

Consumer awareness and understanding, usage and attitude towards food labelling in Sunninghill and Alexandra, Sandton, South Africa

Shakun Naicker*, Ashika Naicker and Heleen Grobbelaar

Food and Nutrition, Durban University of Technology, Durban, South Africa

*Correspondence: shakun.cta@gmail.com



Background: Overweight and obesity are major public health concerns in South Africa. To address this, the Department of Health (DOH) has proposed Regulation R3337, introducing front-of-pack nutrition labelling (FOPNL) to support healthier food choices. However, consumer understanding and use of food labels remain low. Without targeted education, the effectiveness of FOPNL may be limited, highlighting the need for context-specific nutrition label education. The objective of the study was to assess awareness and understanding, usage and attitude towards food labels among consumers in Sandton, Gauteng.

Design: This study employed a cross-sectional design.

Setting: Sunninghill and Alexandra in Sandton, Gauteng, South Africa.

Subjects: South African adults ($n = 385$) were selected through convenience sampling, evenly divided between the two locations.

Outcome measure: Levels of perception and use of food labels were assessed through a structured interviewer-administered questionnaire.

Results: Participants from both locations demonstrated limited awareness and understanding of several food labelling components. Use of date labels (e.g. 'best before', 'use by' and 'sell by') was relatively similar across locations, with 20.7% of participants in Sunninghill and 20.3% in Alexandra reporting frequent use, $p < 0.001$. No significant difference was found between groups regarding the awareness and understanding, usage and attitude towards food labels $p < 0.001$.

Conclusion Consumers demonstrated limited awareness and engagement with food labels, regardless of education, income or location. Consumer education on food labelling is needed to promote informed purchasing decisions.

Keywords: consumer, food labelling, understanding, usage, knowledge, communities

Introduction

Overweight and obesity affect populations worldwide and represent critical public health challenges.¹ According to the World Health Organization (WHO), unhealthy diets, characterised by low intake of fruits and vegetables and increased consumption of foods high in fat, sugar and/or salt, are key modifiable risk factors for non-communicable diseases (NCDs) such as obesity, diabetes and cardiovascular diseases.² In response, nutrition labelling, in particular front-of-pack nutritional labelling (FOPNL), has been widely recognised as a policy tool to promote healthier food choices and support broader health strategies.³

FOPNL, particularly interpretive systems such as front-of-pack warning labels (FOPWL) has gained international attention for its role in helping consumers quickly and easily understand the nutritional quality of food products. Endorsed by global organisations such as Codex Alimentarius and the WHO, these labels are increasingly being adopted to address the burden of diet-related diseases.^{3,4}

The prevalence of overweight and obesity continues to burden South Africans, with 57.4% of adults classified as either overweight (25.3%) or obese (32.1%) according to the 2023 National Food and Nutrition Security Survey (NFNSS).⁵ To combat this, the South African Department of Health (DOH) has announced a draft Regulation Relating to the Labelling and Advertising of Foodstuffs – R3337, which introduces a mandatory FOPNL tool to support national health strategies.⁶ The draft FOPNL system for South Africa, similar to Chile's FOPWL, supports the

National Strategic Health Plan for the Prevention and Control of NCDs to reduce obesity, diabetes, hypertension and heart disease.⁶ This also aims to support informed consumer decision-making and promote healthier dietary habits; however, a major challenge persists. Evidence suggests that many South Africans neither read nor understand existing food labels.^{3,7} Label reading is not currently embedded in the country's food culture, and the complexity or inaccessibility of current label formats contributes to low usage.⁴ Much of the nutritional information is presented on the back or side of packaging, making it less visible and harder to interpret for time-constrained consumers.

Understanding consumer perceptions and behaviour towards food labels is critical, especially in the context of the draft Regulation Relating to the Labelling and Advertising of Foodstuffs – R3337.^{6,8} Research that explores these issues can guide implementation strategies and public health messaging, ensuring that labels function as effective tools for improving health outcomes. Insights into local food labelling knowledge and usage can also inform education campaigns, industry engagement and regulatory enforcement, which will be key pillars for the success of the new FOPNL system (draft Regulation Relating to the Labelling and Advertising of Foodstuffs – R3337).

International research^{9–11} has extensively investigated food-labelling evidence originating from high-income countries, highlighting a critical gap in understanding consumer responses in low- and middle-income contexts like South Africa.^{12–15}

Meanwhile globally, consumers consistently recognise and understand date labels on food products.^{3,7,9} Despite many consumers reporting limited time to read food labels in general, previous studies show that date labels, such as 'best before', 'expiry', 'sell by' and 'use by,' remain the most frequently consulted elements, as they provide information that consumers perceive as particularly meaningful.^{3,7,9}

This study seeks to contribute to the knowledge base by examining how South Africans in two socioeconomically diverse communities, Sunninghill and Alexandra, perceive and use food labels. In doing so, it aims to highlight the varying needs for labelling education and support systems across different income and education levels in South Africa.

Materials and methods

Study sample

A quantitative, cross-sectional study design was used. The sample size for a consumer survey with a population size of +1 000, with a 95% confidence level and 5% margin of error, is 384.¹⁶ A sample size of 385 participants, South African adults aged ≥ 18 years, all ethnic groups, inclusive of both genders, living in the targeted communities, participated in the survey with equal representation.

Nearly 60% of South Africans live in urban areas, reflecting the stark socioeconomic and demographic disparities rooted in its history of inequality.¹⁷ To capture this diversity, the study focused on Alexandra and Sunninghill in Sandton, Gauteng. Alexandra represents many low- to middle-income South African communities across the country, characterised by high unemployment, limited education, blue-collar work and dense housing¹⁸. In contrast, Sunninghill reflects more affluent urban suburbs, with higher education and employment levels, predominantly white-collar occupations and greater racial diversity (25.4% Black African, 3.4% Coloured, 20.6% Indian/Asian, 49.0% White).¹⁸ Though only 18.5 km apart, their sharp contrasts in income, infrastructure, lifestyle and access to services mirror broader inequalities in South Africa's cities.¹⁹ Studying these sites allowed for meaningful comparisons of food-label awareness across socioeconomic groups while minimising regional variation and supporting in-person data collection.

Exclusion criteria included non-South African citizens, anyone younger than 18, and those residing outside Sunninghill and Alexandra, Sandton, in Gauteng province.

Sampling method

Convenience sampling was used to recruit participants from Sunninghill and Alexandra from public places such as schools, taxi ranks, Gautrain bus stops and the train station. Due to the limited availability of residents at home and challenges of access to gated estates, household recruitment was not feasible. As a result, participant engagement was extended to accessible community spaces such as restaurants, churches, salons, shopping centres, gyms and car-wash stations. This approach facilitated easier and more efficient interaction with a diverse cross-section of the population in both communities.

Potential participants were screened for eligibility and were given a letter of information explaining the nature of the study. Upon consent, the Consumer Food Labelling Survey (CFLS) questionnaire was administered face-to-face in these public spaces. The questionnaire was designed in English,

then translated by professional translators to isiZulu and isiXhosa. The questionnaire was to was administered in English in Sunninghill and isiZulu and isiXhosa in Alexandra. The survey took an average of 7–15 minutes to complete and was administered from January to November 2024, closing once the target sample size was reached.

Measuring tool

The CFLS questionnaire was adapted from previously validated instruments used in South African studies assessing consumer knowledge and use of food labelling.^{3,11,20} Content validity was assessed by a statistician to ensure the instrument was aligned with the specific objectives of the study. The questionnaire was reviewed by the research team for formatting, clarity, relevance and appropriateness. Modifications were made to the layout and constructs to enhance contextual relevance. The CFLS comprised items assessing consumer awareness and understanding, usage and attitudes towards food labels. Additionally, it was confirmed through consultation with a statistician that the items were appropriate, measurable, and that the rating scales were correctly applied, supporting the reliability and accuracy of the data generated.

Data analysis

Data were checked and cleaned before statistical analysis. Statistical analysis was performed using the Statistical Package for Social Sciences (IBM SPSS®) version 29, (IBM Corp, Armonk, NY, USA). Descriptive statistics were used to define the proportion of responses for each question. Statistical significance was accepted as $p < 0.05$. A power analysis was done once the study was completed. Comparative analysis was conducted to gain further insights that were representative of the findings in each community. Means were calculated through a one-sample t-test to determine whether a mean score is significantly different from a scalar value. In this test, the average agreement score is tested against the central score of '3' to determine if it differs significantly from '3'. If there was a significant difference ($p < 0.05$), a significant agreement was interpreted if the mean score was > 3 and a significant disagreement if the mean score was < 3 .

Ethical considerations

This study employed non-invasive methods and adhered to strict anonymity protocols. Participation was voluntary with the option to withdraw at any time. Ethical approval was granted by the Durban University of Technology (DUT) Institutional Research Ethics Committee (IREC 201/23).

Results

The results of the CFLS are presented in thematic groupings in relation to food labels: consumer awareness and understanding, usage and attitude, supported by thematic tables. No participants were excluded during the data-cleaning process.

Demographic characteristics of participants

Figure 1 shows the demographic profile of the $n = 385$ CFLS participants, evenly split between Sunninghill ($n = 192$) and Alexandra ($n = 193$). The sample comprised 64.2% females and 35.8% males, with an age range of 18–75 years, and higher participation among younger adults (18–35 years). Female representation was greater in both locations, with 63.2% in Sunninghill and 65.1% in Alexandra. Educational attainment differed markedly: only 21.7% of Alexandra participants had completed tertiary education (62.5% had partially or fully completed high school), compared with 80.8% of Sunninghill participants who held a tertiary qualification.

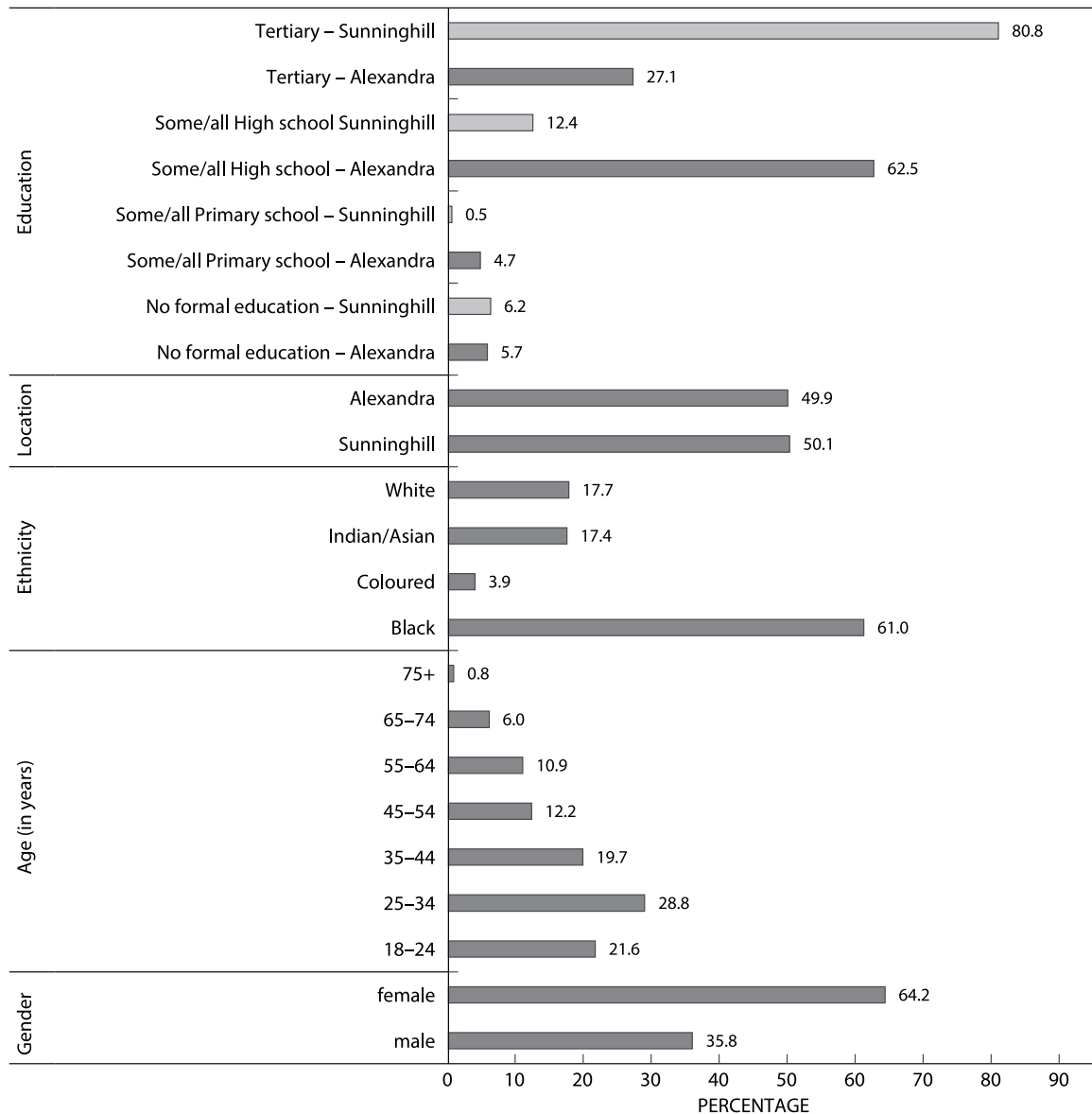


Figure 1: Demographic characteristics of participants in the CFLS ($n = 385$).

Data from the two study sites were initially pooled ($n = 385$) to enable a comprehensive analysis that reflects the socioeconomic and demographic diversity characteristic of SA's urban population. The decision to pool the data was informed by the study's objective to explore overall patterns in food-label awareness and understanding, usage and attitude before disaggregating by location to assess context-specific differences. Pooling was further justified by the geographic proximity of the sites (only 18.5 km apart), which minimised regional variation in environmental exposures, media access and food availability that could otherwise confound the results. Pooling the data enabled an initial analysis that captured general trends across the urban spectrum before conducting stratified analyses by location. The CFLS intentionally aimed to gather data from participants regarding their awareness and understanding of food labels, as well as their usage and attitudes towards food labels.

Comparative analysis of participant awareness and understanding of food labelling across locations

Table 1 presents self-reported data from $n = 385$ participants, consisting of probing questions that address participant

awareness and understanding, assessed using a five-point Likert scale ('I have no idea what this is/where to find it' or 'I know what this is/where to find it but I do not understand it at all' or 'I know what this is/where to find it and I understand a little about what it means' or 'I know what this is/where to find it and I understand quite a lot about what it means' or 'I know what this is/where to find it and I understand exactly what it means'). Comparison of food labelling awareness and understanding between the two study communities (Table 1) revealed statistically significant differences, with the Alexandra population demonstrating lower levels of awareness and understanding regarding food labels.

Some of these findings include a higher sample of participants in Sunninghill having higher levels of awareness and understanding of some food-label elements in comparison with Alexandra, such as 21.4% in Sunninghill reporting 'I know and understand completely' about ingredients in product, compared with the 28.1% in Alexandra reporting the opposite, 'I know but do not understand it at all'. For the relative proportion of the ingredients in a product, again, significant differences were observed in the two communities, with 29.5% of Sunninghill participants reporting 'I know and understand a little'

Table 1: Comparative analysis of participant awareness and understanding of food labelling across locations

Variable	Location	Responses as frequency (%)					χ ²	df	p-value
		I do not know	I know but do not understand at all	I know and understand a little	I know and understand quite a lot	I know and understand completely			
Total amount of, e.g., sodium, sugar, fat in a product	Sunninghill	22 (11.4)	39 (20.2)	77 (39.9)	29 (15.0)	26 (13.5)	50.597	4	< 0.001
	Alexandra	65 (33.9)	54 (28.1)	31 (16.1)	12 (6.3)	30 (15.6)			
Allergens in the product	Sunninghill	16 (8.3)	29 (15.0)	60 (31.1)	31 (16.1)	57 (29.5)	50.597	4	< 0.001
	Alexandra	51 (26.6)	48 (25.0)	52 (27.1)	31 (16.1)	10 (5.2)			
Food additive and E-number information	Sunninghill	62 (32.1)	40 (20.7)	59 (30.6)	16 (8.3)	16 (8.3)	28.494	4	< 0.001
	Alexandra	106 (55.2)	39 (20.3)	30 (15.6)	13 (6.8)	4 (2.1)			
Date labels: best before, use by; expiry, sell by	Sunninghill	9 (4.7)	24 (12.4)	58 (30.1)	24 (12.4)	78 (40.4)	30.222	4	< 0.001
	Alexandra	16 (8.3)	44 (22.9)	74 (38.5)	27 (14.1)	31 (16.1)			
Ingredients in the product	Sunninghill	24 (12.4)	26 (13.5)	70 (36.3)	26 (13.5)	47 (24.4)	33.060	4	< 0.001
	Alexandra	31 (16.1)	54 (28.1)	71 (37.0)	25 (13.0)	11 (5.7)			
Relative proportion of the ingredients in a product	Sunninghill	63 (32.6)	31 (16.1)	57 (29.5)	15 (7.8)	27 (14.0)	35.414	4	< 0.001
	Alexandra	111 (57.8)	36 (18.8)	23 (12.0)	11 (5.7)	11 (5.7)			

χ² = chi-square statistic; df = degrees of freedom; p-values indicate significance of group differences by locale. The values in bold indicate significance; p < 0.005.

compared with the 57.8% participants in Alexandra reporting the opposite, 'I do not know'. Similarly, for nutrients (i.e. the total amount of sodium, sugar and fat in a product), 39.9% of participants in Sunninghill reported 'I know and understand a little', while 33.9% in Alexandra reported 'I do not know'. Regarding awareness and understanding of product allergens, 29.5% in Sunninghill reported 'I know and understand completely', while 26.6% in Alexandra reported the opposite, 'I do not know'. Significant difference was reported by participants in the two locations concerning awareness and understanding of food additives and E-number information, with 30.6% in Sunninghill reporting 'I know and understand a little', and 54.7% in Alexandra reporting the opposite, 'I do not know'. Participants across both locations were familiar with date labels: best before, use by, expiry, and sell by, with 34.3% of the total sample reporting that 'I know and understand a little about date labels'. The study found that females across both locations (mean = 1.40) reported higher levels of awareness and understanding of food labels significantly more than males (mean = 1.16), $p = .016$. The overall result indicated that age positively correlates with awareness and understanding of food labels, $\rho = 0.133$, $p < 0.001$, in that older people are associated with greater awareness and understanding of food labels. Results emphasise that younger participants are either unaware or uninformed about food labels. From this, it can therefore be assumed that participants do not often understand food labels.

Comparative analysis of participant usage of food labels across locations

Table 2 presents self-reported comparative analysis of participant responses from the two communities on food label usage, consisting of probing questions that addressed consumer usage of food labels, assessed using a five-point Likert scale (never, rarely, sometimes, often, always). Pearson's chi-square test was conducted to determine whether a significant relationship exists between participants' location and the frequency of label usage across various items.

When participants in the two locations were asked to indicate how often the information on the label is used to determine ingredients in a product, 20.7% in Sunninghill reported 'often' while 37.0%, $p < 0.001$, in Alexandra reported 'never'. Similarly, in response to using food labels to assess the relative proportion of ingredients, 28.5% in Sunninghill reported 'sometimes', compared with 51.6% in Alexandra who reported 'never' ($p < 0.001$). For nutrient composition (information regarding sodium, sugar and fat), 30.6% in Sunninghill reported 'sometimes', whereas 58.3% ($p < 0.001$) in Alexandra reported 'never' using labels for this purpose. In contrast, responses regarding the use of labels to determine the health and nutritional benefits of products, such as 'suitable for diabetics', 'reduces cholesterol', 'wholesome' and 'supports protein deficiency' and 'gut health', were different in both communities. In Alexandra, 43.8% reported 'never' using labels for this purpose, while in Sunninghill, 17.1% reported 'sometimes' and 11.4% reported 'often' ($p < 0.001$). Usage of food labels for 'specific product claims' (e.g. sugar-free, low fat, low carbohydrate, low sodium) varied by location: in Sunninghill, 14.4% reported 'always' and 17% 'often', whereas in Alexandra, 44.3% reported 'never'. Between the two locations, in terms of FOPNL usage, the results were vastly different. Just under half of the participants in Alexandra, 43.8%, reported 'never' using FOPNL, compared with Sunninghill, where 15.5% reported 'sometimes' and 10.4% reported 'often', $p < 0.001$. The usage

Table 2: Comparative analysis of participant usage of food labels across locations.

Variables	Location	Responses as Frequency (%)					χ^2	df	p-value
		Never	Rarely	Sometimes	Often	Always			
Ingredients in a product	Sunninghill	39 (20.0)	33 (20.2)	69 (17.1)	40 (20.7)	12 (6.2)	37.849	4	< 0.001
	Alexandra	71 (37.0)	31 (26.6)	56 (29.2)	8 (4.2)	6 (3.1)			
Relative proportion of the ingredients in a product	Sunninghill	53 (27.5)	48 (24.9)	55 (28.5)	28 (14.5)	9 (4.7)	35.379	4	< 0.001
	Alexandra	99 (51.6)	54 (28.1)	24 (12.5)	13 (6.8)	2 (1.0)			
Nutrient composition of the product (sodium, sugar, fat) in a product	Sunninghill	54 (28.0)	46 (23.8)	59 (30.6)	25 (13.0)	9 (4.7)	39.839	4	< 0.001
	Alexandra	112 (58.3)	36 (18.8)	29 (15.1)	9 (4.7)	6 (3.1)			
Date the product should be eaten/sold by	Sunninghill	25 (13.0)	21 (10.9)	59 (30.6)	40 (20.7)	48 (24.9)	10.457	4	< 0.001
	Alexandra	45 (23.4)	15 (7.8)	62 (32.3)	39 (20.3)	31 (16.1)			
When product expires	Sunninghill	23 (11.9)	14 (7.3)	57(29.5)	42 (21.8)	57 (29.5)	6.725	4	< 0.001
	Alexandra	41 (21.4)	11 (5.7)	54 (28.1)	40 (20.8)	46 (24.0)			
Food additives in products	Sunninghill	80 (41.5)	40(20.7)	45 (23.3)	17 (8.8)	11 (5.7)	15.988	4	< 0.001
	Alexandra	110 (57.3)	36 (18.8)	33 (17.2)	12 (6.3)	1 (0.5)			
Health and nutrition benefits of the product, e.g. suitable for diabetics, can reduce cholesterol, wholesome, support protein deficiency, gut health	Sunninghill	51 (26.4)	26 (13.5)	61 (31.6)	33 (17.1)	22 (11.4)	27.280	4	< 0.001
	Alexandra	84 (43.8)	34 (17.7)	55 (28.6)	13 (6.8)	6 (3.1)			
Any specific product claims, e.g. sugar free, low fat, low carbohydrate, low sodium	Sunninghill	47 (24.4)	25 (13.0)	61 (31.6)	33 (17.1)	27 (14.0)	37.058	4	< 0.001
	Alexandra	85 (44.3)	30 (15.6)	61 (31.6)	10 (5.2)	6 (3.1)			
Front of pack nutrition labels	Sunninghill	53 (27.5)	34 (17.6)	56 (29.6)	30 (15.5)	20 (10.4)	26.024	4	< 0.001
	Alexandra	90 (46.9)	40 (20.8)	43 (22.4)	13 (6.8)	6 (3.1)			

χ^2 = chi-square statistic; df = degrees of freedom; p-values indicate significance of group differences by location. The values in bold indicate significance: $p < 0.005$.

patterns for date labels (e.g. best before, use by, sell by) were relatively similar across both communities, with 20.7% in Sunninghill and 20.3% in Alexandra reporting 'often' for the usage of this information on labels ($p < 0.001$). This result aligns with the results presented earlier, suggesting that date labels are among the most consistently consulted by participants.

Participant attitude towards food labels (n = 385)

Table 3 presents a comparative analysis of participant self-reported data, examining the differences in average agreement scores across communities when participants were asked to rate statements addressing their attitude towards food labels, assessed using a five-point Likert scale (disagree, strongly disagree, neutral, agree, and strongly agree).

Participants across both locations significantly agreed, $p < 0.001$, that 'food labels are complicated to read' (78% in Sunninghill and 67.2% in Alexandra), 'reading food labels can influence health' (63.6% in Sunninghill and 47.2% in Alexandra), 'food labels are useful when making healthy food choices' (87.8% in Sunninghill and 66.4% in Alexandra), one should 'always look at the date labels of products you purchase' (83.6% in Sunninghill and 75.6% in Alexandra) and 'I think symbols on packaging help me understand more about the product' (87.8% in Sunninghill and 80.8% in Alexandra), $p < 0.001$.

There was significant disagreement that 'food labels are not useful for the consumer but rather for the manufacturer' (48% in Sunninghill and 52% in Alexandra), 'I do not have time to read labels' (63.2% in Sunninghill and 49.8% in Alexandra), 'I don't need to read and understand food labels' (47.4% in Sunninghill and 48.6% in Alexandra), and 'I use food labels to

influence food choices' (63.6% in Sunninghill and 47.2% in Alexandra).

Discussion

Awareness and understanding of food labels are influenced by multiple factors, and previous studies have highlighted the complexity of food labelling and its effect on consumer awareness and understanding.⁹ It has been well documented in the literature that consumers find it challenging to read product labels and have firmly advocated for consumer food labelling education to be part of government legislation to promote more use of nutrition labels.^{3,7,21–23} Effective nutrition labelling depends on consumers' ability to interpret and apply this information for health benefits.^{23,24} This study examined consumer awareness, understanding, usage and attitudes towards food labels in relation to demographic characteristics, including location, gender, age and education, across two socioeconomically diverse South African communities: Alexandra and Sunninghill. The findings confirmed that consumers in both locations demonstrated limited knowledge of and interaction with food labels across gender, age and education groups. Key gaps included low awareness and understanding of food labels, minimal use of labels in purchasing decisions, and generally negative attitudes towards labelling. Similar concerns regarding the complexity of labelling and limited consumer comprehension have been noted in previous research.⁹ The study's results were therefore expected, aligning with a prior South African studies^{3,10} and international evidence showing comparable challenges globally.^{7,9}

The demographic profile of the two study populations reflects clear socioeconomic and educational differences between Alexandra and Sunninghill. Participants in Sunninghill were generally more highly educated, with a larger proportion

Table 3: Participant level of agreement on attitude towards food labels across locations.

Construct	Location	n	Mean (SD)	Mean %	t	df	p-value
Food labels are not useful for consumers but rather for the manufacturer	Sunninghill	193	2.4 (1.654)	48.0%	-0.688	370.644	0.492
	Alexandra	192	2.6 (1.368)	52.0%			
Food labels are complicated to read	Sunninghill	193	3.90 (1.241)	78.0%	-4.154	388	0.000
	Alexandra	192	3.36 (1.295)	67.2%			
I do not have time to read food labels	Sunninghill	193	3.16 (1.428)	63.2%	4.965	369.608	0.661
	Alexandra	192	2.49 (1.171)	49.8%			
I believe reading food labels can influence my health	Sunninghill	193	4.30 (0.936)	86.0%	8.804	358.975	0.000
	Alexandra	192	3.34 (1.200)	66.8%			
Food labels are useful when trying to make healthy food choices	Sunninghill	193	4.39 (0.896)	87.8%	9.816	350.617	0.000
	Alexandra	192	3.32 (1.219)	66.4%			
You should always look at the date label of the products you purchase, e.g. use by, expiry or sell-by date	Sunninghill	193	4.51 (0.817)	90.2%	6.160	364.738	0.000
	Alexandra	192	3.93 (1.021)	78.6%			
Health information cannot be believed as it is a form of advertising	Sunninghill	193	3.67 (1.214)	73.4%	0.738	383	0.461
	Alexandra	192	3.58 (1.186)	71.6%			
I don't need to read and understand food labels	Sunninghill	193	2.37 (1.543)	47.4%	-0.411	370.664	0.682
	Alexandra	192	2.43 (1.276)	48.6%			
I use food labels to influence my food choices	Sunninghill	193	3.18 (1.494)	63.6%	5.709	376.866	0.000
	Alexandra	192	2.36 (1.307)	47.2%			
I think symbols on packaging help me understand more about the product	Sunninghill	193	4.39 (0.866)	87.8%	3.580	383	0.001
	Alexandra	192	4.04 (1.080)	80.8%			

holding tertiary qualifications, whereas those in Alexandra had predominantly high school education. Education is widely recognised as a determinant of health literacy and nutrition label interpretation.²⁵ A study in the Western Cape similarly found that educated, older and predominantly white consumers demonstrated greater nutrition label use and comprehension.³ Previous studies have shown that the level of education plays an important role in the use of food labels.^{7,23,24} However, education did not consistently translate into higher awareness or understanding; both communities showed similarly low knowledge of essential nutrition label components. This highlights that education level alone does not guarantee label comprehension.

Awareness and understanding

Overall awareness and understanding of key labelling elements, including ingredient lists, food additives, E-numbers, serving sizes and nutrient information, were low across the sample, with significantly lower levels in Alexandra. These findings suggest that many South African consumers are not equipped to interpret nutrition labels, limiting their ability to make informed food choices, a gap that could undermine public health efforts to address diet-related NCDs. Despite this, both communities consistently recognised and understood date labels. Previous research shows that although many consumers report insufficient time to read food labels, date labels (e.g. best before, expiry, sell by, use by) remain the most frequently consulted element influencing purchasing decisions, as they provide information perceived as meaningful.^{7,24} This pattern is consistent globally, where date labels are universally recognised due to their strong association with food safety.^{7,25}

Females demonstrated higher awareness and understanding of food labels than males, aligning with literature linking women's greater involvement in food purchasing and attention to nutrition information.^{7,9,25} Age did not significantly influence awareness, consistent with prior findings that age is not a major

determinant of label comprehension.^{11,20,25} Education also showed no meaningful influence: although 80.8% of Sunninghill participants had tertiary education compared with only 21.7% in Alexandra, awareness and understanding remained low across the sample. Sunninghill's high tertiary education rates did not translate into substantially better awareness or understanding, indicating that broader issues, such as label complexity, terminology and design, likely limit comprehension across socioeconomic groups. Awareness of warning labels, food additives and E-numbers was low. Serving size guidance was poorly understood, and participants were largely unaware of nutrient information such as sodium, sugar and fat, including where these data were located on packaging.

Usage

Food label usage was extremely low in both communities, indicating that labels are rarely used to inform healthier choices. Despite the widespread promotion of food labels as tools for making healthy choices,^{1,3,7,11} the majority of participants reported rarely or never using them to evaluate nutrient composition, product claims or FOPNL, especially due to time constraints. This passive behaviour mirrors findings from a study conducted in four health districts in Cape Town,³ where 36.67% of participants never or seldom read the nutrition information on the food labels, 29% sometimes did, while 36.04% indicated that they frequently or consistently read the nutrition information.³ Reported barriers included font size, often too small for consumers to read,²³ and the perception that labels are 'too busy', reflecting the increasing volume and complexity of information provided.^{3,23} Interpretation difficulties further limit usage, as many consumers struggle with scientific jargon, navigation of complex information and language barriers. In South Africa, English is the mandatory language for food labels.⁶ This creates challenges for consumers who do not speak English as a first language.¹⁷ While limited education exacerbates the problem, given that a substantial portion of the population has little or no formal schooling,¹⁷

the barrier extends beyond education. Despite Sunninghill participants having higher levels of education than participants in Alexandra, label usage remained low in both communities. These findings suggest that language and literacy barriers, rather than education level alone, significantly contribute to low food label usage in South Africa. Overall, low usage in both communities highlights systemic issues in label accessibility and interpretability.

Attitude

The study revealed mixed consumer attitudes toward food labelling. While participants acknowledged the potential health benefits of labels, perceptions of complexity and disinterest were also evident. Sunninghill participants generally displayed more positive attitudes, reporting that labels supported healthier food choices and had a positive influence on health outcomes. In contrast, Alexandra participants prioritised food price and affordability over label information, reflecting broader socioeconomic barriers such as unemployment, poverty and inequality in South Africa.¹⁷ Alexandra participants reported greater disinterest in food labels, stronger agreement with not having time to read labels and a preference for cheaper brands regardless of nutritional content. A key finding was the relationship between awareness and attitude: individuals with higher levels of education and health literacy exhibited more positive perceptions of food labels, underscoring the role of education in shaping consumer engagement. Nonetheless, overall attitudes towards food labelling were largely negative across the sample. Many participants agreed that labels served manufacturers rather than consumers, were difficult to read and were impractical given time constraints. Sunninghill participants reported stronger agreement than those in Alexandra on using labels to guide purchasing decisions and to stay informed about the products they consume. Similarly, they expressed greater agreement that product symbols aid in understanding product information. These findings highlight the influence of education levels and demonstrate the interplay between sociodemographic factors and consumer engagement with food labelling. Economic differences were evident: while Alexandra consumers emphasised affordability, Sunninghill participants disagreed, suggesting that income reduces price sensitivity in food choices. These findings demonstrate how socioeconomic conditions, income and nutrition literacy shape consumer engagement with labelling.

Policy and public health implications

The findings have direct policy relevance to South Africa's draft Regulation R3337, which proposes simplified, standardised front-of-pack labelling (FOPL) to enhance consumer understanding and promote healthier choices. The consistently low awareness, understanding and use of existing labels across both high- and low-income settings highlight the need for more accessible, interpretive labelling systems. International evidence has shown that simplified labels, such as colour-coded systems, warning labels and symbol-based indicators, improve comprehension among low-literacy populations and support healthier purchasing decisions.⁴ Given the limited ability of participants in both communities to interpret nutrient tables, serving sizes and technical terminology, simplified FOPL systems could directly address these barriers. The results also highlight the need for complementary consumer education to support the rollout of R3337, particularly in socioeconomically disadvantaged communities. Integrating health and nutrition education into national campaigns, while tailoring communication

to diverse linguistic and literacy needs, would strengthen public understanding of the proposed FOPL system.

Study limitations and strengths

The use of convenience sampling may have introduced selection bias, limiting the generalisability of the findings. Additionally, self-reported data on food label habits and attitudes carry risks of social desirability and recall bias. Despite these limitations, the study provides valuable insights into the low awareness, understanding and use of food labels among South African consumers. The findings underscore the urgent need for targeted consumer education, including campaigns and materials that enhance comprehension and encourage informed dietary choices.

Conclusion

In South Africa, where diet-related NCDs are on the rise and food insecurity coexists with poor dietary quality, nutrition labelling has the potential to serve as a powerful public health tool. However, its impact is limited unless consumers are equipped with the skills and motivation to use label information effectively. The findings confirm the difficulty South Africans face in understanding food labels, as reading labels has not been a prominent cultural practice to aid decisions concerning the products South Africans consume.^{3,7,22} While some components of food labels, particularly date-related information, are recognised and occasionally used, there is limited comprehension and application of more technical aspects. This limits the utility of food labels in driving healthier consumer choices. There is an urgent need for nationwide interventions to enhance food labelling and health and nutrition literacy. Policy-makers should use evidence from this and previous studies to inform and strengthen public health policies in South Africa. Manufacturers and food retailers should actively support consumer food-label education, rather than relying solely on the presence of labels. Given their broad consumer reach, partnering with the government to implement health literacy programmes is essential, and there remains an opportunity to embed this approach within the proposed Regulation R3337. Ultimately, this study reinforces the importance of embedding food labelling education within broader public health and nutrition strategies. A unified national effort is required to promote label usage, build consumer trust and support informed dietary decision-making, contributing to healthier communities and reducing the burden of diet-related diseases in South Africa.

Disclosure statement – No potential conflict of interest was reported by the authors.

References

- Goetjes E, Pavlova M, Hongoro C, et al. Socioeconomic inequalities and obesity in South Africa – a decomposition analysis. *Int J Environ Res Public Health*. 2021;18(17):1–13.
- World Health Organization. *Global Nutrition Report 2022*. Geneva: WHO; 2022. pp. 12–13.
- Koen N, Wentzel-Viljoen E, Nel D, et al. Consumer knowledge and use of food and nutrition labelling in South Africa: a cross-sectional descriptive study. *Int J Consum Stud*. 2018;42:335–342. <https://doi.org/10.1111/ijcs.12422>
- Bopape M, De Man J, Taillie LS, et al. Effect of different front-of-package food labels on identification of unhealthy products and intention to purchase the products: a randomised controlled trial in South Africa. *Appetite*. 2022;179:106283.
- Human Sciences Research Council. *National food and nutrition security survey report*. Pretoria: HSRC; 2024. pp. 1–152.

6. National Department of Health. Draft regulations related to marketing and advertising of foodstuffs (R3337) of 14 April 2023. Pretoria: National Department of Health; 2023; Available from: https://www.gov.za/sites/default/files/gcis_document/202304/48428rg11572gon3287.pdf.
7. Moreira JJ, García-Díez JM, Almeida MM, et al. Evaluation of food labelling usefulness for consumers. *J Consum Stud*. 2019;43(4):327–334. <https://doi.org/10.1111/ijcs.12511>
8. Reyes M, Garmendia ML, Olivares S, et al. Development of the Chilean front-of-package food warning label. *Int J Equity Health*. 2019;18:1981. <https://doi.org/10.1186/s12889-019-7118-1>
9. Kempen E, Bosman M, Bouwer C, et al. An exploration of the influence of food labels on South African consumers' purchasing behaviour. *Int J Consum Stud*. 2011;35(1):69–78. <https://doi.org/10.1111/j.1470-6431.2010.00928.x>
10. Jacobs SA, de Beer H, Larney M. Adult consumers' understanding and use of information on food labels: a study among consumers living in the Potchefstroom and Klerksdorp regions, South Africa. *Public Health Nutr*. 2011;14(3):510–522. <https://doi.org/10.1017/S1368980010002430>
11. Bosman JC, Van der Merwe D, Ellis SM, et al. South African adult metropolitan consumers' opinions and use of health information on food labels. *Br Food J*. 2013;116(1):30–43. <https://doi.org/10.1108/BFJ-12-2011-0298>
12. Hutton TR, Gresse A. Objective understanding of five front-of-pack labels among consumers in Nelson Mandela Bay. *S Afr J Clin Nutr*. 2022;35(3):108–114. <https://doi.org/10.1080/16070658.2021.1991674>
13. Bopape M, Taillie LS, Frank T, et al. South African consumers' perceptions of front-of-package warning labels on unhealthy foods and drinks. *PLoS One*. 2022;16(9):e0257626. <https://doi.org/10.1371/journal.pone.0257626>
14. Bopape MM. The effectiveness of front-of-pack warning labels in assisting South African consumers to identify unhealthy packaged foods. PhD thesis. Pretoria: University of Pretoria; 2024.
15. Mabotja FS, Metcalfe DJ, Adebo OA. South African consumers' interpretation of nutritional labelling systems of food products. *Trans R Soc S Afr*. 2020;76:41–51. <https://doi.org/10.1080/0035919X.2020.1834466>
16. Taherdoost H. Determining sample size: how to calculate survey sample size. *Int J Econ Manag Sci*. 2017;2:1–3.
17. Statistics South Africa. Media release: census 2022 population count results, 10 October 2023. Pretoria: Stats SA; 2023; Available from: www.statssa.gov.za.
18. Department of Employment and Labour. Department of employment and labour. Pretoria: Government of South Africa; 2025; Available from: <https://www.labour.gov.za/Pages/Default.aspx> (accessed 7 March 2025).
19. South African Tourism. Alexandra Heritage Precinct – Historic and Iconic. 2025. Available from: <https://www.southafrica.net/za/en/travel/article/alexandra-heritage-precinct-historic-and-iconic> (accessed 7 March 2025)
20. Van der Merwe D, Bosman M, Ellis S, et al. Consumers' knowledge of food label information: an exploratory investigation in Potchefstroom, South Africa. *Public Health Nutr*. 2012;16(3):403–408.
21. Shukla Y, Chandra T. Impact of product label on domains of consumer education: a study on consumers of Uttarakhand, India. *J Posit Sch Psychol*. 2022;6(2):354–365. Available from: <https://journalppw.com/index.php/jpsp/article/view/10809/6975>.
22. Koen N, Blaauw R, Wentzel-Viljoen E. Food and nutrition labelling: the past, present and the way forward. *S Afr J Clin Nutr*. 2016;29(1):13–21. <https://doi.org/10.1080/16070658.2016.1215876>
23. Mahlangu E, Bekker JL, Nkosi DV. Consumer knowledge and understanding of food labelling information in Klipgat region, South Africa. *Afr J Food Agric Nutr Dev*. 2024;24(1):25578–25602. <https://doi.org/10.22004/ag.econ.340624>
24. Moore SG, Donnelly JK, Jones S, et al. Effect of educational interventions on understanding and use of nutrition labels: a systematic review. *Nutrients*. 2018;10(10):1–14. <https://doi.org/10.3390/nu10101432>
25. Mehanna A, Ashour A, Mohamed DT. Public awareness, attitude, and practice regarding food labelling, Alexandria, Egypt. *BMC Nutr*. 2024;10:15. <https://doi.org/10.1186/s40795-023-00770-5>

Received: 10-03-2025 Accepted: 12-01-2026