

Students' vulnerability and perceptions of food insecurity at the university of KwaZulu-Natal

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Introduction and objective: Food insecurity (FI) is an emerging and alarming problem among university students. The problem particularly affects students from poor households. The University of KwaZulu-Natal (UKZN), South Africa is likely to be no exception to experiencing student FI as more than 50% of the students are poor. In 2012, UKZN implemented a Food Security Programme (FSP) to help address this emergent challenge. Until now, there is little literature exploring the prevalence and perceptions of the FI and interventions at UKZN. The study aimed to determine students' vulnerability to FI in terms of food access and meal frequencies, students' perceptions of FI and its effect on academic performance. The study also aimed to determine the students' awareness and utilisation of the FSP.

Methods: A total of 500 students registered at UKZN were invited to participate using a questionnaire survey and 91.2% ($n = 456$) questionnaires were completed and returned. Vulnerability to FI was explored through a nine-item measure, i.e. related to the Household Food Insecurity Access Scale (HFIAS); and a one-item measure of the self-reported eating habits by the students 'in normal circumstances'.

Results and conclusion: The findings suggest that FI remains a serious challenge among university students. Using the one-item measure, vulnerability to FI was evident in 53.1% of the students, of whom 44% experienced moderate levels of vulnerability; 9.2% were highly vulnerable. There was a significant correlation between the students' source of funding and being FI due to lack of resources ($r = 0.119$, $p = 0.012$). FI has a high potential to negatively affect students' academic outcomes. About 64.3% of the students indicated that hunger reduced their concentration and vigour such that 27.7% had missed classes. Social stigma was attached to FI; 30% of the students preferred anonymity regarding their FI status; 37.7% showed reluctance to utilise/recommend the FSP to anyone. Recommendations are made for institutional and national responses.

Keywords: educational outcomes, food aid, food insecurity vulnerability, student food poverty, social stigma

Introduction and research problem

The complex nature of food security has attracted diverse interpretations and various means of addressing it. One prominent perception of food security is the 1996 World Food Summit definition, which states: 'food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'.¹ From this perspective, food insecurity (FI) is the absence of food security or the lack of it. More so, the availability of adequate nutritious food at all times – and one's access to it – is critical, as it is an important socioeconomic factor. However, meeting food and nutritional needs remain a challenge at an individual and household level, even in relatively wealthy countries such as the USA where 12.7% of its population experienced FI in 2015.²

The problem of FI is more challenging in developing regions like sub-Saharan Africa where poverty levels are high.³ The 2015 Global report on FI documented that, in 2015, one person in four was undernourished in sub-Saharan Africa, the highest rate in the world.⁴ South Africa is no exception to this prevailing challenge as 13.8 million people were reportedly hungry in 2015.⁵

Recent literature indicates that FI is an emerging and alarming problem among students at institutions of higher learning (IHLs) in South Africa.^{6–8} The most affected students come from low-income households. The University of KwaZulu-Natal

(UKZN) is likely to be no exception to experiencing the problem, as nearly 50% of the students are from economically disadvantaged backgrounds.^{8,9} A study conducted between 2007 and 2010 highlighted that the UKZN's resource-poor students who are on financial aid are vulnerable to FI.⁷ Munro's study also reported the potential impact of FI on students' academic outcomes; this highlighted the need for an urgent food security intervention in some South African IHLs such that, in 2012, UKZN implemented the Food Security Programme (FSP).¹⁰ However, since the implementation of the FSP, the prevalence and perceptions of FI and interventions among students across UKZN have not been documented. Some researchers concur that the issue of FI at IHLs is under-researched in South Africa.^{6,7,11} The aim and objective of this study was to determine students' vulnerability to FI in terms of meal frequencies and food access, perceptions of FI and its effect on academic performance as evidenced at UKZN. The study also aimed to determine the students' awareness and utilisation of the UKZN FSP.

Conceptual framework

This study draws on Piaget's theory of Cognitive Learning, which offers a lens of understanding that knowledge is constructed by the learner rather than being transmitted by the educator.¹² The ability of a learner to construct knowledge (cognitive power) (evidenced by, for example, academic performance) is dependent on intrinsic and extrinsic factors. Hereditary factors and the physiological state and health of the individual are prime intrinsic factors. Yet the nutritional status is a prime determinant

of the physiological state and health of an individual. Thus, given the potential correlation between FI and academic performance, it is reasoned that if students' primary need for food security is not met, other factors related to their academic performance could be jeopardised. Food security or FI and academic performance can also be conceptualised according to Maslow's Hierarchy of Needs model whereby food security meets the basic physiological need for food, whilst FI would deprive that need. The assumption is that, apart from having serious negative effects on human physiology and health, FI may have a negative impact on the socio-psychological state of the individual and lower his/her self-esteem, actualisation and well-being. Ultimately, this would impoverish his/her academic performance.¹³ Hence, the learner may become secretive regarding his/her FI status to preserve self-esteem, which in turn would restrict him/her from accessing food security interventions. Thus, the relationships between food security or insecurity, food security interventions, cognitive power, and self-esteem and actualisation may be complex and paradoxical.

Ethics

The following authorisation was obtained: ethical clearance permission (protocol approval number; HSS/137/0515D) from the Human Social Science Ethics Committee, UKZN. Student participation was voluntary; they were invited to sign a written consent form as evidence that they had freely participated in the research. Respondents were informed about the purpose of the study and the reason for which they were selected.

Research methodology

A quantitative study was conducted using a hard-copy questionnaire, which aimed to determine students' FI, the level of awareness regarding the food security interventions in the university and their perceptions of the interventions. The potential impact of FI on students' academic outcomes and their well-being were contextualised through Piaget's theory of Cognitive Learning and Maslow's Hierarchy of Needs model.^{12,13}

Context of the study

The UKZN, a South African public university, is one of the leading IHLs in Africa. The university is organised around five campuses and four colleges in KwaZulu-Natal province. Based on the 2015 undergraduate student enrolment profile, about 17 677 students were from resource-poor communities/households, which are characterised by poverty and dependence on social welfare pensions and grants (quintile 1 and 2 high schools)¹⁴ of whom 2 763 were from very poor backgrounds (quintile 1 high schools). Many of the students were not only from an economically disadvantaged background but also comprised the first generation in their families to access higher education opportunities.⁹ UKZN offers several on- and off-campus residential facilities, all of which are self-catering. An internal university report highlighted the increasing level of student food poverty at the institution, resulting in the implementation of the FSP in 2012. Its primary goal is to provide both counselling and food support (food vouchers or hampers) to students in need (as targeted beneficiaries) who are identified by the academic staff, members of the Student Representative Council, or any concerned stakeholder. The FSP also aims to create awareness concerning the challenges of FI and the implications for students' academic outcomes. However, as highlighted earlier, the current prevalence of FI, the awareness level and perceptions of the FSP among the students have not been known.

Methods

Study population and sampling

Participants were recruited on the five campuses to target 1% ($n = 500$) of full-time students from the sampling frame of 43 283 registered students in 2015. The 1% was arrived at by using two sampling techniques, i.e. oversampling and quota sampling. Oversampling is a process of sampling a population with a sampling frequency higher than the actual rate. Oversampling is useful in an imbalanced data set; quota samplings are useful when the survey accuracy is not a priority.¹⁵ Using the oversampling technique, the initial target was 10% ($n = 5 000$) of the sample frame (100%, $n = 43 283$ registered students). Later, a quota sampling was drawn from the 10% ($n = 5 000$) to target 1% ($n = 500$) students from the total student population. Heterogeneous purposive sampling was randomly selected at a strategic mix of geographical recruitment sites (cafeteria, libraries and computer laboratories) to incorporate students from UKZN's four colleges at five campuses. Each campus received 100 hard-copy questionnaires. During the research, respondents were informed about the purpose of the study and the reasons for which they were selected were explained.

Measures and procedure

The questionnaire included students' demographics, information on vulnerability to FI in terms of meal frequencies and food access, students' perceptions of FI and its effect on academic performance, and students' awareness and utilisation of the FSP. The questionnaire had single items, 'yes' and 'no' responses, and multiple items on a Likert scale of 3 and 5 items. To estimate vulnerability to FI within the student population, questions were formulated (see Table 2) using the HFIAS nine-item measure provided by the Food and Nutrition Technical Assistance Project (FANTA)¹⁶ and a measure of self-reported eating habits. The respondents completed a questionnaire and returned it directly to the researcher. Respondents were requested to sit apart from each other to ensure confidentiality. The questionnaire took approximately 13 minutes to complete. The completed questionnaires ($n = 456$) translated into a high response rate (91.2%) of the sampled participants.

Data analyses

To enhance reliability, the data were pilot-tested to ensure that the respondents would be in a position to comprehend all items therein and to minimise the risk of misinterpretation of concepts and terminologies. Data from the questionnaire were analysed quantitatively using the IBM Statistical Package for the Social Sciences, version 24 software (IB Corp, Armonk, NY, USA). Frequencies and percentages of categories were determined and represented in tables or figures as appropriate. Cross-tabulations, a chi-square test and Spearman's rho (r) correlations were performed to determine the categorical relationship in most variables, the statistical difference and the association between variables respectively. The statistical analyses and significance were determined at $p < 0.05$ and $p < 0.01$.

Results

Table 1 shows that the participants represented the general student population but with overrepresentation of undergraduate students and local students. In South Africa, the age at which compulsory school attendance starts is seven years. A child attends school for 12 years.¹⁷ Therefore, the expected university entry age is 19 years and the finishing age group should be 21 years for an undergraduate degree programme. However,

Table 1: Demographic attributes of the surveyed participants

Variable description	Gender					Total (%)
	(n)	Female (%)	(n)	Male (%)	(n = 456)	
All participants	337	52	219	48	453	100
Age:						
≤ 21	169	37.3	134	29.6	303	66.9
22–25	60	13.3	52	11.5	112	24.8
26–30	31	0.4	24	5.2	31	6.8
31–35	0	0.0	4	0.8	4	0.8
> 35	0	0.0	3	0.6	3	0.6
Nationality:						
International	4	0.9	16	3.5	20	4.4
South African	232	51.1	203	44.6	435	95.6
College of study:						
Agriculture, Engineering & Science	36	7.9	35	7.7	71	15.7
Law and management	43	9.5	40	8.3	83	18.3
Humanities	120	26.5	86	19.0	206	45.5
Health sciences	37	8.2	56	12.4	93	20.5
Level of study:						
Undergraduate	216	47.5	196	43.1	412	90.5
Postgraduate	21	4.6	22	4.8	43	9.5
Funding:						
NSFAS	52	11.4	44	9.6	96	21.1
Student loan	12	32.6	18	3.9	30	6.6
Bursary	43	9.4	50	11.0	93	20.4
NRF	25	5.5	21	4.6	46	10.1
Self-sponsored	105	23.0	86	18.9	191	41.0

Notes: NRF = National Research Foundation, a higher education research and development scholarship by a South African government agency.

NSFAS = National Student Financial Aid Scheme, an agency of the South African Department of Higher Education and Training that provides a student loan and bursary scheme to address financial burdens of IHL students.

results in Table 1 reveal that more than 30% of the students were over 21 years of age, suggesting that the students were not completing their studies in 'standard' time. About 41% ($n = 191$) of students or families were directly or indirectly responsible for the tuition fees and subsistence, as only 21% ($n = 96$) and 20% ($n = 93$) of the students' studies were funded through NSFAS and bursaries respectively.

Using nine-item generic occurrence questions for measuring food access related conditions in households in the past 30 days (Table 2), respondents were classified as being vulnerable to FI if they answered 'yes' to any of the items (unable to eat preferred meals or sacrificed quality due to lack of resources).¹⁶ Respondents were also classified as being increasingly vulnerable to FI if they answered 'yes' to any of the severe conditions (running out of food due to lack of resources, going to bed hungry, or going the whole day or whole night without eating). Table 2 shows that by means of cross-tabulations vulnerability to severe FI was more prevalent within the NSFAS-sponsored students ($n = 96$) as 48.1% of these students had no food due to a lack of resources while 39.6% of them went to bed hungry and nearly 28% of these stayed hungry for the whole day and night without food, due to food insufficiency. Spearman's correlation analysis was performed to determine an association between FI and funding among the participants. Table 2 shows that there was a significant correlation between the type of funding and the students who indicated that they were worried that they would not have enough food ($r = 0.108$, $p = 0.022$). Additionally, there was a significant correlation between funding and not having food to eat due to lack of

resources ($r = 0.119$, $p = 0.012$). On the other hand, no association was found between funding and the rest of the variables.

To determine vulnerability to FI by means of meal frequencies, an individual student was classified as being 'vulnerable to FI' if he/she ticked one of the following on the questionnaire (Table 2): breakfast and lunch only (BL); lunch and supper only (LS); breakfast and supper only (BS). An individual was classified as being 'highly vulnerable to FI' when he/she ticked 'one meal per day'. Table 2 shows that about 53% ($n = 243$) of the students were vulnerable to FI as they ate less than three meals a day under normal circumstances, of whom 44% ($n = 194$) experienced moderate levels of vulnerability (ate two meals per day); 9.2% were highly vulnerable (ate one meal per day). By means of cross-tabulations, students who were funded through NSFAS and student loans (12.3% and 13.8% respectively) were more vulnerable to FI compared with their self-/family-sponsored counterparts (8.0%). Additionally, many students, 40.7% and 39.3% sponsored by NSFAS and 'student loan', respectively, perceived themselves to be FI compared with the students who had other means of sponsorship.

Food insecurity is often underestimated as a psychological and/or emotional stressor that could cause or affect certain behaviours.¹⁸ Therefore, there was a need to understand students' experiences and their perceptions of the likely impact of FI on their academic activities. Table 3 shows that the negative effects of FI were reported by the majority (64.6%, $n = 285$) who indicated that hunger affected their concentration and/or their effectiveness as students, while 27.7% ($n = 122$) of them

Table 2: Vulnerability to and perceptions of food insecurity status

Questions	Frequency (n)	Gender (%)			Funding (%)						Study level (%)		
		Male	Female	(r)	NSFAS	Student loan	Bursary	NRF	Self- sponsored	(r)	UG	PG	(r)
In the past 4 weeks, I:													
Was worried that I would not have enough food	450	57.2	49.6	0.076	71.6	43.3	46.2	44.4	51.1	0.108*	53.9	47.6	0.039
Was not able to eat preferred foods due to lack of resources	450	60.5	57.2	0.033	72.6	46.7	51.1	58.0	58.8	0.070	59.8	50.0	0.058
Ate a limited variety of foods due to lack of resources	449	62.3	54.5	0.080	69.5	73.3	48.4	51.1	56.7	0.086	58.2	57.1	0.006
Ate unwanted food due to lack of resources	449	56.7	51.5	0.053	68.4	56.7	46.2	40.0	53.5	0.085	54.1	52.4	0.010
Ate smaller meal because there was not enough food	449	53.5	46.4	0.071	62.1	50.0	46.2	31.1	49.7	0.074	50.9	40.5	0.060
Ate fewer meals a day due to lack of enough food	442	55.7	44.2	0.115*	65.6	50.0	41.1	37.0	49.2	0.085	50.2	45.2	0.029
Had no food to eat due to lack of resources to get food	443	35.4	29.3	0.065	48.1	36.7	32.2	32.6	26.7	0.119*	33.4	21.4	0.075
Slept hungry at night because there was not enough food	444	29.9	25.8	0.039	39.6	20.0	20.9	26.1	26.2	0.069	27.9	23.8	0.027
Was hungry for whole day and night because there was not enough food	444	22.2	22.3	-0.002	27.5	20.0	20.9	26.1	19.8	0.056	22.4	21.4	0.007
Meals per day:													
BLS		47.6	46.3		42.2	34.5	52.2	47.8	48.4		45.7	59.5	
BL	441	2.9	3.0	-0.003	3.3	0.0	4.4	2.2	2.7	-0.082	2.3	9.5	-0.105*
LS		16.2	17.3		12.2	13.8	14.4	15.2	21.0		17.1	14.3	
BS		22.4	26.0		30.0	37.9	22.2	26.1	19.9		25.6	9.5	
One meal		11.0	7.4		12.2	13.8	6.7	8.7	8.1		9.3	7.1	
Do you regard yourself as food insecure?	433	39.0	33.5	0.058	40.7	39.3	30.4	28.3	38.4	0.003	35.3	45.2	-0.061

Notes: *Correlation is significant at 0.05 (two-tailed). FI = food insecurity; r = Spearman's correlation coefficient. Notes: UG = undergraduate, PG = postgraduate.

Table 3: Perceived effects of FI on academic performance

Statement/response	Study level				Gender				Total			
	UG		PG		Total		M		F		Total	
	(n)	%	(n)	%	(n)	(%)	(n)	%	(n)	%	(n)	(%)
Hunger affects my concentration/effectiveness as a student												
Strongly agree	164	37.2	16	3.6	180	40.8	81	18.3	99	22.4	180	40.7
Agree	96	21.8	9	2.0	105	23.8	60	13.6	45	10.2	105	23.8
Neutral	53	12.0	5	1.1	58	13.2	28	6.3	30	6.8	58	13.1
Disagree	42	9.5	7	1.6	49	11.1	23	5.2	26	5.9	49	11.1
Strongly disagree	43	9.8	6	1.4	49	11.1	22	5.0	28	6.3	50	11.3
I have missed classes because I did not have enough food to eat												
Strongly agree	58	13.2	4	0.9	64	14.1	30	6.8	32	7.3	62	14.1
Agree	55	12.5	5	1.1	60	13.6	32	7.3	28	6.3	60	13.6
Neutral	57	13.0	3	0.7	60	13.6	32	7.3	29	6.6	61	13.8
Disagree	73	16.6	10	2.3	83	18.9	37	8.4	46	10.4	83	18.8
Strongly disagree	154	35.0	21	4.8	175	39.8	82	18.6	93	21.1	175	39.7

Notes: UG = undergraduate; PG = postgraduate; M = male; F = female.

reported that they had missed classes because they did not have enough food to eat. However, within the study level category, the incidence of missing classes was reportedly high among undergraduate students (25.7%, $n = 113$) compared with postgraduate students (2%, $n = 9$).

Regarding the awareness level of the institutional food security interventions (FSP), a large majority of the students (90.2%, $n = 369$) lacked knowledge of the programme's existence; Figure 1 shows that 37.1% ($n = 153$) of them showed reluctance to utilise it or recommend it to a fellow student. Additionally, only 10.6% of the students had knowledge of other similar food interventions in the IHL.

Using Spearman's correlations, Table 4 results suggest that there was a positive significant relationship between male and female students regarding their perceptions of FI and self-esteem, and with regard to 'sleeping without food rather than receiving food aid' respectively ($r = 0.123$; $r = 0.104$). Of note is that, while the majority (70%, $n = 342$; 62%, $n = 352$) perceived FI as a deprivation of human rights and as an issue that affects self-esteem, social stigma was attached to food aid. Likewise, 38% ($n = 173$) found it embarrassing to accept free food while 42.5% ($n = 194$) of them found it embarrassing to be known for not having the means to acquire food as a student.

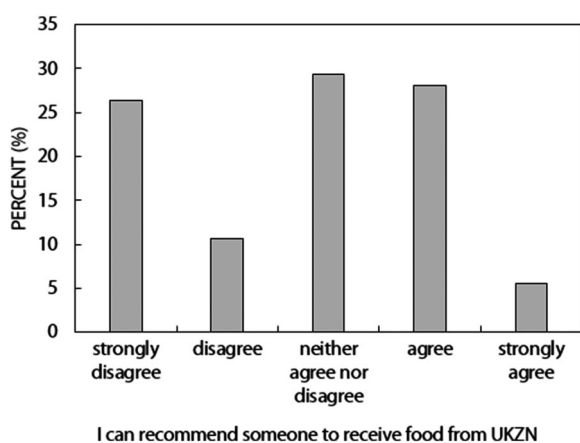


Figure 1: Students' perceptions of food security interventions.

Additionally, 46.6% ($n = 208$) of them preferred anonymity rather than disclosure of their poor economic background. Another notable factor arising from the findings in Table 4 is that FI was associated with some negative social behaviour, as there appeared to be a feeling of shame in resorting to food aid and embracing unacceptable means to obtain food resources. Such students preferred to steal food (11.2%, $n = 50$) or sleep on an empty stomach (13.4%, $n = 60$) rather than receive food aid.

Discussion

Vulnerability to FI and complexities of FI status

Results show that student FI is a challenge in South Africa. However, similar FI trends among students attending higher education have been reported in some studies. In Canada, a study reported a positive correlation between FI and reliance on financial aid.¹⁴ In South Africa, a study reported that students who were on financial aid risked being FI compared with those who had other means of financing their studies.⁷ This reason could be based on the notion that most students on financial aid are from a resource-poor background and are thus at risk of underperforming academically due to poverty-related challenges such as FI.^{6,19} In the current study, more undergraduates perceived themselves to be FI compared with their postgraduate counterparts. Some researchers have documented the likelihood of undergraduate students, especially the first generation accessing higher education, being vulnerable to FI due to poverty-related burdens that they carry from their families/backgrounds.^{6,7,19,20} However, of interest is that, largely, funding seemed to determine the students' food security or insecurity in the university as evident in Table 3 and Table 4. Previous studies reported that even when the NSFAS is granted to financially needy students in South Africa it is inadequate, as other needs such as food security could be unmet.¹⁹

Perceived effects of FI on academic performance and perceptions of the FSP

In part, results displayed in Table 3 reflect the relationship between FI and cognitive issues regarding the severely vulnerable FI students who were unable to attend class and/or to concentrate in class due to compromised cognitive power caused by hunger. In addition, the results suggest that an element of

Table 4: Students' perceptions: FI stigma and negative social behaviour

Statement	Frequency (n = 456) (n)	Gender								Correlations (r)				
		Male (%)				Female (%)								
		Yes (n)	%	No (n)	%	Sometimes (n)	%	Yes (n)	%		No (n)	%	Sometimes (n)	%
I am embarrassed to ask for food aid	454	72	32.9	99	45.2	48	21.9	65	27.7	119	50.6	51	21.7	0.037
I am embarrassed to accept free food	450	38	22.2	129	64.4	39	13.6	57	24.4	138	59.0	39	16.7	0.007
I am embarrassed to reveal that I cannot afford enough food	450	59	27.3	123	56.9	34	15.7	61	26.7	133	56.9	40	16.4	0.02
It is shameful to reveal my poor economic background	446	68	30.0	113	53.4	34	16.6	66	28.6	125	54.1	40	17.3	0.034
Having no food compromises one's dignity	447	87	38.7	98	45.9	29	15.4	86	36.9	107	45.9	40	17.2	0.051
I would rather sleep without food than receive food aid	449	25	9.4	186	86.6	5	4.0	17	7.3	203	87.1	13	5.6	0.104*
I will rather steal food than receive food aid.	448	24	8.7	184	88.8	6	2.5	15	6.4	398	91.5	5	2.1	0.065
Lack of food diminishes self-esteem	445	149	69.6	29	13.6	36	16.8	27	55.0	93	27.7	76	17.3	0.123**
Lack of food is deprivation of the right to food	443	140	70.0	50	22.8	22	7.2	170	73.6	51	22.1	10	4.3	-0.095

Notes: *, **Correlation is significant at 0.05, 0.01 (two-tailed) respectively.

Maslow's Hierarchy of Human Needs largely fits into this context. Maslow's Theory of Human Motivation and Hierarchy of Needs model portrays the individual as an integrated organism and classifies all human endeavours as an attempt to gratify one of the five needs, which are physiological, safety, belongingness, love and esteem, and self-actualisation.²¹ The theory facilitates understanding of human behaviour rather than a rigid prescription of governing all human activities. Additionally, a recent study examined an association between the fulfilment of human needs (hypothesised by Maslow) and self-well-being across diverse regions of the world and revealed that, often, people achieve basic needs before other needs.²² Therefore, depriving a student of physiological need (food and nutrition security) could affect his/her academic activities, which means he/she is likely to abscond from them, compromising his/her intellectual potential.

Furthermore, FI was represented by food impoverishment or the lack of a physiological need, which was linked to the cognitive power and esteem needs of a student, consequently demoralising a student from attending to his or her academic activity and concentrating in class. According to the Hierarchy of Needs Model, physiological needs can threaten the survival of an individual if not gratified. Hence, a severely food-insecure student becomes vulnerable to low self-esteem needs as he or she will lack motivation for study as reflected in Table 4. Thus, the student is bound to suffer from physiological disorders that can be manifested by hunger, depression and deprivation of esteem needs. Such a student will eventually underperform academically and risks losing his or her academic qualification. Jean Piaget's perception of Cognitive Learning in Human Behaviour is also appropriate to this context.¹² For instance, the students' cognitive power was dependent on their physiological state and health. Therefore, food and nutritional status was a prime determinant of the students' psychological state, which impoverished their academic potential as reflected by the findings in Table 3.

Previous research has reported an association between poverty-related issues and psychological distress. A Canadian study affirmed that low economic status can lead to depression and, in turn, can affect cognitive stability and functionality (limiting the learning and brain memory structures), and ultimately behaviour.²³ A similar study supports the view that poverty-stricken circumstances can affect perceptual and cognitive processes.²⁴ Thus, in part, the surveyed students reflect a view that FI negatively affects students' academic activities such as class attendance, which can compromise academic performance and educational outcomes.

Perceptions of food aid and social stigma

The negative perceptions of poverty, food aid and FI reflected here are evidence that FI is perceived as a 'shameful secret' among students in IHLs. Moreover, issues related to FI and social stigma have been documented in some studies. A study at the University of the Free State, an institution with nearly 60% of FI students, reported that some students were reluctant to apply for the 'No Student Hungry Programme', a university food security intervention that they thought would expose their poor economic status on campus and trigger stigmatisation.⁶ Seemingly, the FI students felt that because they fall into the disadvantaged category (poverty) they would not want to be stereotyped as food aid dependants, and preferred to keep quiet about it. It is also argued that negative perceptions

could be attributed to the name of the programme, 'No Student Hungry Programme', which appears to demean the dignity of the targeted beneficiaries who are poor. In the USA, Shreeves²⁵ wrote about FI and referred to an article titled 'Among Dorms and Dining Halls, Hidden Hunger', which reported that an increasing number of university students frequently attended class on an empty stomach, but did not perceive their lack of food as a problem. It was observed that, even after the campus 'Food Closet' project was launched to address student FI at the University of California, students seemed to be embarrassed to receive food aid.

These results provide added weight to previous studies^{6,26,27} conducted in IHLs, which reported that students who are under financial pressure resort to coping strategies such as food theft to avoid the negative effects of FI. The reported incidents of food theft also illustrate the importance of recognising FI as a socioeconomic problem that needs to be addressed adequately at South African IHLs. Although food aid is seemingly associated with stigmatisation, the opposite could be a reality. Research in the United Kingdom on clients' perceptions concerning a community food bank revealed that 81% of the respondents reported that accessing food from the community food bank had a significant positive impact, particularly on their mental and psychological status.²⁸ The beneficiaries indicated that food handouts helped them reduce stress-related problems such as anxiety about where their next meal would come from. This illustrates the need for awareness of the importance of ensuring food support programmes in South African IHLs with high levels of FI incidence among students.

Study limitations

In this study, postgraduate students are greatly underrepresented mainly due to the nature of the academic programmes offered at UKZN, which are mostly at undergraduate level and few at postgraduate level. In 2015, of the 43 000 registered students, a large majority (about 33 000) were undergraduates. Additionally, some limitations of this study must be considered, particularly when interpreting the findings from the HFIAS-related questions (see Table 2). In the study, the indicators of FI present only the percentage of individual students who responded affirmatively to each occurrence question without the frequency of the experience. The questions regarding students' FI were designed to apply to the individual student and not a household. However, an additional item related to vulnerability to FI was included to determine the self-reported eating habits by the students 'in normal circumstances' (see Table 2). This method was based on the assumption that eating less than three meals a day results in insufficient food/calorie intake and that there are negative health consequences for the individual.

Ideally, measuring FI at an international and national level is quite subjective such that there is no specific standard used as a benchmark.^{29,30} Likewise, several proponents have introduced multiple ways of measuring the phenomenon, especially at the household level. The version 3 HFIAS was formulated by the FANTA of the United States Agency for International Development (USAID) in 2007. It is argued that the HFIAS is a simpler measuring tool for food access indicators of household food security or FI in research.¹⁶ Nevertheless, measuring food security at any level including the individual level is an important way of determining the factors that may have caused FI or may affect food security in the future, and to decide on the appropriate interventions.

Summary and conclusion

The study recommends further empirical research on the scope of FI in South African IHLs (which is currently lacking) and the perceptions associated with this complex phenomenon. Additionally, while it is acknowledged that South Africa is a developing country with a history of racialised policies, which disadvantaged the majority, particularly people of African descent, it has sufficient resources and enabling policies to facilitate both access to higher education and a wealth of student retention as per Act 108 of the 1996 National Constitution. Additionally, quality education can be achieved when students at the institutions are well cared for, including in areas of food security. Moreover, given the potential correlation between FI and poor academic outcomes, socioeconomic factors like food security should be considered when analysing students' needs.

The study also suggests the need for social change to combat stigmatisation associated with FI and food aid. Improved institutional strategies, such as counselling and awareness campaigns for FSP, are needed to eliminate the stereotype attached to poverty and FI among students at UKZN and other IHLs facing similar challenges in South Africa.

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