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RESEARCH ARTICLE

Food security and disability in South Africa: an analysis of General Household Survey data

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ABSTRACT

Purpose: We investigated the relationship between disability and food security in South Africa using data from the General Household Survey (GHS).

Materials and Methods: Regression models were utilised with GHS data (2014–2018) to gauge the likelihood of food insecurity (the dependent variable) among individuals with disabilities. Socioeconomic and demographic traits of the 2018 GHS sample were analysed. All estimates were weighted and represented nationally at the individual level.

Results: In this study population (32 187) of food insecure people, 9.64% are disabled. Food insecurity impacts more Black people with disabilities (91%) versus those without disabilities (90%), and disabled women (65%) versus nondisabled women (58%). Most reside in KwaZulu-Natal. Those with disability grants lower food insecurity odds, while child support grant recipients face higher odds. Household size and education are significant predictors, while marital status and gender are not.

Conclusion: This study data justifies the need for disability-inclusive food security programmes in South Africa, especially amid crises like COVID-19. Significantly, there is a nil data finding about people with eating/swallowing disabilities whose needs intersect with food security. This emphasises the need for inclusive data collection that operates within a food sovereignty framework to increase the visibility of people with disabilities.

IMPLICATIONS FOR REHABILITATION

- South African national surveys and censuses should include data on people with disabilities, particularly those with eating and swallowing disabilities.
- Updated metrics, such as the Food Insecurity Experience Scale (FIES), if used, will facilitate easier cross-country comparisons and helps monitor progress towards achieving zero hunger
- The study underscores the necessity for disability-inclusive food security programmes in South Africa, and the importance of a food sovereignty framework to enhance visibility.

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Food security; food sovereignty; disability; low-middle income countries; South Africa; General Household Survey

Introduction

The COVID-19 pandemic sharply illuminated health and nutrition inequities in South Africa (SA) [1] identified as the most unequal country in the world [2]. However, this COVID-19 surveillance data was not disability inclusive mirroring global ableist orientations [3]. Globally, disability data remains elusive despite 16% (1.3 billion) of people with disabilities, most (80%) of whom live in low_/and middle-income countries [4] or are the global majority, viz.: Asia, Africa, Latin America, and the Caribbean – also referred to as Majority World [5]. Therefore, one would imagine that critical nutrition/food security research would foreground people with disabilities. However, so pervasive is ableism that even the 2021 United Nations Food Systems Summit missed referencing people with disabilities [6]. The Disability Data Initiative [7] has potential to reveal such forms of ableism and enable critical practices with/in disabled peoples' health and their relationship with, e.g., food security SA's disability prevalence rate is difficult to estimate but has been noted at 7.5% which is likely higher in context of SA's quadruple burden of disease (1) high HIV/AIDS and concurrent tuberculosis rates; (2) high violence and injuries; (3) high levels of maternal and child mortality; (4) high NCD (noncommunicable diseases rates) and high poverty [8–11]. Approximately 78% of people living with disability in SA are poor [12], more likely income poor over time and likely to be unemployed [13]. Disability measures align to [14] Eurocentric ideologies implying a non-consideration of Afrocentric values of health/illness/disability that emphasise communal responsibility, advocate for social justice, equality, and the empowerment of marginalised communities of African descent, often recognising the contributions of African civilisations to world history and culture [15].

The relationship between disability and food security is of particular interest given its confounding local and global impact, yet it remains under-researched. Food security refers to the availability,

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affordability, access, utilisation, stability, and preference of nutritious food within a sociocultural framework [16]. A terminology revision, viz. "food and nutrition security" foregrounds the goal of eating, viz., nutrition [17]. Like *via* Campesina (https://viacampesina.org/en/) [18,19] and many others, we favour "food sovereignty" to assess how political factors like how the World Bank and/or World Trade Organisation relate to poorer governments and multinational food corporations to manage hunger with instruments like international trade agreements. However, as "food sovereignty" is not built into tools like the Medical Subject Heading (MeSH) thesaurus, national censuses or household surveys, food security is used here to negotiate the concepts of disability and food.

The relationship between food insecurity and health conditions, as well as disability has been explored, e.g., [20] conducted a comprehensive review linking food insecurity to adverse health outcomes, including chronic diseases (e.g., diabetes) and mental health issues [21] synthesised evidence on the association between food insecurity and poor health outcomes, emphasising the heightened risk among vulnerable populations, including those with disabilities [22] analysed studies examining the complex interplay between poverty, food security, and health, elucidating the multifaceted impact on overall well-being, highlighting the need for targeted interventions. Several countries have established clear links between disability and food security across low-middle income countries like Brazil (Pérez-Escamilla & Segall-Corrêa) and Ethiopia [23]; and in high-income countries like the United States [24]. However, it is also acknowledged that the relationship between disability, nutrition and food security needs to be better established and researched [25,26]. There are also no recent published studies that focus on South Africans with disabilities and their food security. Hence, the rationale for our current study is that the field lacks statistical data to advocate for policy review and implementation of improved services regarding food security and disability in South Africa. Therefore, the purpose of this study is to provide the data required to establish a concrete relationship, regarding South African people, between disability and food security as variables. To fulfil this purpose, we aimed to establish a relationship between disability and food security, and to provide a statistical basis on which definitive correlations may be drawn by employing the use of secondary data analysis of the General Household Survey (GHS) 2014-2018.

This study provides an analysis of the characteristics of people with disabilities and their food security, at an individual and household level in South Africa; and an evaluation of their risk of being food insecure.

Materials and methods

Data

Using Stata, analysis was conducted on South African General Household Survey (GHS) data from 2014 to 2018 regarding disabled people aged 15 and older. Methodologically, Mitra and Yap [27], reported that 21% national censuses/household surveys contain disability questions that meet international standards implying "persons with disabilities continue to be invisible" [7,p.6] Similarly, tools used vary including national estimates like the Global Hunger Index, and Global Food Security Index; indirect/derivative measures like household expenditure surveys, dietary diversity or intake assessment and anthropometry; and direct measures, viz. experience-based food insecurity scale (preferred) [28]. In SA nutrition, health and disability data are gathered from population censuses (since 1996); SA National Health and Nutrition Examination Survey [SAHANES] (conducted in 2012), SA Demographic and Health Survey, and annual General Household Surveys (GHS) used since the late 1990s. However, there is no national survey primarily focused on multidimensional measurement of food insecurity. The SAHANES and GHS studies are reliable sources of information that use experience-based food insecurity measurement scales. The GHS is designed to collect data at a household and individual level and aims to measure the development and performance of government-initiated programmes and projects.

In SA, data about race for a country steeped in racism matters as a construct when focussed on social, economic, cultural, and other political injustices. The current government has retained the use of apartheid racial categories to measure transformation along racial lines. We analysed data by racial categories derived from South African Apartheid terminologies, used in the GHS, where "Coloured" refers to people of mixed European (White), African (Black) and/or Asian ancestry. "Indian" refers to people of Indian or Asian descent, while Black is a marker for "Black African," usually Indigenous People to SA [12]. Importantly, the GHS enables the measurement of the living circumstances of South Africans in its national coverage. The GHS contains detailed questions about peoples' disabilities, access to food at a household level, and was well suited to a study on disability/food security. Additionally, GHS data regarding demographics, employment and living conditions was sufficient to identify individual/household characteristics of people with disabilities at risk of experiencing food insecurity, over time.

People are classified as "disabled" if they indicated that they have *some* or *a lot of difficulty* or *cannot* do, see, hear, walk, remember, communicate and/or selfcare. The measure of food security is created at household level encoded in the following questions with a reference period of 12 months, viz.: (i) did any child or adult in this household go hungry because there was not enough food; (ii) did the household run out of money to buy food; (iii) were the size of meals cut, meals skipped or the variety of foods reduced because of a shortage of food in the household? Positive responses resulted in being classified as food insecure.

Dependent and independent variables, and the sample

The sample is restricted to people with disabilities aged 15 and older as adults are directly impacted by food insecurity, often sacrificing their food for children in the household across their lifepan. For the regression models, the dependent variable is being food insecure/vulnerable and references the measure of food security, detailed above.

The 2018 GHS data was used to construct socioeconomic and demographic characteristics of people with disabilities, followed by a logistic regression estimating the probability of being food insecure for a sample of people with disabilities. The analysis spans a period of four years (2014–2018) and has controlled for a range of socioeconomic and demographic factors. All estimates are weighted and nationally represented at the individual level.

Results

Characteristics of people with and without disabilities who are food insecure

The following analysis (see Table 1) provides a description of the characteristics of adults with and without disabilities who are food insecure. Key characteristics include demographics, spatial characteristics, and socioeconomic factors including an overview of the various social grants received by these individuals.

While both men and women, with and without disabilities are food insecure, there is a higher share of disabled women who are food insecure (65%) compared to women without disabilities (58%). A larger share of Black people with disabilities are food insecure (91%)

Table 1. Demographic characteristics of adults with and without disabilities who are food insecure, 2018.

	People with disabilities who are food insecure	People without disabilities who are food insecure
Gender	**($p < 0.001$)**	**($p = 0.018$)**
Male	34.71 (1.540)	42.36 (0.555)
Female	65.29 (1.540)	57.64 (0.555)
Total	100	100
Sample size	3102	29085
Race	**($p < 0.001$)**	**($p < 0.001$)**
African	90.97 (0.954)	89.05 (0.356)
Coloured	6.66 (0.809)	8.40 (0.302)
Indian	0.59 (0.322)	0.56 (0.091)
White	1.78 (0.466)	1.99 (0.186)
Total	100	100
Sample size	3102	29085
Age categories	**($p = 0.016$)**	**($p < 0.001$)**
15–19	7.63 (0.837)	17.13 (0.407)
20–24	4.65 (0.704)	15.38 (0.402)
25–29	5.38 (0.766)	14.63 (0.412)
30–34	6.03 (0.841)	13.73 (0.404)
35–39	6.38 (0.817)	10.51 (0.353)
40–44	6.26 (0.785)	7.97 (0.301)
45–49	7.12 (0.774)	5.81 (0.248)
50–54	11.15 (1.003)	4.77 (0.228)
55–59	10.25 (0.938)	3.78 (0.202)
60 and older	35.16 (1.483)	63.07 (0.254)
Total	100	100
Sample size	3102	29085
Marital status	**($p < 0.001$)**	**($p < 0.001$)**
Married/cohabiting	33.76 (1.504)	29.83 (0.514)
Widowed	23.06 (1.304)	4.47 (0.210)
Divorced	3.56 (0.576)	1.73 (0.139)
Never married	39.62 (1.555)	63.98 (0.535)
Total	100	100
Sample size	3102	29085
Average household size	**6 people (0.104)**	**6 people (0.042)**
Sample size	1214	9430
Language Spoken inside the house	**($p < 0.001$)**	**($p < 0.001$)**
Afrikaans	8.67 (0.908)	8.35 (0.305)
English	1.69 (0.471)	3.25 (0.220)
Isindebele	2.98 (0.561)	2.21 (0.168)
Isixhosa	18.31 (1.198)	18.94 (0.430)
IsiZulu	29.74 (1.481)	31.68 (0.532)
San languages	0.00	0.07 (0.030)
Sepedi	4.17 (0.599)	5.16 (0.238)
Sesotho	10.64 (0.943)	8.98 (0.306)
Setswana	17.42 (1.201)	13.61 (0.393)
Sign language	0.00	0.01 (0.006)
Siswati	3.582 (0.553)	3.723 (0.199)
Venda	0.801 (0.248)	1.419 (0.127)
Tsonga	2.002 (0.463)	2.604 (0.191)
Total	100	100
Sample size	3071	28626

The data are weighted.
Standard errors in parenthesis.

compared to those without disabilities (90%). Interestingly, a larger percentage of adults aged 60 and older without disabilities are food insecure (63%) compared to those with disabilities (35%). Sixty-four percent of adults without disabilities have never been married compared to 40% of adults with disabilities. Of the total survey population of 32 187 (3102 disabled and 29 085 non-disabled), 9.64% are disabled.

Spatial characteristics of people with disabilities who are food insecure

Table 2 presents interesting patterns of food insecurity across different regions and disability statuses. In KwaZulu-Natal, the rate of food insecurity is equally high for both adults with and without disabilities, with 24% of each group experiencing food insecurity. Gauteng shows a different trend, where people without disabilities actually face higher food insecurity (20%) compared to those with disabilities (13%). The most striking disparity appears in traditional areas, which are communally owned lands under the authority of traditional leaders. In these areas, adults with disabilities experience notably higher rates of food insecurity (43%) than those without disabilities (38%). These figures underscore the complex relationship between disability status, geographical location, and food security.

Table 2. Spatial characteristics of people with and without disabilities who are food insecure, 2018.

	People with disabilities who are food insecure	People without disabilities who are food insecure
Province	**($p < 0.001$)**	**($p < 0.001$)**
Western Cape	8.17 (0.937)	11.02 (0.363)
Eastern Cape	12.66 (0.989)	13.01 (0.353)
Northern Cape	4.51 (0.461)	3.07 (0.133)
Free State	8.62 (0.840)	4.66 (0.214)
KwaZulu-Natal	24.00 (1.392)	24.12 (0.492)
North West	15.89 (1.209)	10.51 (0.353)
Gauteng	12.63 (1.087)	19.57 (0.461)
Mpumalanga	10.19 (0.927)	9.02 (0.306)
Limpopo	3.33 (0.527)	5.03 (0.229)
Total	100	100
Sample size	3102	29085
Geographic location	**($p < 0.001$)**	**($p < 0.001$)**
Urban areas	53.74 (1.576)	57.93 (0.549)
Traditional areas	43.22 (1.563)	38.19 (0.537)
Farm areas	3.05 (0.534)	3.88 (0.231)
Total	100	100
Sample size	3102	29085

The data are weighted.
Standard errors in parenthesis.

Socioeconomic characteristics of people with disabilities who are food insecure

Table 3 provides insight into the characteristics of food-insecure individuals in South Africa. Among those without disabilities who are food insecure, a significant 66% lack a matriculation or school pass, indicating that while they have some form of schooling, they have not completed their secondary education. The employment status data reveals that a striking 70% of disabled food-insecure individuals are economically inactive. This category encompasses a diverse group, including those not available for work, people aged 65 and older, full-time students, retirees, and homemakers. Furthermore, the table highlights a notable income disparity among food-insecure adults based on disability status. Adults with disabilities who face food insecurity live in households with a lower average total monthly income of R6,770, compared to their counterparts without disabilities, whose households average R7,920 per month. This difference of R1,150 underscores the additional economic challenges faced by food-insecure individuals with disabilities.

Types of social grants received by people with and without disabilities who are food insecure

Table 4 provides insights into the social grants received by food-insecure individuals with disabilities. The most common form of support is the old age grant, which is received by 30% of this group. Disability grants are the second most prevalent, benefiting 12.63% of food-insecure people with disabilities. A smaller proportion, 2.8%, receive child support grants. Interestingly, only a tiny fraction—0.07%—receive care dependency grants.

Table 3. Socioeconomic characteristics of people with and without disabilities who are food insecure, 2018.

	People with disabilities who are food insecure	People without disabilities who are food insecure
Highest education level	**($p < 0.001$)**	**($p < 0.001$)**
No schooling	19.66 (1.247)	4.21 (0.213)
Without matric	64.78 (1.535)	65.65 (0.541)
With matric	10.21 (0.985)	24.71 (0.495)
Some form of tertiary education	5.35 (0.788)	5.44 (0.269)
Total	100	100
Sample size	3016	28583
Employment status	**($p < 0.001$)**	**($p < 0.001$)**
Employed	20.18 (1.290)	29.95 (0.516)
Unemployed	9.34 (0.969)	23.36 (0.484)
Economically inactive	70.48 (1.471)	46.70 (0.556)
Total	100	100
Sample size	3102	29085
Mean total monthly household income (Rands)	6770.14 (270.402)	7920.29 (110)
Sample size	1186	9243

The data are weighted.
Standard errors in parenthesis.

Table 4. Types of social grants received by people with and without disabilities who are food insecure, 2018.

	People with disabilities who are food insecure	People without disabilities who are food insecure
Old age grant	**($p = 0.004$)**	**($p = 0.799$)**
No	69.62 (1.417)	94.59 (0.235
Receives old age	30.38 (1.417)	5.41 (0.235)
Total	100	100
Sample size	3089	29049
Disability grant	**($p = 0.007$)**	**($p < 0.001$)**
No	87.37 (1.076)	98.21 (0.143)
Yes	12.63 (1.076)	1.79 (0.143)
Total	100	100
Sample size	3088	28980
Child support grant	**($p = 0.186$)**	**($p < 0.001$)**
No	97.20 (0.518)	92.55 (0.281)
Yes	2.80 (0.518)	7.45 (0.281)
Total	100	100
Sample size	**3102**	**29051**
Care dependency grant	**($p = 0.906$)**	**($p = 0.003$)**
No	99.93 (0.072)	99.91 (0.029)
Yes	0.07 (0.072)	0.09 (0.029)
Total	100	100
Sample size	3102	29085

The data are weighted.
Standard errors in parenthesis.

Regression estimates

The odds of being food insecure among people with disabilities in SA

The results in Table 5 present the odds of being food insecure for people with disabilities between 2014 and 2018.

Interestingly, disabled people younger than aged 60 have higher odds of being food insecure compared to those aged 60 years/older. For example, in 2014 those aged 50–54 compared to people 60 years/older were almost two and a half times more likely to be food insecure.

Being food insecure shares a statistically significant relationship with geographic location. Data from 2015 showed people with disabilities living in traditional areas are 1.7 times more likely to be food insecure compared to those in urban areas, like data from 2016 and 2018.

In 2018, colored (0.249) and White (0.229) people with disabilities had lower odds of being food insecure compared to Black people. SA Indian people with disabilities have lower odds of being food insecure compared to Black people – findings that were statistically significant using data from 2015 and 2017 at the 90% level of confidence.

People in North West province have higher odds of being food insecure compared to those in KwaZulu-Natal, e.g., in 2014 people in the North West were almost three times more likely to be food insecure compared to KwaZulu-Natal. These odds increased to 5.250 in 2015 and reduced slightly to 2.177 in 2018. Further analysis by province shows that in 2018, people in the Eastern Cape (0.423), Free State (0.303), Gauteng (0.389), and Limpopo (0.097) provinces have significantly lower odds of being food insecure compared to KwaZulu-Natal. This relationship is noted across the period of analysis.

When controlling for socioeconomic factors, highest education level and employment status emerge as predictors of food insecurity amongst people with disabilities. Across 2014–2018, people with disabilities without schooling and those without matriculation (school-leaving) pass have statistically significant higher odds of food insecurity compared to those with matriculation. In 2017, people with disabilities with no schooling were almost two and a half times more likely to be food insecure compared to people with disabilities with matriculation; while those without matriculation were two times more likely to be food insecure compared to those with matriculation. Regarding employment, unemployed people with disabilities have significantly higher odds of being food insecure compared to those who are employed. Across 2014–2018, unemployed people with disabilities are about two times more likely to be food insecure compared to those employed.

Data from 2015 showed that people with disabilities living in female-headed households are 1.3 times more likely to be food insecure compared to those living in male-headed households.

Language spoken inside households reveals (in 2018) Afrikaans-speaking people with disabilities are just under three times more likely to be food insecure compared to English speaking people. Similarly, in 2015, IsiXhosa speakers are three and a half times more likely to be food insecure compared to English speaking people. Venda speakers (in 2017) were five times more likely to be food insecure compared to English speakers.

When controlling for social grants received, from 2014, those who received disability grants have lower odds of food insecurity (0.590) compared to those without disability grants. The child support grant is a significant predictor of experiencing food insecurity as data from 2014 (1.657), 2016 (2.494), and 2017 (2.371) shows that those receiving child support grants have significantly higher odds of being food insecure compared to those without child support grants (see the discussion below for why this may be the case). Household size is also a significant predictor of food security. People with disabilities are more likely to experience food insecurity with an increase in household size. Lastly, marital status and gender are non-significant predictors of being food insecure (between 2014 and 2018) and when household income is controlled for.

Discussion

This is the first focal analysis of disability and food security in SA. Despite data from a pre-COVID-19 era, a similar analysis with/without data from 2019 and through this pandemic does not exist. Hence this analysis contributes towards redressing this data deficit. Governments, international humanitarian aid agencies (e.g., UNICEF, FAO), food manufacturers, food services (in health care, education systems, social care), agriculture and all associated with food systems should use national survey/census data for

Table 5. Regression estimates showing the log odds of being food insecure among people with disabilities in SA, 2014–2018.

	2014	2015	2016	2017	2018
Female	0.858	1.042	1.079	0.954	0.878
	(0.083)	(0.101)	(0.116)	(0.112)	(0.101)
15–19	1.236	1.317	1.197	1.157	0.703
	(0.397)	(0.396)	(0.402)	(0.463)	(0.254)
20–24	1.647	1.824**	1.936*	1.948	0.665
	(0.558)	(0.531)	(0.685)	(0.799)	(0.241)
25–29	1.187	1.515	2.309**	1.669	0.719
	(0.377)	(0.439)	(0.796)	(0.648)	(0.256)
30–34	1.614	1.729*	1.854*	1.266	0.823
	(0.535)	(0.486)	(0.602)	(0.479)	(0.288)
35–39	1.366	1.481	2.132**	1.853	0.822
	(0.446)	(0.436)	(0.758)	(0.697)	(0.275)
40–44	2.191**	1.766**	2.009**	1.911*	0.718
	(0.718)	(0.495)	(0.621)	(0.728)	(0.232)
45–49	1.893**	1.479	1.882**	2.429**	1.051
	(0.578)	(0.383)	(0.593)	(0.882)	(0.328)
50–54	2.438***	1.476	2.043**	1.785*	1.555
	(0.729)	(0.384)	(0.600)	(0.612)	(0.461)
55–59	1.453	1.588*	1.862**	1.973**	1.152
	(0.433)	(0.408)	(0.550)	(0.674)	(0.343)
Traditional areas	–	1.770***	1.312**	1.037	1.294**
		(0.193)	(0.155)	(0.134)	(0.166)
Farm areas	–	1.387	0.876	0.751	0.958
		(0.383)	(0.215)	(0.195)	(0.252)
Colored	0.552**	0.740	1.265	0.916	0.249***
	(0.153)	(0.214)	(0.556)	(0.368)	(0.098)
SA Indian	0.739	0.308*	2.141	4.539*	0.525
	(0.483)	(0.188)	(1.380)	(3.674)	(0.423)
White	0.890	0.793	0.783	1.784	0.229***
	(0.341)	(0.362)	(0.465)	(0.894)	(0.114)
Western Cape	2.124***	1.605	0.787	1.180	1.263
	(0.585)	(0.466)	(0.233)	(0.374)	(0.422)
Eastern Cape	0.922	0.412**	0.549**	0.514**	0.423***
	(0.253)	(0.144)	(0.148)	(0.169)	(0.136)
Northern Cape	1.287	2.286***	1.180	1.522	1.027
	(0.351)	(0.651)	(0.314)	(0.466)	(0.328)
Free State	0.667	0.889	0.484***	0.609*	0.303***
	(0.172)	(0.228)	(0.125)	(0.157)	(0.100)
North West	2.984***	5.250***	1.828**	3.197***	2.177**
	(0.731)	(1.353)	(0.532)	(1.005)	(0.718)
Gauteng	0.634**	0.716*	0.872	0.593**	0.386***
	(0.121)	(0.131)	(0.168)	(0.131)	(0.094)
Mpumalanga	0.899	1.038	1.783**	1.266	0.992
	(0.216)	(0.221)	(0.432)	(0.325)	(0.269)
Limpopo	0.150***	0.172***	0.309***	0.175***	0.097***
	(0.049)	(0.056)	(0.096)	(0.060)	(0.034)
Married	0.874	1.218	1.284*	1.053	0.784
	(0.112)	(0.161)	(0.182)	(0.161)	(0.126)
Widowed	1.055	1.097	1.001	1.103	0.981
	(0.149)	(0.157)	(0.152)	(0.170)	(0.169)
Divorced/separated	1.201	1.713**	0.910	0.771	0.933
	(0.308)	(0.406)	(0.238)	(0.213)	(0.271)
No schooling	1.554**	1.334	2.114***	2.467***	1.820***
	(0.282)	(0.240)	(0.411)	(0.493)	(0.380)
Without matric	1.328*	1.443**	1.758***	2.035***	1.485**
	(0.198)	(0.210)	(0.267)	(0.331)	(0.240)
Some form of tertiary education	0.821	0.597**	1.110	1.207	1.180
	(0.185)	(0.143)	(0.258)	(0.330)	(0.311)
Unemployed	1.864***	1.942***	1.871***	2.306***	1.853***
	(0.349)	(0.343)	(0.362)	(0.458)	(0.398)
Economically inactive	1.149	1.168	1.185	1.169	1.152
	(0.145)	(0.137)	(0.161)	(0.163)	(0.166)
Female household head	1.014	1.347***	1.484***	1.104	1.353**
	(0.110)	(0.155)	(0.173)	(0.151)	(0.181)
Afrikaans	0.713	0.565**	0.659	1.052	2.789**
	(0.160)	(0.154)	(0.265)	(0.417)	(1.231)
Isindebele	2.116*	1.615	2.094	1.891	2.580*
	(0.884)	(0.803)	(1.256)	(1.073)	(1.452)
Isixhosa	1.138	3.544***	1.740	2.878**	1.740
	(0.319)	(1.349)	(0.820)	(1.404)	(0.834)
IsiZulu	0.910	1.349	1.224	1.994	1.043
	(0.248)	(0.473)	(0.579)	(0.932)	(0.505)
San languages	–	–	0.995	14.183***	–
			(0.944)	(12.674)	

(*Continued*)

Table 5. Continued.

	2014	2015	2016	2017	2018
Sepedi	0.801	0.890	0.378*	1.262	0.774
	(0.266)	(0.349)	(0.201)	(0.662)	(0.393)
Sesotho	0.884	1.379	1.304	2.154	2.089
	(0.238)	(0.510)	(0.634)	(1.015)	(1.025)
Setswana	1.050	0.928	1.875	2.733**	1.442
	(0.270)	(0.315)	(0.924)	(1.320)	(0.708)
Sign language	–	–	–	–	–
Siswati	1.283	1.419	0.551	2.288	0.872
	(0.469)	(0.607)	(0.302)	(1.358)	(0.539)
Venda	0.788	0.685	0.423	5.182***	3.001*
	(0.425)	(0.441)	(0.288)	(3.288)	(1.997)
Tsonga	0.481	0.235**	0.609	0.587	1.395
	(0.234)	(0.151)	(0.371)	(0.333)	(0.839)
Receives old age grant	1.091	0.917	1.193	1.218	0.671
	(0.281)	(0.214)	(0.323)	(0.390)	(0.184)
Receives disability grant	0.590***	0.853	1.005	0.950	0.744*
	(0.088)	(0.130)	(0.159)	(0.162)	(0.128)
Receives child support grant	1.657*	1.115	2.494***	2.371**	0.934
	(0.508)	(0.368)	(0.833)	(0.876)	(0.324)
Receives care dependency grant	–	0.582	0.730	1.180	–
	–	(0.586)	(0.793)	(1.020)	–
Household size	1.100***	1.062***	1.037*	1.023	1.128***
	(0.018)	(0.017)	(0.019)	(0.018)	(0.026)
Total monthly household income	1.000***	1.000***	1.000***	1.000***	1.000***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Constant	0.645	0.213***	0.188***	0.162***	0.505
	(0.307)	(0.103)	(0.113)	(0.102)	(0.323)
Observations	4,445	3,545	3,074	2,838	2,902

Source: 2014–2018 GHS.

Notes: Data are weighted. Odds ratios are presented with standard errors in parenthesis. Geographic location estimates are not comparable for 2014. Sample includes all disabled people aged 15 and older. The reference categories are male, aged 60 and older, urban areas, Black, KwaZulu-Natal, never married, with a matric pass, employed, English, does not receive an old age grant, does not receive a disability grant, does not receive a child support grant, does not receive a care dependency grant. Significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

measuring how people with disabilities are considered during times of crises, or when living in vulnerable contexts. So, while this study data is reflective of SA until 2018, it ought to be contextualised relative to COVID-19. In the 2019–2020 pre-pandemic period, Stats SA redesigned a module for the 2019 GHS, viz.: the Food Insecurity Experience Scale (FIES) module [29]. The FIES, adopted by the United Nations, facilitates easier cross-country comparisons to monitor Sustainable Development Goal 2 targeting zero hunger. Recently [30] used the FIES to analyse data from the General Household Survey (2017–2020) and a 2020 survey conducted by the South African Vulnerability Assessment Committee (SAVAC) [30] indicated that in 2019, 17.3% (10.1 million) South Africans were moderately or severely food insecure, with 7% (4.1 million) in the latter category. Using data from SAVAC, Stats SA reported a worsened situation in 2020, with 23.6% experiencing moderate to severe food insecurity and more than double (14.9%) reported severe food insecurity [31] reported even more concerning data from the National Income Dynamics Study – Coronavirus Rapid Mobile (NIDS-CRAM) Survey (a telephonic survey done between May 2020 and May 2021) with 48%, then 35%, over the period of the five waves of NIDS-CRAM running out of money for food. Neither the NIDS-CRAM nor [30] use of FIES has produced data specific to people with disabilities fueling the need to focus disability on the South African food security agenda.

There as provincial disparities, such as that which existed (in 2014) between the North West and KwaZulu-Natal provinces, with the North West almost three times more likely to be food insecure compared to KwaZulu-Natal. In 2018, several South African provinces showed lower odds of food insecurity compared to KwaZulu-Natal. Eastern Cape (0.423), Free State (0.303), Gauteng (0.389), and Limpopo (0.097) all had significantly better food security situations. This pattern was not isolated to 2018 but was consistent throughout the entire period studied, indicating a persistent regional disparity in food security. These disparities in food insecurity may be attributed to several factors, such as people with disabilities experiencing higher unemployment rates and additional living costs, reducing income available for food. Accessibility issues can make it harder to obtain and prepare meals. Social isolation may limit access to support networks and resources. Healthcare disparities can exacerbate disabilities and impact overall well-being, including food security. However, concrete data would be needed to confirm these relationships and their specific impact in these provinces.

From 2014 to 2018, people with disabilities without schooling or a matriculation pass had significantly higher odds of food insecurity compared to those with matriculation. In 2017, those without schooling were almost 2.5 times more likely to be food insecure, and those without matriculation were twice as likely compared to those with matriculation. Unemployed people with disabilities faced higher food insecurity odds than those employed [25]. Higher food insecurity among people with disabilities lacking schooling or matriculation and the unemployed is due to several factors. Limited education reduces employment opportunities, leading to lower incomes and financial instability. Employment barriers, including discrimination and physical or social obstacles, exacerbate economic hardship. Higher living costs for medical care and assistive devices strain finances. Social isolation limits access to support networks. Limited awareness and access to food assistance programs increase food insecurity risks. Health issues associated with disabilities further reduce the ability to work and

increase medical costs. Addressing these factors through education, inclusive employment, and targeted support programs can mitigate food insecurity.

Just over one in three persons with disabilities are food insecure. Albeit for 2014–2018, this statistic remains especially concerning when considered in relation to Stats SA's food insecurity reference of "one in five" for all South Africans under pandemic conditions [30]. In our study, results indicate that households receiving grants, e.g., for child support remain food insecure. This may be because grants are not always received timeously [13] or used for non-food needs and, therefore, do not mitigate food insecurity as persons with disabilities in households receiving grants are not necessarily lifted out of food insecurity because not all of the grant is used on food items.

Data from 2015 indicates that people with disabilities in female-headed households are 1.3 times more likely to experience food insecurity compared to those in male-headed households. This contrasts with findings for able-bodied women, who traditionally manage food production, suggesting they have better food security [32]. The disparity highlights the unique challenges faced by people with disabilities in female-headed households, despite general assumptions about women's proficiency in food management. Indeed, immediate or short-term food security interventions should prioritise Black African women living in traditional areas as significantly in need. For 2017–2020 [30] reported that under 20% of households were growing their own food, with female headed households taking the lead in food production.

Our study findings highlight a significant oversight regarding a high-risk clinical population: people with eating and swallowing disabilities. The International Classification of Functioning (ICF) (WHO, 40) should help make these individuals more visible. For instance, several ICF codes pertain to Body Function (e.g., b250: taste function, b5101: biting, b5102: chewing, b5150: swallowing process), Body Structure (e.g., s3301: oral pharynx), Activities and Participation (e.g., d550: eating, d560: drinking, d630: preparing meals), and Environmental Factors (e.g., e110: food) [33]. Dysphagia can thus be classified and measured as a disability in clinical practice and is recognised as such [34,35]. However, the South African General Household Survey (SA GHS) used the Washington Group Short Set (WG-SS) on Functioning framework to collect data on six functioning domains: seeing, hearing, walking, cognition, self-care, and communication [36]. The WG-SS is inadequate for identifying and labelling vulnerable populations like those with swallowing disabilities, compared to other functions like walking. It is evident that food and nutrition are crucial for the survival of individuals with compromised eating and swallowing functions, yet the WG-SS does not directly assess these functions, even under the self-care domain, which only focuses on dressing and washing [37]. As a result, the GHS survey fails to increase the visibility of people with swallowing disabilities. If disability is a blind spot in sustainability research [38], then research on disability and food security marginalises people with eating and swallowing disabilities by using tools like the WG-SS in disability and other population-based surveys.

The analysis was restricted by the study population of South Africans aged 15 and older because our preference for a wider age range (children) was limited by our available dataset. Critically, food security (as defined within the GHS) restricted our ability to empirically reference constructs more typically focussed by food sovereignty like agency of people with disabilities regarding their food production, preparation, and consumption. Hence, the econometric model used may be understood as over-identifying and incorporating too many ableist variables into the model. National surveys (e.g., GHS, SAHANES, NIDS-CRAM, the SA Census) should design questions to foreground food sovereignty without relying on researchers' interpretive goodwill to create high level numerical impact. Until studies are designed to produce an empirical dataset that explores *why*, e.g., the intersection of race-gender-location matters, then food sovereignty will continue to be ignored in favor of a depoliticised food security framework.

This study leads to several recommendations especially the urgent need for policy changes to address food insecurity among people with disabilities in South Africa. First, it is essential that national surveys and censuses include comprehensive data on people with disabilities, particularly those with eating and swallowing disabilities. This inclusion will ensure that their unique needs are recognised and addressed during times of crisis and in vulnerable contexts. The study also highlights the importance of using updated metrics, such as the Food Insecurity Experience Scale (FIES). This tool facilitates easier cross-country comparisons and helps monitor progress towards achieving zero hunger, a key Sustainable Development Goal. Incorporating FIES into national surveys will provide a clearer picture of food insecurity and allow for more effective interventions. To address the unique challenges faced by people with disabilities, policies must prioritise targeted support programmes. These programmes should consider the higher living costs, employment barriers, and social isolation that people with disabilities often experience. By providing targeted assistance, these programmes can help mitigate the economic hardships that contribute to food insecurity. Additionally, adopting food sovereignty frameworks can significantly enhance the voice and visibility of people with disabilities in food security surveys. These frameworks emphasise the importance of involving people with disabilities in decisions about food production, preparation, and consumption, thereby promoting their agency and ensuring that their needs are met.

Conclusion

This is the first South African evidence set that serves to argue for the focussed inclusion of people with disabilities within national food security programmes. Especially under conditions such as the COVID-19 pandemic, the nutritional needs of people with disabilities cannot be managed using ableist focussed knowledges and methods. This data is particularly relevant for policy makers, health-care providers, civil society, and community workers. Notably, a limitation of the data is that there is a nil finding regarding the identification of a clinically established, vulnerable group, viz., people with swallowing disabilities implying the need to reconsider inclusive data collection strategies. The findings emphasise a need for community-based disability and rehabilitation programmes as configured within food security – or more specifically, food sovereignty.

This study has served as a point of reflection regarding people in Majority World countries like SA. Similar contexts with, e.g., refugees, minoritized peoples, and Indigenous populations (e.g., Māori, First Nations Peoples in North America, and Australia) need data to re-imagine their food sovereignty [35,40]. However, this data must make visible blind-spot, key clinical populations like people with swallowing disabilities. Critically, data needs to be onto-epistemologically authentic, reflective of Indigenous Peoples' epistemologies to approximate a decolonising agenda more closely [34,39,41].

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