free State in 2013 revealed varying degrees of food insecurity affecting 64.5% of students when using a single-item measure, whereas 84.6% of students were identified as food insecure when the eight-item Household Food Security Survey Module (HFSSM) was used (Van den Berg & Raubenheimer 2015). Similarly, a 2019 study

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at Witwatersrand University indicated levels of food insecurity among students before the COVID-19 pandemic outbreak, reporting that 73% of students faced various degrees of food insecurity according to the HFIAS, with 13% demonstrating degrees of hunger on the basis of the Household Hunger Scale (Wagner et al., 2021). Consequently, on the basis of the results of these studies, it was anticipated that the COVID-19 pandemic and related restrictions would lead to an increased prevalence of food insecurity among students. United Nations Children's Fund (2021) reported a notable global rise in food insecurity from 2019 to 2020. Additionally, Van der Berg et al. (2022) noted that hunger rates in South Africa doubled during the early months of the COVID-19 pandemic. Likewise, Stats SA reported an increase in food insecurity among South Africans, rising from 17.3% in 2019 to 23.6% in 2020 (Stats SA, 2022). These heightened levels of food insecurity were closely linked to the financial means available to purchase food (Van der Berg et al., 2022) and the unemployment rate (Stats SA, 2022). In South Africa, research among students at public universities has shown food insecurity prevalence rates between 11% and 38.3% (Wagner et al., 2021). These prevalence rates differ from one institution to another and also varied in terms of the severity of food insecurity. For example, a study conducted at the University of KwaZulu-Natal by Sabi et al. (2020) revealed that more than 53% of students faced some type of food insecurity, ranging from moderate to severe levels. Research by van den Burg & Raubenheimer (2015) at the University of the Free State, revealed that as many as 60% of students suffer from food insecurity accompanied by hunger, whereas an additional 26% experience food insecurity without hunger. Students from low-income backgrounds, marginalised groups, and those living off campus face a heightened risk of food insecurity during their college years, underscoring the need for specific interventions (Martinez et al., 2017; Payne-Sturges et al., 2018) alongside the steep costs associated with university attendance (Cheong, 2021). Food insecurity, which is defined as: "… having limited or uncertain access to sufficient nutrition for a healthy lifestyle, represents a critical global public health concern …" (Coleman-Jensen et al., 2022). This issue can present in various forms, such as: insufficient food supply, inability to purchase more, anxiety about ordering meals, or having to settle for low-quality food due to financial constraints (Coleman-Jensen et al., 2022). Globally, university students report experiencing food insecurity at rates between 12.5% and 84%, with an average prevalence of 42% (Bruening et al., 2017). Compared with the general population, students in higher education are more susceptible to food insecurity (Martinez et al., 2017; Payne-Sturges et al., 2018), and currently, the National Students Financial Aid Scheme (NSFAS) focuses on covering tuition and housing expenses rather than food (Adeniyi & Durojaye, 2020).

Delayed NSFAS payments, grocery store distance, and expensive campus food options hinder students' access to nourishment, causing food insecurity affecting physical health and financial stability (Adeniyi & Durojaye, 2020). Food insecurity is linked to deteriorating mental health and academic outcomes, with students experiencing increased depression, anxiety, reduced focus, and lower academic performance (Radtke et al., 2024; Oh et al., 2022; Van Woerden et al., 2018, Bruening et al., 2016; Darling et al., 2015; Maroto et al., 2015), which can undermine higher education objectives. Many students lack nutrition knowledge, leading to unhealthy dietary practices and unsatisfactory eating behaviours (Makowske & Feinman, 2005). The development of food literacy skills can help students select healthier options, reduce expenses, and enhance food security (Mousa & Dardas, 2023; Begley et al., 2019; Vidgen & Gallegos, 2014; Worsley, 2002). Food insecurity leads to various coping strategies, such as temporarily changing food choices, borrowing funds, reducing portions, skipping meals, foraging, and resorting to less traditional methods such as begging or stealing (McKay et al., 2023; Watson et al., 2022). Students struggling with food resources face challenges such as maintaining a healthy diet, skipping meals, and going without food (Hanna, 2014). Some resort to dishonest tactics or take on additional employment (Farahbakhsh et al., 2015; Micevski et al., 2014; Nellum, 2015). However, juggling work and studies does not improve academic concentration or food security (Patton-Lopez et al., 2014).

Materials and methods

An explanatory sequential mixed methods research design was used in the larger study, with 237 participants. The study was conducted during the COVID-19 pandemic lockdown period between adjusted levels three and one from the 8th of August 2021 to the 12th of October 2021. It was divided into two interactive phases, with the initial quantitative phase from the 8th of August to the 30th of September 2021 and the subsequent qualitative phase from the 4th to 12th October 2021. However, for this article, only the qualitative approach is explained. Students identified as experiencing moderate and severe food insecurity on the basis of the quantitative component of the study were chosen for sampling. A total of thirty-eight students, who indicated "yes" on the food insecurity experience scale (FIES) questionnaire with raw scores ranging from seven to eight, were selected to participate in the interview session. Among the twenty-four students not interviewed, 14 had mobile phones that were consistently on voicemail, nine did not answer the call after an appointment was arranged, and one student had an incorrect mobile number. This left 14 purposefully selected students, who were categorised as having moderate (n=3) and severe (n=11) food insecurity. In this research, saturation was attained after eleven interviews; however, additional interviews were conducted to confirm that no new themes would arise. After fourteen interviews, repetitive data were collected. To evaluate food insecurity levels, the study employed the FIES, which consists of eight questions regarding experiences over the past year, justifying the inclusion of students from the 2nd to the 4th year. Nutritional knowledge was assessed via a multiple-choice questionnaire comprising 25 questions. Questions 1-5 were about food-based dietary guidelines, questions 6 -15 were about food groups, questions 16-20 were about nutrient contents, and questions 21-25 were about nutrient benefits and deficiencies. Nutritional knowledge was classified according to modified Bloom's cut-off points, where 80–100% indicated good knowledge, 60–79% moderate knowledge, and < 60% poor knowledge (AI-Salihy & Enad, 2017). The students chosen for the interviews were between the ages of 19 and 24.

The study was carried out at the University of Limpopo, which is situated in a semi-urban region of Mankweng, South Africa. Approval for this research was granted by the University of Limpopo's Research Ethics Committee (TREC/95/2020PG), while the School of Health Care Sciences permitted the investigation to be conducted within the optometry, nursing, and pharmacy departments. The participants were made aware of the study's objectives and methodologies, including aspects of confidentiality, and they provided signed consent. In August 2021, during adjusted alert level three the for COVID-19 pandemic, two preliminary interviews were carried out to assess the interview guide and confirm the participants' comprehension (Creswell & Hirose, 2019); nonetheless, the findings were not included in the study. Data collection for the qualitative phase took place from the 4th to the 12th of October 2021, coinciding with South Africa's COVID-19 pandemic lockdown at alert level one. Information was collected through detailed interviews via a self-developed semi-structured guide that included one main question and eight follow-up questions. Follow-up questions were utilised to prompt participants to provide more detailed responses on the subject (Povee & Roberts, 2015). The interviews were arranged at suitable times for the participants, primarily in the evenings after their classes. Owing to COVID-19 pandemic restrictions, the interviews were conducted individually over mobile phones, lasting between nine and twenty-one minutes each. A voice cube Android Call Recording (ACR) device on the mobile phone was utilised to record the interviews. Data collection persisted until saturation was achieved after the fourteen interviews (Hennink & Kaiser, 2021), and transcriptions were verified for precision. The objective of the study was to obtain detailed responses from individuals within the study population.

The demographic information was pre-coded, and the codes were entered into Microsoft Excel. The data were verified, and percentages were computed. All interviews were recorded via a voice cube ACR recorder using the mobile phone and were later transcribed verbatim by the researcher. During the interviews, the participants were designated P1 through P14. The transcriptions were analysed and coded. The study employed thematic analysis to evaluate the data. The data were coded manually via an inductive coding method. The analysis adhered to the six-phase framework of thematic analysis (Braun & Clarke, 2006; Kiger & Varpio, 2020) to discern primary themes and subthemes.

Results

Demographic characteristics of participants

Table 1: Demographic characteristics and food insecurity classification of participants.

	Interviewed participant	
	N	**Percentage**
Age (years)		
< 20	2	14.3%
20 - 24	12	85.7%
Gender		
Female	7	50%
Male	7	50%
Study level		
Level 2	7	50%
Level 3	4	29%
Level 4	3	21%
Tuition payment		
National student funding aid scheme (NSFAS)	9	64%
Parents/relatives	5	36%
Part-time job		
Yes	3	21%
No	11	79%
Drink alcohol		
Yes	8	57%
No	6	43%
Smoking		
Yes	3	21%
No	11	79%
Self-reported health status		
Good	8	57%
Fair	5	36%
Bad	1	7%
Food insecurity status		
Moderate	3	21%
Severe	11	79%
Nutrition knowledge		
Poor	4	29%
Moderate	9	64%
Good	1	7%
Living arrangements		
On-campus	7	50%
Off- campus	7	50%

A total of fourteen participants aged between 19 and 24 years from academic levels II, III, and IV were interviewed, as presented in Table 1, above.

Findings

Key findings from the primary study (N=237) revealed that 40% of the students experienced food insecurity, with 24% classified as moderately food insecure and 16% as severely food insecure; additionally, 28.3% reported experiencing food insecurity accompanied by hunger. There was no significant correlation between food security and factors such as age (P<0.70), gender (P<0.82), or academic level (P<0.40). No significant association was identified between the level of study of purposively chosen students facing food insecurity and their level of study. However, a notable correlation was identified between academic level and nutritional knowledge, with a P value of 0.02. Following the analysis of the data, several unique themes were identified and together with their sub-themes, they are presented in Table 2, below.

Table 2: Themes, sub-themes and endorsing quotations

Main themes	Sub-themes	Endorsing Quotations
Coping strategies	Food Support Systems	"I used to be affiliated to a church that has a soup kitchen, and then uh, after that uh during the day during the week, there was uh program on campus that was called meal a day, that uh students will apply to get food."
	Sharing	"We put money together kind of to buy bulk groceries. We just uh as a group we decided to buy only the basic staple foods, we buy uh a lot of maize meal 10 kg usually and we usually sometimes buy samp. We don't usually buy meat uh, we buy soya mince, beans, yeah, and we alternate between beans and soya mince and cabbage, sometimes spinach because it is easy to access".
	Planning and budgeting	"I each month draw a budget and plan how I am going to spend the funds that are allocated to me, for example, I can say I will take R1000 for grocery, and then R1000 for rent for example, and then the remaining I will use for my pocket money, or I can just buy other things such as clothes and other accessories".
	Application of destructive actions	"I was going to the library to study for maybe a lot of hours, so studying for maximum hours will require me to drink water more than I usually do. So, I will be at the library for that entire time for me not see food. So, for the days that I don't go to the library to study, and I am in my room I watch series on my PC yeah, that series will take my entire attention".
Health triangle effects	Social health	"I could say because I keep on worrying too much and then lock myself in my room and feel helpless and sorry for myself for not doing anything about the situation".
	Mental health	"And uh mentally is like I am always breaking down, I cannot cope because I have to deal with academics, now the expenses of food and it's a lot yeah".
	Physical health	Physically myself I am a person of like uh big body, so you lose weight obviously if you don't eat Yeah".
Nutrition knowledge	Training in Nutrition	"Yes, I think so, uh is something that I attended in-class training; it was part of the module and also offered by someone from the Dietitian Department".
	General knowledge	"Yeah, I have a bit of knowledge of what kind of food I should buy when I have enough money yeah".
Effects of hunger on academic performance	Negative effects	"It has affected my academic performance negatively because I wasn't like able to focus on some points because like I have to think about what I will eat and sometimes it becomes so difficult to go to class. Yes, I skipped classes sometimes".
	No effects	"Uh personally, it didn't affect me academically. Uh obviously I will be stressed but I have to study so that uh my kids will not experience what I am experiencing. So, I am positive and remain strong".
Factors contributing to lack of money to buy food	Home responsibilities	"On top of that uh usually the responsibilities at home that you must send the money at home that we usually get from NSFAS".
	Lack of budgeting skills	"Uh maybe not spending my money in the right way when the month starts when you have the money you buy lots of takeaways instead of real groceries, so the money gets finished or buying clothes that you didn't need yeah".
	Entertainment	"Personally, its entertainment, I like going out on the weekend so some of the things you do something and think later. Yeah, I smoke, so even smoking sometimes contributes and yes, I also drink".
	Late allocation of bursary funds	"If I am relying on bursary like they might not allocate those funds on time, for example maybe we were supposed to get that money around the 1st the beginning of the month and you find that they will allocate those funds around the 20th or two months after, see it means you have to find another way of surviving for those months yes".
Competing Expenses	Rental, personal, and unexpected expenses	"I stay off-campus so it will be rent and then you know like during the month uh something breaks, like a kettle, iron I must buy you know. I have to do my hair things like that, I have to buy toiletry you know; so is food and the landlord is increasing rent like crazy, it's difficult".
	Uniform and clothing	"Since we stay here the whole time, we want to be warm and get dressed and we don't have uh, support in terms of dressing up uniform, we go to a workplace professional setting, so you have to dress a certain way".

Theme 1: Coping strategies

Strategies for dealing with food insecurity, including sharing food, reducing portion sizes, buying cheap food, seeking assistance, skipping meals, borrowing money, and purchasing staple foods. Financial constraints limit fruit and vegetable consumption were revealed. The participants experienced financial instability, leading to smaller meals and a focus on survival over nutrition. Two participants mentioned that they engaged in off-campus work to generate funds for sustainability. One participant (P11) indicated that if his employer scheduled him for a full day of work, he would have to skip classes. Food insecurity disrupts work and academic responsibilities, thereby impacting the participants' capacity to concentrate on their studies. The other participant (P12) performed his part-time job during holiday breaks, which did not conflict with his class timetable.

Theme 2: Health triangle effects

The participants expressed feelings of stress, depression, shame, powerlessness, sadness, and emotional fatigue, along with a decline in their ability to concentrate and focus. Their circumstances deteriorated because of the COVID-19 pandemic, when the food assistance they received from the university was disrupted. The study highlights the negative impact of inadequate food and financial resources on students' body image, leading to unintentional weight loss, isolation, social withdrawal, discomfort, and even relationship endings due to communication difficulties.

Theme 3: Nutrition knowledge

In this study, some participants possessed a moderate understanding of nutrition but opted for inexpensive and unhealthy food options because of financial constraints. Despite their awareness of nutritional principles, implementing that knowledge in everyday life was challenging due to limited food access or insufficient funds to buy food. The participants shopped at large grocery stores, and those who were informed about nutrition had a good idea of what to include in their shopping lists. When they had adequate funds for groceries and aimed to achieve meal balance, knowledgeable participants incorporated carbohydrates, proteins, and occasionally fruits and vegetables into their diets.

Theme 4: Effects of hunger on academic performance

The academic performance of participants has been influenced by their hunger due to food insecurity. This effect occurred in two distinct ways, namely: some individuals reported negative feelings, such as difficulty focusing and concentrating in class, an inability to study for long periods, skipping classes, lacking the energy to engage with their study materials, and a decrease in attention during lessons. Others, however, were not impacted by their hunger; instead, they chose to ignore their hunger and maintained a facade of strength.

Theme 5: Factors contributing to lack of money to buy food

The participants identified various factors contributing to food insecurity, including the end of free meal support programs, household obligations, limited financial aid, budgeting difficulties, entertainment expenses, and bursary funding delays. The lack of financial support in the black community, especially among underprivileged families, can cause frustration and stress, hindering their ability to pay tuition and maintain a stable home environment. The participants reported impulsive spending on junk food, clothing, and alcohol-related activities, thus worsening financial difficulties … (National Student Financial Aid Scheme) students expressed dissatisfaction with late funding allocation and struggled to secure alternative assistance.

Theme 6: Competing expenses

The participants involved in the study mentioned various financial obligations that conflict with their food expenses. The expenses listed included: rent, personal costs, unforeseen bills, clothing, allowances for uniforms, and textbooks. Competing expenses were prioritised, and any leftover money was allocated for food purchases. It was consistently challenging to find a balance between these costs and food. Half of the participants opted to avoid staying on campus. Some participants aimed to maintain a professional appearance during their practical sessions, whereas others sought nice clothing for their own satisfaction.

Discussion

The study involved emerging adults from various study levels (II to IV), aged 19-24, with the majority funded by the NSFAS. The overall interviews revealed that participants cope with food insecurity through various methods as indicated in the results Friends were often the first point of contact before reaching out to family for support. This aligns with previous research that revealed that students in similar situations sought help from their social networks and attended events offering free meals on campus (Maynard et al., 2018; Nikolaus et al., 2019; Rudolph et al., 2018; Sklar et al., 2025). The results indicated that the primary reason that students were reluctant to request help was that they regarded hunger as a typical situation that did not require intervention; they preferred to be independent and felt ashamed to seek assistance. Research indicates that students in higher education often encounter feelings of shame and stigma when seeking food assistance (Sabi et al., 2019; Mukigi et al., 2018) and may hesitate to disclose their financial situation (Van den Berg & Raubenheimer, 2015). The challenges in obtaining support are linked to emotions such as shame, feelings of inadequacy, guilt, and the stigma that frequently accompany experiences of food insecurity (Blea et al., 2021; Jefrey et al., 2022; Meza et al., 2018). Other studies have shown that university students are hesitant to seek help because various barriers prevent them from accessing food aid (Fong et al., 2016; Mukigi et al., 2018). Factors such as affordability and convenience led participants to frequently select unhealthy junk food, along with easy access to fast food, despite potential health risks (Hagedorn et al., 2019; Bergeron et al., 2017; Deliens et al., 2013; EI Ansari et al., 2012). Financial constraints influenced the quality of food choices, causing participants to prioritise cost and opt for cheaper, processed options to stave off hunger. This trend aligns with previous research showing that food-insecure individuals often resort to lower-nutrition choices when faced with monetary difficulties (Mukigi et al., 2018; Bruening et al., 2012). The current study revealed that students experienced food insecurity, which was exacerbated by the suspension of university meal programs during the COVID-19 pandemic, halting the distribution of food parcels and meals to students from socio-economically disadvantaged backgrounds. Before the lockdown, restricted access to food through established channels

severely impacted their ability to pursue higher education, creating significant barriers to success (Council of Higher Education, 2024).

Some participants in this research chose to forgo meals to save money, frequently omitting breakfast despite its significance. Other participants mentioned practical reasons or their class schedules as factors for missing meals. Meal skipping is prevalent among young adults (Dlamini et al., 2022; Dubois et al., 2009). Research from the University of North Carolina revealed that a significant number of students tend to forgo breakfast (Debate et al., 2001). Skipping a meal leads to increased energy intake during the following meal; those who missed breakfast tended to consume more at lunch, whereas those who skipped lunch ingested more at dinner (Mohiuddin, 2019). Omitting meals negatively influences diet quality, as nutritious foods are more likely to be eaten during specific meals such as: dairy and whole grains at breakfast and vegetables and proteins at dinner, according to Zeballos & Todd, (2020). The participants residing in self-catering apartments exchanged basic food items to address food shortages, highlighting the importance of sharing, caring, and fostering trust within the community. These results are consistent with earlier studies (Henry, 2017; Manboard et al., 2021). Participants who possessed financial literacy effectively addressed food insecurity by developing budgets, choosing generic food brands, and looking for discounts. This finding supports the findings of Mukigi et al., (2018), who indicated that budgeting and financial skills are essential for managing scarce resources. The participants in this research employed maladaptive strategies such as consuming additional water to manage food insecurity, which helps mask hunger and alleviate hunger pangs, as evidenced by research conducted by Nikolaus et al. (2019) and Henry (2017). When participants were asked how their food quality was influenced by a shortage of funds for purchasing food, they indicated that their choices were restricted, leading them to consume whatever they could find. They felt compelled to buy what was affordable to prevent going to bed hungry and unable to select what they would truly like to eat. Dlamini et al. (2022) noted that selecting less favoured and more budget-friendly foods was the most frequently utilised coping strategy by individuals. These outcomes support earlier studies that discovered that food-insecure individuals tend to purchase cheaper processed foods and consume less when their financial resources are constrained (Mukigi et al., 2018; Bruening et al., 2012).

The participants noted that they sacrificed food quality for the sake of survival, a finding also corroborated by McArthur et al. (2018), who reported that food-insecure individuals often stretch their food supplies to address their circumstances. Despite their desire to eat more, participants found themselves unable to do so, leading to reduced meal frequency compared with what they anticipated. The results of this study align with previous research indicating that food-insecure students often diminish their food intake by decreasing portion sizes or eating fewer meals (Mukigi et al., 2018; Nikolaus et al., 2019). Typically, individuals aim for three meals a day along with occasional snacks (Nikolaus et al., 2019). This finding is consistent with previous research showing that students frequently lower their food intake by skipping meals or reducing portion sizes (Mukigi et al., 2018; Nikolaus et al., 2019). In this study, two participants engaged in off-campus work to promote sustainability efforts, whereas another participant balanced part-time employment during school breaks, illustrating the difficulties of juggling full-time jobs with academic responsibilities. Many students take on several jobs to cope with financial stress, which can lead to food insecurity and may hinder their ability to concentrate on their studies (Mukigi et al., 2018; Van den Berg & Raubenheimer, 2015).

In this study, financial limitations impeded participants from having moderate nutritional knowledge, affecting their capacity to obtain and afford healthier foods and prompting them to choose cheaper and less healthy alternatives. Some have developed unhealthy eating patterns on the basis of convenience and flavour instead of nutritional value (Brown et al., 2014). Some students reported experiencing negative emotions such as reduced focus, concentration, and energy; skipping classes; and having a diminished commitment to their studies, whereas others managed to overlook their hunger and appeared resilient. Mukigi et al. (2008) reported that hunger caused by food insecurity adversely affects students' academic outcomes, resulting in problems such as diminished focus, attention, and sleep issues; lower grades; and absenteeism. While hunger due to food insecurity can result in concentration lapses and tiredness (Letseka & Maile, 2008), this study indicated that some participants were able to endure and sustain their academic performance despite their hunger. The participants in the research utilised NSFAS funding for their education and nutrition, often distributing it among their families, which underscores the challenge of managing academic and familial financial responsibilities within black communities. A study at the University of KwaZulu-Natal reported that students in financial distress often redirect their allowances to support their families (Van den Berg & Raubenheimer, 2015), leading to insufficient financial aid for basic necessities such as food and housing. Food insecurity remains a significant issue, particularly for students receiving financial aid, because of family economic pressures (Letseka & Maile, 2008; Munro et al., 2013; Sabi et al., 2019). One participant noted that his food budget was wasted primarily on excessive spending for entertainment, smoking, and drinking, leading to financial overstretching during weekends. Similar conclusions were reached by McArthur et al. (2018), who reported that 21% of food-insecure newcomers allocate money to entertainment. Delays in the NSFAS fund disbursement pushed students to seek alternative forms of support, which adversely impacted their academic performance and contributed to food insecurity (Munro et al., 2013; Van den Berg & Raubenheimer, 2015). This observation was in line with a prior report (Adeniyi & Durojaye, 2020).

The participants cited rent, personal expenses, and unforeseen costs as factors affecting their food budget, causing a constant battle to balance these expenses, leading half to stay away from campus. Studies have shown a link between student food insecurity and housing status, with off-campus students at greater risk (Hughes et al., 2011; Gaines et al., 2014). Ukegbu et al. (2019) reported that marginal food insecurity is correlated with off-campus living.

Conclusion and recommendations

Students dealing with food insecurity resort to different coping tactics, such as skipping meals, reducing portion sizes, sharing food, and depending on others for financial support or food. Food insecurity adversely affects students' ability to acquire and apply nutrition knowledge and lowers their academic performance and overall quality of life. Various elements contribute to food insecurity, including insufficient NSFAS funding, late payments, poor budgeting skills, and competing responsibilities at home. The COVID-19 pandemic worsened food insecurity among students, underscoring the need for emergency food programs. Creating sustainable food programs for students, incorporating food banks and meal vouchers, offering financial literacy workshops and budgeting assistance to help students effectively manage their resources, and ensuring that the NSFAS provides timely and sufficient funding to cover living expenses are there for needed. Fostering nutrition education and the promotion of sustainable healthy eating habits among students should be encouraged, and emergency food support systems should be established to mitigate the impact of crises such as the COVID-19 pandemic. Further research is needed to explore the potential correlations among alcohol consumption, smoking, and food insecurity among a larger group of students. This study's limitations include its focus on three departments due to disruptions caused by COVID-19 pandemic, which may limit generalisability. Nevertheless, this is the first study in Limpopo Province, to employ an explanatory sequential approach to explore students lived experiences of food insecurity.

Acknowledgement

This study was funded by the University of Western Cape (Centre for Excellence).

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