

## COMPLEXITIES OF FOOD INSECURITY AT THE UNIVERSITY OF KWAZULU-NATAL, SOUTH AFRICA: A REVIEW

Stella C Sabi\*, Muthulisi Siwela, Unathi Kolanisi & Denver K Naidoo

### ABSTRACT

Household food insecurity (FI) is a complex phenomenon challenging most sub-Saharan African countries and despite South African economic growth and decreased poverty levels, some households are still vulnerable to FI. The 2012 report by Statistics South Africa revealed that an average of 20% of households were still vulnerable to FI, the majority being the poor. Subsequently, FI could indirectly link to high dropout rates of students at Institutions of Higher Learning (IHLs) in South Africa. This threatens the country's economic advancement and transformation, as students' academic performance, degree completion and entry into the labour market are compromised. Post-2000, FI prevalence among students in South African IHLs has been studied, but there is still a knowledge gap with regard to how the phenomenon is perceived by IHLs. This study investigates the FI issues amongst students in IHLs using secondary data. Perceptions about FI among tertiary students in South Africa, particularly the University of KwaZulu-Natal, were reviewed based on the conceptual and theoretical lenses of 1) Maslow's theory of self-actualisation; 2) the relationship between nutrition and cognitive power, and 3) the concept of food poverty and stigmatisation. The review shows that FI and academic underperformance in South African IHLs are challenging, complex and paradoxical. Recommendations for institutional responses are made.

### — *Dr SC Sabi\**

School of Agricultural, Earth and Environmental Sciences  
University of KwaZulu-Natal, Private Bag X01,  
Scottsville  
3209  
Pietermaritzburg  
South Africa  
Tel: +27 (0)33 260 6421  
Email: Sabis@ukzn.ac.za

\*Corresponding author

### — *Prof M Siwela*

School of Agricultural, Earth and Environmental Sciences  
University of KwaZulu-Natal, Private Bag X01,  
Scottsville  
3209  
Pietermaritzburg  
South Africa  
Tel: +27 (0) 33 260 5459  
Email: Siwelam@ukzn.ac.za

### — *Prof U Kolanisi*

Department of Consumer Sciences  
University of Zululand  
Private Bag X100  
Kwadlangezwa  
3886  
South Africa  
Tel: +27 (0)35 902 6003  
Email: kolanisiu@unizulu.ac.za

### — *Mr DK Naidoo*

Department of Consumer Sciences  
University of Zululand  
Private Bag X100  
Kwadlangezwa  
3886  
South Africa  
Tel: +27 (0) 33 260 5144  
Email: NaidooK12@ukzn.ac.za

### ARTICLE INFO

#### Article history

May 2017  
July 2017  
January 2018

#### Keywords

academic underperformance, poverty, social stigma, student hunger, self-esteem

## INTRODUCTION AND RESEARCH PROBLEM

Food insecurity (FI) has been identified as an emerging problem among university students including those in rich countries such as Australia (Hughes et al. 2011), Canada (Nugent 2011), and the United States of America (USA) (Maroto et al. 2015). At these institutions, FI among students is reportedly higher than the general population. In Africa, South Africa (SA), is no exception to the problem of FI. Rates of food insecurity vary across countries in sub-Saharan Africa, in South Africa (SA), 20% of households experience FI. (Statistics South Africa, 2012). The 2017 report by Statistic South Africa shows that food poverty had increased by 2,8 million in headcount, from 11 million in 2011 to 13,8 million in 2015 (Statistics South Africa 2017). The most vulnerable were low income households. Most studies indicate that household FI and socio-economic burdens affect students in South African IHLs, especially those who come from low income households (Letseka & Maile 2008; Gwacela 2013; Kassier & Veldman 2013; Gwacela 2013; Van den Berg & Raubenheimer 2015).

The University of KwaZulu-Natal (UKZN) in SA counts among the most affected by FI complexities, given that 53% of its students come from economically disadvantaged backgrounds (Kassier & Veldman 2013). A study by Munro et al. (2013) conducted between 2007 and 2010 confirmed that the UKZN, resource-poor students who are on financial aid were vulnerable to FI. The study also reported the potential impact of FI on the students' educational outcome such that by 2012 the UKZN saw the need to implement a FSP to address the problem. Despite the reported high prevalence of FI among students and the subsequent implementation of FI intervention, there are few studies that examine perceptions of FI. Munro et al. (2013), Van den Berg & Raubenheimer (2015) concur that the issue of FI at IHLs is under-researched in SA. The objective of this study is therefore to review the subject of FI among students in IHLs, the potential impact on students' educational outcomes and economic prospects. The study will focus on UKZN, South Africa. Taking into account that the issue of FI at IHLs is under-researched in most developing countries like SA, the literature review will draw many examples from documented research findings conducted

outside SA and most relevant to the topic in discourse.

## FOOD INSECURITY IN SOUTH AFRICAN IHLs

The South African government plays a critical role in addressing the challenges of FI as it poses a threat to health, active life and the well-being of the citizens. This commitment is articulated in the Medium Term Strategic Framework for 2009-2014 (The Presidency, Republic of South Africa 2009) and resonates with the Bill of Rights and Section 26 and 27 of the 1996 Constitution (Republic of South Africa 1996) which stipulates access to sufficient food as a basic human right. In the 2010-2011 financial year, the South African government rated food security as one of the key priorities, as reflected in its millennium development goal aimed at halving the proportion of hunger and poverty levels in the country over the period 1990-2015 (Department of Agriculture, Forestry and Fisheries-DAFF 2011). The realisation of food as a basic human right resulted in the establishment of nutrition programmes such as the National School Nutritional Programme (NSNP). The NSNP is part of the National Policy on Food and Nutrition Security that provides a broad framework for the reorientation of food security interventions (DAFF 2014) (Department of Basic Education-DBE 2009). The NSNP involves several government departments, including the DBE, and Health. It is aimed at alleviating short-term hunger; enhancing the learners' active learning capacity; and addressing micro-nutrient deficiencies (DBE 2009). The targeted beneficiaries of the programme are children attending public schools coming from economically disadvantaged backgrounds. The NSNP has yielded positive results, as provisions of free nutritious meals at school have increased the school attendance and enhanced the concentration of learners (DBE 2009; Rendall-Mkosi 2013).

However, the NSNP is limited to school-going children and IHLs are not included. Ideally, the government through a student loan and bursary scheme called the National Student Financial Aid Scheme (NSFAS) addresses financial burdens of IHLs students. NSFAS is an agency of the South African Department of Higher Education and Training, that is governed by Act No. 56 of 1999 (Department of Higher Education

and Training-DHET 2014). Students qualify for a loan or bursary based on passing the NSFAS Means Test, which assesses their family's ability to pay something towards their studies. While NSFAS has been instrumental in providing financial aid to students from poor and working class families, the aid is primarily directed to students who are in need of money to pay for their education including accommodation and some stipend depending on the institution. In cases where stipends are provided, students have the autonomy to manage their own finances.

The NSFAS is usually inadequate to cover other important needs, especially the stipend for food (Letseka 2007). This leaves students with the difficulty of finding options to close the financial gap, for example owing to the rising unemployment levels in the country, some students opt for the few part-time jobs available (Letseka & Maile 2008). These financial gaps are among the critical factors that determine whether the student succeeds academically or drops out from university.

The government is rigorously creating opportunities, such as increasing students' access to IHLs, which are the universities and Technical Vocational Education and Training (TVET) colleges. These institutions are perceived as primary sites for 'advancing the public good by sustaining an informed and active citizenry, reducing economic marginalisation, advancing science and innovation and ensuring quality progress in human capital development' (Motlanthe 2010). It is possible to argue that the IHLs are integral partners in the successful execution of the 17 Sustainable Development Goals that aim to: 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture'; 'End poverty in all its forms everywhere', and 'Ensure inclusive and quality education for all and promote lifelong learning' (United Nations, General Assembly 2015).

Meanwhile, the IHLs are burdened with the problem of students' delayed completion of their degrees, and high dropout and failure rates. A report by Letseka & Maile (2008) indicates that only 15% of students complete their degrees on time in South Africa. Nicole Murdoch, executive director for teaching, learning and quality at the Monash University South Africa concurs with the

assertion that the graduation rate among undergraduate students in 23 public universities in South Africa ranged from 15% to 20% in the recent years (Mtshali 2013). Furthermore, the study argues that there is a need to look at students' problems holistically, since the South African 2013/2014 Annual Report (DHET) mentions that hunger amongst students is a significant problem (Mtshali 2013). Various statistics from across the country's IHLs also show that an average of 35% of students fail to complete their degrees, with 52% dropping out of universities of technology, while 17% of the students do not complete courses at TVETs (Letseka 2009).

Research has also shown that poverty significantly affects the students' academic performance, leading to low graduation rates, high failure, and dropout (Letseka 2009), which jeopardise the country's development prospects. The major problems that contribute to low student graduation rates include FI, as some go for days without having had a meal due to financial constraints (Mtshali 2013). Munro et al. (2013) concur that students on financial aid are the most vulnerable to FI. Letseka & Maile (2008) had earlier warned that even when the NSFAS is granted to financially needy students; it is inadequate, as other needs such as food security could not be met.

## **FACTORS CONTRIBUTING TO FI IN IHLs**

### **Social and economic backgrounds**

Since the dawn of constitutional democracy in 1994, the SA government has placed great emphasis on education, as it is considered to be one of the key contributors for economic development. Hence, the government goal can be achieved if students in IHLs are actively engaged in academic activities, acquire relevant competences and graduate on time. This would enable them to be absorbed into the labour market and contribute to the economic advancement of the country. Worldwide, governments recognise food security as an essential socio-economic factor, and the occurrence of FI amongst university students is not limited to SA since FI has been found in university students from low-income households in, for example, the USA, Canada and Australia. FI impacts on physical and mental health and also negatively affects their academic performance (Kirkpatrick & Tarasuk 2008,

Hughes et al. 2011). In SA, a study at the UKZN revealed that 55% of students, who perceived themselves as coming from low-income households, reported that they were food insecure because they had little or no financial support from their families (Gwacela 2013). The study revealed that students used their bursaries to support their families. Research has shown that most students' guardians live on social security grants in SA. The social grants are given largely to old-aged family members, who use some portion of it on children attending school and IHLs (Neves et al. 2009). It is reasoned that the portion of the grant used to support children attending higher education is largely used for tuition fees leaving almost nothing for food.

As stated earlier, in SA, students from low-income households may access NSFAS to cover mainly tuition fees and subsistence. However, a study by Letseka (2007) found that students on financial aid were faced with the problem of covering additional costs, including transport, purchasing food, books and stationery. In this context, the financial aid provided is highly compromised as it is usually split between different obligations to such an extent that it would not contribute significantly to the food budget. This results in the financial aid-dependent student being food insecure.

### **Income and financial mismanagement**

Research has shown that there is a link between household income and food security. Likewise, high-income households are more likely to purchase food rich in nutritional value, compared to low income households who purchase cheaper, refined grains, added sugar and foods richer in vegetable fats (Kirkpatrick & Tarasuk 2008). Foods of low nutritional value contribute to an inadequate dietary intake, which can cause health problems. This concurs with Kassier & Veldman's (2013) assertion that prolonged lack of nutritious foods can negatively affect students' health and academic performance. Kassier & Veldman's (2013) study also reported that food insecure students face the risk of missing classes and other academic commitments. With regard to IHLs students on financial aid, the high costs of tuition may directly affect the students' food budget, leading to FI and other implications such as academic underperformance.

Research has also revealed that financial risk behaviour among university student may trigger FI. In this context, regardless of the students' financial status, there is the likelihood of being food insecure due to financial mismanagement. Research by Mendes-da-Silva et al. (2012) in Brazil reported that, because students live independently in the university, they have the autonomy to spend their funds on luxurious items rather than on valuable items due to lack of financial experience and management skills. It is possible to argue that students who mismanage their finances do not prioritise valuable items such as nutritious food on their budget. A related study by Lyons (2007) in the USA shows that that financial mismanagement by students increased the likelihood of compromising their physical and mental health and consequently their academic performance. Taking into account these findings, it is imperative that students should be oriented with financial education including budgeting skills, especially at first year undergraduate level. A study by Ebeuwa-Okoh (2010), which examined the influence of financial status, gender and age on undergraduate students' academic performance at Delta State University in Nigeria, found that students who had financial means tended to spend money on luxuries rather than educational items such as books which could enhance academic performance. The study recommended practical solutions such as counselling to improve student academic performance.

In SA, studies have revealed that students from low-income households who had secured finance at IHLs faced the risk of FI caused by lack of financial management (Letseka 2007; Gwacela 2013). Financial mismanagement contributes towards misdirection of funds to other unnecessary items rather than purchasing healthy food. Letseka's (2007) study also reported that a large proportion of undergraduate students overspent on luxuries such as designer clothes, liquor and parties. Cumulatively, the reported research underscores the need to educate students on the importance of good financial management to enable proper dietary habits, good health maintenance and enhanced academic performance.

### Food theft

Food theft is another contributing factor to students' FI. Food theft has been reported by some IHLs in different parts of the world (Innes-Hughes et al. 2010; Gwacela 2013; Van den Berg & Raubenheimer 2015). Research conducted by Innes-Hughes et al. (2010) in Australia revealed that student perceptions of food theft as an unpreventable act were because the residential communal areas were open to all residents. The authors observed that food insecure students in universities resorted to food theft as a coping strategy, or as an emergence measure to securing food. Gwacela (2013) reported that, at UKZN, there was a high risk of food theft in students' residences that had communal kitchens. The study found that there was a high prevalence of FI among students who shared rooms because of food theft. The University of the Free State (UFS) in South Africa has recorded incidents of food theft among students who indicated that they stole food because of hunger and poverty (Van den Berg & Raubenheimer 2015). These studies indicate food theft as a contribution to FI among students in IHLs and their possible consequences for academic underperformance.

### THE PARADOX OF FI PERCEPTIONS AND PERSPECTIVES

There are various definitions of food security. For example, the Food and Agriculture Organisation of the United Nations (FAO) states that 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' (World Food Summit 1996: 1). This definition has some critical determinants including availability; access; utilisation and stability. Therefore, the availability of adequate nutritious food at all times, and one's access to it, is critical, as it is an important socio-economic factor when analysing FI. Conceptually, FI is one's inability to access sufficient, safe and nutritious food. The inability to be food secure could result from poverty as most victims of FI are found to be poor - especially in the predominantly developing regions of the global south (FAO, International Fund for Agricultural Development (IFAD) & World Food Programme (WFP) 2015). Improper utilisation of food and poor diet can lead to illness, which can negatively affect

students' academic commitments and educational outcomes (Hughes et al. 2011). The complexity of household FI has continued to encourage various proponents, researchers and scientists to present their views and suggest means of addressing the problem.

### Inadequate nutrition and health

The FAO, IFAD & WFP (2015) view FI as a driver of health problems: food insecure people are prone to malnutrition, hunger and starvation. From this perspective, FI is an outcome of lack of access to food and poor dietary quality, which can contribute to both obesity and under-weight. Further, some authors, such as Donald (2010), have noted that there is a relationship between adequate food and nutrition, and physical health. Chen & Florax (2010) found an association between food consumption and health outcomes using Body Mass Index (BMI) among women of reproductive age. FI was found to be strongly correlated to higher BMIs, indicative of overweight and obesity.

Similar studies conducted on FI among American women showed that food insecure households had more overweight individuals compared with food secure households (Adams 2003). Overweight and obesity is becoming a public health problem linked to FI. Most households experiencing the risk of food insufficiency are vulnerable to this problem, as they tend to buy energy-dense foods that are cheaper and accessible to poorer households (Hughes et al. 2011). A study by Jyoti (2005) showed an association between school-aged children from low-income households, who were at risk of hunger and a risk for psychosocial dysfunction. Given that food/nutrition insecurity is likely to negatively affect one's mental, physical health and academic performance (Lyons 2007), this can have adverse effects on students' potential for economic and social development.

### Food poverty

Food poverty could be understood as the occurrence of FI, or the extent to which an individual lives without basic resources (such as money to purchase food, goods and services and the mental ability to make informed decisions) to live and maintain a standard of living (Booth & Smith 2001). A study by Dixon et al. (2001) in the USA on household food security

concluded with this notion when it showed that adults from food insecure households are vulnerable to compromised diets threatening their health, compared to adults from food secure families. The study revealed that anxiety about the availability of food affected a person's social or mental well-being, by creating feelings of irritability and depression.

This view resonated with the findings of a national survey conducted by Sorsdahl et al. (2011) on food insufficiency and mental health in SA. This reported a pattern of results indicating an association between Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnoses and food insufficiency for the 12-month DSM-IV outcome. The study showed that respondents who reported FI were more likely to have a 12 month DSM-IV disorder (anxiety disorder) compared with those who were food secure and/or had enough to eat over a 12 month period. The effects of poverty were also presented by Strobel (1996), who argued that they negatively impact social behaviour such as 'marginalisation' and 'stigmatisation', thereby increasing the risk of declining social cohesion. With regard to food security, individuals who were in most need of help from community support systems ironically disintegrated due to social stigma: discrimination encouraged community members to marginalise those who need help. 'Marginalisation' and 'stigmatisation' have also been documented in some IHLs where food insecure students do not discuss their status openly due to the negative connotations attached to the phenomenon (Fekisi & Jaffer 2013). Shreeves (2010) wrote about FI in the USA and referred to an article in the US publication, *The Atlantic*, which reported an increasing number of students in universities who frequently attended class on empty stomachs but did not perceive their lack of food as a problem (Shreeves 2010). It was noted that, even after the campus 'Food Closet' project was launched to address student FI at the University of California, students were ashamed to receive food aid. Similar views were shared by interviewed staff members from the UKZN Student Counselling Centre, who reported that one of the major challenges was that students did not admit that they were food insecure, which made it harder for the counselling staff to assist them (Khanyile 2011 in Gwacela 2013).

UFS, an institution confronted with FI complexities, reported that some interviewed

food insecure students on campus were so ashamed of exposing their impoverished lifestyle that, when their peers offered to assist them with food, they felt that they were burdening their friends as they did not have anything to give back to them (Fekisi & Jaffer 2013; Van den Berg & Raubenheimer 2015). Some students were reluctant to apply for the food security aid on campus, 'No Student Hungry Programme', which they thought would expose their poor economic status on campus and trigger 'stigmatisation'. Students feared that they could be labelled as 'hungry students' who lack the means to feeding themselves.

Conversely, some studies have disclosed that community food support can have a positive impact on the psychosocial status of the targeted beneficiaries. Likewise, an impact study by the WorkinghamTrussell Trust Food Bank (2014) on a community food bank in the United Kingdom, which reported that 81% of the respondents indicated that accessing free food from the community food bank made a significant positive impact, particularly on their mental and psychological status. The beneficiaries indicated that food handouts helped them reduce stress-related problems such as anxiety about where their next meals would come from. While this study did not specifically investigate the impact of food security on academic performance in IHLs, it significantly contributes to some perspectives of analysing FI interventions and their impact. This underscores the need for further research on the relationship between food security, social stigma and academic performance in IHLs.

### **Self-actualisation and well-being**

Although there is no dispute about the relationship between nutrition and cognitive development, there is minimal evidence of the effect of FI on academic performance (Hamelin et al. 1999). FI is often underestimated as a psychological and or emotional stressor that could cause or affect certain behaviours (Jyoti et al. 2005). A study by Hamelin et al. (1999) in Canada confirmed that low economic status could lead to depression, which could affect the cognitive stability and functionality limiting learning and brain memory structures and, ultimately, one's behaviour.

Abraham Maslow a behavioural scientist observed that human beings have specific

needs, such as food, water and air, which should be gratified if they were to be high achievers or self-actualisers in their lifetime. Using his Theory of Human Motivation perspective, Maslow (1954) presented a five-stage model containing a Hierarchy of Needs, which he sub-divided into basic needs, namely biological and physiological needs (McLeod 2007). The hierarchy is premised on the notion that individuals must satisfy their lower level basic needs such as food and water before progressing on to the higher needs. As argued by Maslow, if the basic needs are not gratified they compromise higher-ranking needs such as self-esteem and self-actualisation (McLeod 2007). In this context, food security meets the basic physiological need for food, whilst FI deprives that need. Given this potential correlation between FI and academic performance, it is thought that if students' primary need of food security is not gratified, other factors related to academic performance could be jeopardised. Closely related to the concept of relating food security and academic performance are recent studies conducted by Kassier & Veldman (2013) on FI at UKZN. These revealed that university students who are food insecure tend to experience poor nutrition due to an unbalanced diet which is of poor quality and has low dietary diversity. Consequently, these students underperform academically. Although the above study points to a correlation between food security and academic performance, they are generalized and only consider the challenge of FI from the causal point of view. While analysing the issue of food security, Sorsdahl et al. (2011) noted that research on household FI seems to have received attention in developed countries such as Canada, Australia and the USA, it is under-reported in sub-Saharan African countries, including South Africa. Hughes et al. (2011) reported that studies on food security and its impact on academic performance are limited to schoolchildren.

### **INSTITUTIONALISATION OF FOOD SECURITY INTERVENTIONS**

Unlike at basic school level, where the SA government addresses FI and nutritional problems through the NSNP, IHL students, mostly from low-income families are known to have survived on insufficient and less nutritious food (Fekisi & Jaffer 2013). This could be attributed to an absence of policy to guide IHLs

on how to address the challenge of FI, despite its acknowledged negative impact on students' education and the national economy. Nonetheless, the complexities of household FI have prompted some IHLs such as UKZN, to develop their own initiatives of providing food assistance to students in need.

The FSP was implemented at the UKZN in 2012 in response to increased cases of hunger among students. Its primary goal is to provide both counselling and food support in the form of food hampers or meal vouchers to students who are referred by designated staff, members of the Student Representative Council, or students who may identify students that are in need of food assistance. The FSP also aims to create awareness about the challenges of FI and the threat it poses to students' academic performance.

The UFS, whose FI prevalence stands at 60%, has also implemented a 'No Student Hungry Programme' to address cases of student hunger in its community (Van den Berg & Raubenheimer 2015). The research findings at the Institution revealed that owing to the socio-economic disparities created by the former Apartheid regime, the previously disadvantaged populations such as Coloureds and people of African descent amongst undergraduates were most at risk of being food insecure. Other institutions, such as the University of Zululand (UZ) and Durban University of Technology (DUT), have institutionalised meal plans at some of the students' residences and dining halls where the NSFAS-funded students staying at university residences receive meal vouchers of a certain amount per day, which is used for redeeming or purchasing meals from the dining halls, (Gwacela 2013). At DUT, it was observed that, although the dining hall system was effective in terms of addressing the students' hunger needs, there was a general tendency by some students who qualified for the vouchers to cheat the system by stealing for their friends who were excluded from the system. Thus, the relationships between food and nutrition security/insecurity; food security interventions; cognitive power; self-esteem and actualisation may be both complex and paradoxical.

### **CONCLUSIONS AND RECOMMENDATIONS**

From this research review, it appears that students at South African IHLs who suffer FI will

additionally experience psychological and emotional stress as a factor that can impact negatively on health, self-esteem and motivation, leading to academic underperformance and can prevent self-actualisation. Due to a high prevalence of FI among students, some of the IHLs, including UKZN, have implemented student food security programmes as an intervention. These interventions have been met with complex and paradoxical reactions, such as 'stigmatisation' and 'marginalisation' of student beneficiaries, with the resulting reluctance of food insecure students to access the services. There is a need for a national policy to address the challenges of FI amongst students at South African IHLs and the associated negative perceptions about food security programs. From this review, there are grounds to recommend that, alongside empowering students with knowledge of nutrition and basic skills in managing their food budget, practical interventions such as agriculture projects could be used to supply foods to IHLs. The review also suggests further empirical research on the scope of the FI in SA IHLs and the associated problems such as the psychological and emotional stress related to FI experienced by students.

## REFERENCES

- Adams, E., Grummer-Strawn L. & Chavez G.C., 2003, Food Insecurity is Associated with Increased Risk of Obesity in Californian Women, *Journal of Nutrition*, 133(4), 1070-1074.
- Booth, S. & Smith, A., 2001, Food Security and Poverty in Australia. Challenges for Dieticians. *Australian Journal of Nutrition and Dietetics*, 58, 150 -156.
- Chen, S.E. & Florax, R.J., 2010, Zoning for health: the obesity epidemic and opportunities for local policy intervention. *The Journal of nutrition*, 140(6), 1181S-1184S.
- DBE, 2009, National School Nutrition Programme: 2008 Annual Report, Government Printers, Pretoria.
- DAFF, 2011, Food Security, Directorate Economic Services, Production Economics Unit, Pretoria.
- DAFF, August 2014, The National Policy On Food And Nutrition Security for the Republic of South Africa, Government Gazzet, Pretoria.
- DHET, Annual Report 2013/14, May 2014, Government Printers, Pretoria.
- Dixon, L.M., Winkleby, R. & Kathy, R., 2001, Dietary intakes and serum nutrients differ between adults from food-food insufficient and food-sufficient families: Third National Health Nutrition Examination Survey, 1988-1994, *Journal of Nutrition*, 131, 1232 -46.
- Donald, R., 2010, Access to Healthy Food: A Key Focus for Research on Domestic Food Insecurity, *Journal of Nutrition*, 140, 1167- 1169.
- Ebenuwa-Okoh, E.E., 2010, Influence of Age, Financial Status, and Gender on Academic Performance among Undergraduates, *Journal of Psychology*, 1(2), 99-103.
- Fekisi, L. & Jaffer Z., 2013, Hungry Students: A Public Health Crisis, viewed 17 July 2012, from <http://www.thejournalist.org.za/kau-kauru/hungry-students-a-public-health-crisis>.
- FAO, IFAD & WFP, 2015, The State of Food Insecurity in the World 2015. Meeting the 2015 international hunger targets: taking stock of uneven progress, FAO, Rome.
- Gwacela, M., 2013, Exploring Food Insecurity and Socio-economic Factors Affecting Academic Performance: A Case Study of 1st Year Students on Probation and at Risk of Academic Exclusion, University of KwaZulu-Natal.
- Hamelin, A.M., Jean-P., Habicht, B. & Micheline, B., 1999, Food insecurity: consequences for the household and broader social implications, *Journal of Nutrition*, 129, 525S-528S.
- Hughes, R., Serebryanikova, I., Donaldson, K. & Leveritt, M., 2011, Student food insecurity: The skeleton in the university closet, *Nutrition and Dietetics*, 68, 27-32.
- Innes-Hughes, C., Bowers, K., & Chapman, E.B., 2010, Food security: Sydney: The what, how, why and where to of food security in NSW. Discussion Paper. Heart Foundation NSW and Cancer Council NSW, PANORG.
- Jyoti, D.F., Frongillo E.A.F., & Jones S.J., 2005, Food insecurity affects school children's academic performance, weight gain, and social skills, *Journal of Nutrition*, 135(12), 2831- 2839.
- Kassier, S., & Veldman, F., 2013, Food Security Status and Academic Performance of Students on Financial Aid: The Case of UKZN. *Alternation Special Edition 9*. Teaching and Learning Office, UKZN.
- Kirkpatrick, S., & Tarasuk, V., 2008, Food insecurity is associated with nutrient inadequacies among Canadian adults and adolescents, *Journal of Nutrition*, 138 (3), 604-612.
- Letseka, M., Breier, M., & Visser, V., 2010, Poverty, race and student achievement in seven higher education institutions, viewed 21 July from [https://www.researchgate.net/publication/263469537\\_Poverty\\_race\\_and\\_stud](https://www.researchgate.net/publication/263469537_Poverty_race_and_stud)



- ent\_achievement\_in\_seven\_higher\_education\_institutions.
- Letseka, M., 2009, University drop-out and researching (lifelong) learning and work. *Learning/Work* 88, viewed 4 Sept 2015 from <http://www.hsrcpress.ac.za/>.
- Letseka, M., & Maile, S., 2008, High university drop-out rates: A threat to South Africa's future, Human Sciences Research Council, Pretoria.
- Letseka, M., 2007, Why students leave: The problem of high university drop-out rates, *HSRC Review*, 5(3), 8-9.
- Lyons, A.C., 2007, Credit practices and financial education needs of Midwest college students, Indianapolis, IN: Network Financial Institutions, Indiana State University.
- McLeod, S., 2007, 'Maslow's hierarchy of needs' *Simply Psychology* 1, viewed 4 April 2015 from <http://www.simplypsychology.org/maslow.html>.
- Mendes-Da-Silva, W., Nakamura, W.T. & Moraes, D.C.D., 2012, Credit card risk behavior on college campuses: evidence from Brazil. *BAR-Brazilian Administration Review*, 9(3), 351-373.
- Maroto, M.E., Snelling, A. & Linck, H., 2015, Food insecurity among community college students: Prevalence and association with grade point average. *Community College Journal of Research and Practice*, 39(6), 515-526.
- Motlanthe K., 2010, Invest in higher education-Motlanthe. South African Government News Agency, viewed 4 Sept 2015 from <http://www.sanews.gov.za/south-africa/invest-higher-education-motlanthe>.
- Mtshali, N., 2013, Only 15% of SA university students graduate, IOL News, viewed 4 Sept 2015 from <http://www.iol.co.za/lifestyle/family/kids/only-15-of-sa-university-students-graduate-1531809#.Va4WnaSqqko>.
- Munro, N., Quayle, M., Simpson, H., & Barnsley, S., 2013, Hunger for knowledge: Food insecurity among students at the University of KwaZulu-Natal, *Perspectives in Education*, 31 (4), 168-179.
- Neves, D., Samson, M., Niekerk, V. N., Hlatshwayo, S., and du Toit, A., 2009, The use and effectiveness of social grants in South Africa, FinMark Trust, Cape Town.
- Nugent, M.A., 2011, Journeys to the food bank: exploring the experience of food insecurity among postsecondary students, University of Lethbridge, Faculty of Health Sciences, Lethbridge, Alta.
- Republic of South Africa, 1996, The Constitution, Pretoria, Government Printers.
- Shreeves, R., 2010, Food insecurity on college campus: Mother Nature Network, viewed 22 July 2015 from <http://www.mnn.com/food/healthy-eating/blogs/food-insecurity-on-college-campus>.
- Sorsdahl, K., Slopen, N., Siefert, K., Seedat, S., Stein, D., & Williams, D., 2011, Household food insufficiency and mental health in South Africa, *Journal of Epidemiology and Community Health*, 65, 426-431.
- Statistics South Africa, 2017, Poverty Trends in South Africa An examination of absolute poverty between 2006 and 2015, Government Printers, Pretoria.
- Statistics South Africa, 2012, GHS Series, volume IV, Food Security and Agriculture, 2002–2011, Government Printers, Pretoria.
- Strobel, P., 1996, From poverty to exclusion: a wage learning society or a society of human rights? *International Social Science Journal*, 48 (148), 173- 189.
- The Presidency, Republic of South Africa, 2009, Together doing more and better: Medium Term Strategic Framework for (MTSF, 2009 – 2014), Government Printers, Pretoria.
- United Nations, General Assembly, 2015, Transforming our world: the 2030 Agenda for Sustainable Development, A/RES/70/1, 21 October. Viewd 8 August 2017, from [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E).
- Van den Berg, L., and Raubenheimer, J. 2015, Food insecurity among students at the University of the Free State, South Africa. *South African Journal of Clinical Nutrition*, 28(4), 160-169.
- Workingham Trussell Trust Food Bank, 2014, viewed 20 July 2014 from [http://healthwatchworkingham.co.uk/wp-content/uploads/2016/04/foodbank\\_report\\_-\\_july\\_2014.pdf](http://healthwatchworkingham.co.uk/wp-content/uploads/2016/04/foodbank_report_-_july_2014.pdf)
- World Food Summit, 1996, Rome Declaration on World Food Security and World Food Summit Plan of Action, Italy, Rome.