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ASSOCIATION BETWEEN SOCIO-ECONOMIC AND DEMOGRAPHIC FACTORS AND FAST-FOOD CONSUMPTION IN LEPHALALE, LIMPOPO PROVINCE, SOUTH AFRICA

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ABSTRACT

Fast food consumption is increasing globally and is associated with unhealthy dietary patterns and a growing burden of non-communicable diseases. In rural communities, where access to diverse and nutritious foods may be limited, socio-economic and demographic factors play an important role in shaping dietary choices. Despite increasing fast food availability in rural South Africa, evidence on the determinants of consumption in such settings remains limited. This study examined the influence of socio-economic, demographic, and lifestyle factors on fast food consumption among adults in Lephalale, Limpopo Province. A cross-sectional survey was conducted among 1063 individuals aged 18 years and older using a structured questionnaire. Data were collected on fast food consumption frequency, age, sex, income, education, occupation, health consciousness, and time availability. Descriptive statistics were used to summarise consumption patterns across population groups. Univariate and multivariate logistic regression analyses were performed to identify significant predictors of frequent fast-food consumption, with odds ratios and 95% confidence intervals calculated. Overall, 58.2% of participants reported consuming fast food at least weekly. Among individuals aged 18–24 years, 25% reported daily consumption and 35% weekly consumption. In the 25–34 age group, 20% reported daily consumption and 40% weekly consumption. Daily consumption among males was 22% compared to 15% among females, while weekly consumption was 35% among males and 30% among females. Participants with a high school education reported 30% daily and 40% weekly consumption. Full-time workers reported 20% daily and 40% weekly consumption, while students reported 30% daily and 40% weekly consumption. Low-income individuals had higher odds of frequent fast-food consumption compared to high-income individuals (AOR=1.92, 95% CI: 1.30–2.80). Individuals aged 18–24 years had higher odds of frequent consumption (AOR=3.02, 95% CI: 1.80–5.11), and males had higher odds than females (AOR=1.82, 95% CI: 1.06–3.14). Participants with a high school education had increased odds of frequent consumption (AOR=1.65, 95% CI: 1.01–2.67). Individuals with low health consciousness had higher odds of frequent consumption (AOR=2.12, 95% CI: 1.26–3.57), and those with high time availability also had higher odds (AOR=2.22, 95% CI: 1.33–3.71). Among adults residing in Lephalale, frequent fast-food consumption was associated with younger age, male sex, lower income, lower educational attainment, low health consciousness, and higher time availability. These findings support targeted nutrition education for young adults and lower-income groups, alongside improved access to affordable, nutritious food options and health awareness initiatives to encourage healthier diets.

Key words: Socio-economic factors, rural populations, dietary behaviour, income, education

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INTRODUCTION

Dietary choices are shaped by a complex interplay of socio-economic, demographic, behavioural, and environmental factors, with important implications for public health outcomes [1]. These influences affect food preferences and purchasing behaviours, contributing to increasing consumption of convenience foods and fast foods across many populations [2,3]. Globally, changing food environments and the nutrition transition have contributed to shifts from traditional diets towards energy-dense, highly processed foods, particularly in low- and middle-income countries [4,5].

Fast food consumption has been associated with adverse health outcomes, including obesity and cardiovascular disease, particularly among socio-economically disadvantaged populations [6]. Socio-economic factors play a critical role in shaping dietary behaviour. Income, education, occupation, and food affordability influence access to and selection of food products [7,8]. Lower-income households often face barriers to accessing healthier foods and may rely on inexpensive, energy-dense alternatives, while educational attainment may influence nutrition knowledge and health-related decision-making [7].

Globally, changing lifestyles, urbanisation, and increased exposure to processed foods have contributed to shifts in dietary choices across diverse populations [9–12]. Similar patterns have been observed in developed countries, where fast-food consumption is often driven by affordability, convenience, and accessibility [13–15]. These trends highlight the growing importance of understanding the factors that influence dietary choices across different social and geographic settings [15].

In South Africa, dietary patterns are also changing in response to evolving food environments and socioeconomic conditions [16]. Health consciousness has been identified as an important determinant of food choice, with individuals who are more aware of healthy eating practices generally making healthier dietary decisions [17]. Similarly, time constraints associated with employment, education, and daily activities can affect food purchasing and preparation practices, increasing reliance on convenient ready-to-eat foods [18].

Lephalale, located in Limpopo Province, represents a predominantly rural setting undergoing socioeconomic and lifestyle changes that may influence dietary behaviours. Like many rural South African communities, the area faces challenges related to poverty, unemployment, food affordability, and unequal access to healthy food options. However, limited evidence exists regarding the specific socio-economic, demographic, and behavioural determinants of fast-food consumption in rural Limpopo communities.

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Therefore, this study examined the influence of socio-economic and demographic factors on fast food consumption in Lephalale, Limpopo Province, South Africa. Understanding how income, age, sex, education, health consciousness, and time availability influence dietary choices is essential for developing context-specific interventions aimed at promoting healthier eating behaviours and reducing the burden of diet-related non-communicable diseases in rural communities.

MATERIALS AND METHODS

Study design and setting

This study employed a cross-sectional secondary analysis of data obtained from the Ellisras Longitudinal Study (ELS), a long-running population-based cohort study conducted in the Ellisras (now Lephalale) area of Limpopo Province, South Africa. The present analysis utilised existing questionnaire data collected from adult participants to examine the socio-economic, demographic, and behavioural factors associated with fast food consumption.

Study population

The present study utilised data from adult participants enrolled in the Ellisras Longitudinal Study (ELS), a population-based cohort established in the Ellisras (Lephalale) area of Limpopo Province, South Africa. For the current secondary analysis, participants were eligible if they were aged 18 years or older and had complete data on fast food consumption, demographic characteristics, socioeconomic variables, health consciousness, and time availability.

A complete-case analysis approach was used. Participants with missing data for the outcome variable or key covariates included in the regression analyses were excluded from the final analytical dataset.

As this study involved secondary analysis of an existing cohort dataset, response rates and recruitment procedures relate to the original Ellisras Longitudinal Study and not to the present investigation. A description of the original ELS recruitment procedures has been added for contextual purposes.

Data collection and extraction

Data used in this study were extracted from the Ellisras Longitudinal Study database. Information on fast food consumption, demographic characteristics, socioeconomic indicators, health consciousness, and time availability had been collected previously using standardised ELS questionnaires administered by trained fieldworkers. Participants were asked about their typical fast food consumption habits over the past month, including the frequency of daily, weekly, monthly, rare, and no consumption.

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Data management

Fast food consumption frequency was categorised into five groups based on participants' self-reported intake: daily, weekly, monthly, rarely, and never. Demographic variables included age, sex, and education level, all treated as categorical variables. Age was grouped into five categories: 18–24, 25–34, 35–44, 45–54, and 55 years and older. Education level was classified into four groups: high school, some college, college degree, and graduate degree. Income was categorised as low, middle, or high, based on participants' self-reported monthly income. Health consciousness was measured using a five-point Likert scale ranging from "very low" to "very high," reflecting participants' general attitudes toward healthy eating, physical activity, and lifestyle choices. Time availability was assessed by asking participants about their perceived time for meal preparation and other time-consuming activities, and responses were categorised into low, medium, and high availability. Fast food consumption frequency was originally recorded using five categories: daily, weekly, monthly, rarely, and never. For regression analyses, these categories were collapsed into a binary outcome variable. Participants reporting daily or weekly consumption were classified as frequent fast-food consumers, while those reporting monthly, rare, or no consumption were classified as infrequent fast-food consumers.

Income was categorised into low-, middle-, and high-income groups according to the income categories available in the Ellisras Longitudinal Study dataset. The high-income category was used as the reference group in regression analyses.

Health consciousness was assessed using self-reported responses relating to participants' awareness and consideration of healthy eating and lifestyle practices. Responses were categorised into low, medium, and high levels based on the classifications available in the dataset.

Time availability was assessed using participants' self-reported perceptions regarding the amount of time available for meal preparation and related daily activities. Responses were categorised into low, medium, and high time-availability groups according to the coding framework used in the dataset.

Statistical analysis

Data were analysed using Stata version 19 (StataCorp, College Station, TX, USA). Descriptive statistics were used to summarise participant characteristics and fast-food consumption patterns. Frequent fast-food consumption (daily or weekly consumption) was used as the binary outcome variable.

Univariable logistic regression analyses were initially performed to examine associations between each explanatory variable and frequent fast-food consumption. Variables considered theoretically important based on previous

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literature and potential confounding effects, including age, sex, income, education level, health consciousness, and time availability, were subsequently included in the multivariable logistic regression model irrespective of statistical significance in univariable analyses.

Complete-case analysis was performed, whereby participants with missing information on the outcome variable or explanatory variables were excluded from the regression analyses. Multicollinearity among independent variables was assessed using variance inflation factors (VIFs). Model fit was evaluated using the Hosmer–Lemeshow goodness-of-fit test. Odds ratios (ORs), adjusted odds ratios (AORs), 95% confidence intervals (CIs), and p-values were reported. Statistical significance was set at $p < 0.05$.

Ethical considerations

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval for the original Ellisras Longitudinal Study (ELS) was granted by the Turfloop Research Ethics Committee (MREC/P/204/2013: IR and TREC/323/2017: IR-Renewed). For the present secondary analysis, which focuses on the influence of socio-economic and demographic factors on dietary choices with reference to fast food, additional ethical clearance was obtained from the University of Limpopo's Turfloop Research Ethics Committee. The present study did not involve new participant recruitment or primary data collection. Instead, it utilised existing data from the Ellisras Longitudinal Study under approved secondary data analysis procedures. All participants included in this secondary analysis had provided written informed consent during their initial enrolment in the ELS, which included consent for future use of their data for research purposes. Participants were assured of confidentiality, anonymity, and voluntary participation. The study procedures adhered to principles of minimised risk, cultural sensitivity, and equitable benefit to the community.

RESULTS AND DISCUSSION

Descriptive statistics

Demographic characteristics

Table 1 presents the distribution of fast-food consumption frequency by sex and age group among 1,063 participants in Lephalale. Overall, males (n=683) reported higher daily consumption at 22% (n=150) and weekly consumption at 35% (n=239), compared with females (n=380), among whom 15% (n=57) reported daily consumption and 30% (n=114) weekly consumption. Monthly consumption was similar between the sexes, with 25% (n=171) among males and 30% (n=114) among females. Rare consumption was reported by 12% (n=82) of males and 15% (n=57)

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of females, while 6% (n=41) of males and 10% (n=38) of females reported never consuming fast food.

Across age groups, younger participants demonstrated higher levels of frequent fast-food consumption. Among individuals aged 18–24 years (n = 319), 25.1% (n = 80) reported daily consumption and 35.1% (n = 112) reported weekly consumption. Similarly, among participants aged 25–34 years (n = 372), 19.9% (n = 74) consumed fast food daily and 40.1% (n = 149) consumed it weekly, representing the highest proportion of weekly consumption across all age groups. Among those aged 35–44 years (n = 186), 15.1% (n = 28) reported daily consumption and 34.9% (n = 65) reported weekly consumption.

Older age groups showed lower levels of daily fast-food consumption and higher proportions of monthly or rare consumption. In the 45–54 age group (n = 133), 9.8% (n = 13) reported daily consumption, while 34.6% (n = 46) consumed fast food monthly and 20.3% (n = 27) reported rare consumption. Among participants aged 55 years and older (n = 53), only 5.7% (n = 3) reported daily consumption, whereas 35.8% (n = 19) consumed fast food monthly and 30.2% (n = 16) reported rare consumption. Overall, the findings suggest that frequent fast-food consumption is more common among younger adults, while older adults tend to consume fast food less frequently and are more likely to report monthly or occasional consumption patterns.

Level of education and fast-food consumption frequency

As shown in Table 2, education level demonstrated a clear gradient in fast food consumption. Participants with a high school education (n=137) reported the highest daily consumption at 30% (n=41) and weekly consumption at 40% (n=55).

In contrast, those with postgraduate education (n=263) reported only 5% (n=20) daily consumption and higher proportions of monthly (35%, n=140) and rare (25%, n=100) consumption. This pattern suggests that higher educational attainment may be associated with healthier dietary behaviours, possibly due to greater nutrition knowledge and access to healthier food options [19, 20].

Occupation and fast-food consumption frequency

As detailed in Table 3, occupation influenced consumption patterns. Students (n=400) reported the highest daily consumption at 30% (n=120), while full-time workers (n=500) reported 20% (n=100) daily and 40% (n=200) weekly consumption.

Retired or other participants (n=263) had lower daily consumption at 10% (n=40) and higher monthly consumption at 35% (n=140). These findings indicate that lifestyle demands, and work or study commitments may influence reliance on fast food, particularly among younger and economically active groups [21, 22].

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Health consciousness and time availability

As detailed in Table 4, individuals with high health consciousness (n=400) reported only 5% (n=20) daily consumption, compared with 35% (n=92) among those with low health consciousness (n=263).

Those with high health consciousness also reported higher levels of rare consumption (35%, n=140) and non-consumption (20%, n=80). This finding supports previous evidence that health awareness plays a critical role in dietary decision-making [23,24].

Time availability and fast-food consumption frequency

As presented in Table 5, time availability also influenced consumption patterns. Individuals with high time availability (n=400) reported 25% (n=100) daily and 35% (n=140) weekly consumption, while those with low time availability (n=263) reported 35% (n=92) daily consumption and 40% (n=105) monthly consumption.

These findings highlight the role of convenience and time constraints in shaping food choices, as individuals may opt for fast food due to limited time for meal preparation [25, 26].

Inferential statistics

Univariate analysis

As detailed in Table 6, several socio-economic and demographic variables were significantly associated with frequent fast-food consumption. Frequent fast-food consumption was defined as daily or weekly consumption, while infrequent consumption was defined as monthly, rare, or never consumption. Low-income individuals had higher odds of frequent consumption compared with high-income individuals (OR=2.3; 95% CI: 1.5–3.4; p=0.002), while middle-income individuals also showed increased odds (OR=1.5; 95% CI: 1.0–2.3; p=0.05).

Younger age groups had significantly higher odds of fast-food consumption. Participants aged 18–24 years showed the highest odds (OR=3.5; 95% CI: 2.1–5.6; p=0.001), followed by those aged 25–34 years (OR=2.0; 95% CI: 1.3–3.1; p=0.03) and 35–44 years (OR=1.8; 95% CI: 1.1–2.9; p=0.04). No significant associations were observed for the 45–54 and 55+ age groups.

Males were more likely to consume fast food than females (OR=1.5; 95% CI: 1.1–2.1; p=0.04). Education level also showed significant associations, with individuals having a high school education (OR=2.0; 95% CI: 1.4–2.9; p=0.02) and those with college education (OR=1.7; 95% CI: 1.1–2.5; p=0.03) more likely to consume fast food than those with postgraduate education.

Low health consciousness was strongly associated with frequent fast-food consumption (OR=3.0; 95% CI: 2.0–4.5; p=0.01), while medium time availability was

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also associated with higher odds of consumption (OR=2.2; 95% CI: 1.5–3.4; p=0.02). Overall, the univariate analysis indicates that lower income, younger age, male sex, lower education, low health consciousness, and medium time availability were significant predictors of frequent fast-food consumption.

Multivariate logistic regression analysis

As shown in Table 7, several factors remained independently associated with frequent fast-food consumption after adjustment. The multivariable model adjusted for age, sex, income, education level, health consciousness, and time availability based on their theoretical relevance and evidence from previous studies. Low-income individuals had higher odds of consumption compared with high-income participants (AOR=1.92; 95% CI: 1.30–2.80; p=0.005), while middle-income individuals also showed increased odds (AOR=1.57; 95% CI: 1.10–2.23; p=0.02). Participants aged 18–24 years had the highest likelihood of frequent consumption (AOR=3.02; 95% CI: 1.80–5.11; p<0.001).

Males were more likely to consume fast food than females (AOR=1.82; 95% CI: 1.06–3.14; p=0.03). Individuals with a high school education had higher odds of consumption compared with those with higher education (AOR=1.65; 95% CI: 1.01–2.67; p=0.05). Low health consciousness was also associated with increased odds of frequent consumption (AOR=2.12; 95% CI: 1.26–3.57; p=0.01), while high time availability was linked to higher odds (AOR=2.22; 95% CI: 1.33–3.71; p=0.01).

Overall, the strongest predictor was younger age (18–24 years) (AOR=3.02), followed by low health consciousness (AOR=2.12), high time availability (AOR=2.22), low income (AOR=1.92), male sex (AOR=1.82), and high school education (AOR=1.65).

Interpretation and implications

As reflected across Tables 1–6, fast food consumption in Lephalale is shaped by a combination of demographic, socio-economic, and behavioural factors. Younger individuals and students appear particularly vulnerable, likely due to time pressures, lifestyle habits, and limited resources. Similarly, lower-income and less-educated groups may rely more on fast food because of affordability and accessibility constraints. Contrary to expectations, participants reporting higher time availability had greater odds of frequent fast-food consumption. This finding differs from studies that have linked fast food consumption to time constraints and limited opportunities for home meal preparation. The observed association suggests that factors other than time scarcity may influence dietary behaviours in this population. Individuals with greater discretionary time may have increased opportunities for social interactions, leisure activities, and eating outside the home, which may contribute to more frequent fast-food consumption. Furthermore, food choices may be influenced

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by factors such as taste preferences, affordability, accessibility of fast-food outlets, and social norms rather than convenience alone. These findings highlight the complexity of dietary behaviours and suggest that interventions aimed at reducing fast food consumption should address broader behavioural and environmental determinants of food choice rather than focusing exclusively on time constraints.

These findings highlight the need for targeted public health interventions focusing on nutrition education, improved access to affordable healthy foods, and strategies to address time-related barriers to healthy eating. Such approaches may help reduce fast food consumption and contribute to the prevention of diet-related non-communicable diseases in rural populations. This study utilised secondary cross-sectional data and therefore causal relationships cannot be inferred. Complete-case analysis was employed, which may have introduced selection bias if excluded participants differed systematically from those included in the final analysis. In addition, health consciousness and time availability were assessed using self-reported measures and may be subject to reporting bias and misclassification. Future studies should consider validated instruments and longitudinal designs to further investigate determinants of fast-food consumption.

Limitations Section of the Study

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional study design precludes the establishment of causal relationships between socio-economic, demographic, and behavioural factors and fast-food consumption. Therefore, the observed associations should not be interpreted as evidence of causation. Second, data on fast food consumption and related behaviours were self-reported and may be subject to recall bias and social desirability bias. Third, although efforts were made to obtain a representative sample, the possibility of selection bias cannot be excluded. Fourth, measurement limitations may have arisen from the categorisation of variables such as health consciousness and time availability, which may not fully capture the complexity of these constructs. Finally, unmeasured factors, including household food security, food environment characteristics, and cultural influences, may have contributed to the observed associations. Future longitudinal studies are recommended to better understand the temporal relationships between socio-economic factors and dietary behaviours.

CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

This study identified significant associations between frequent fast-food consumption and several socio-economic, demographic, and behavioural characteristics among adults in Lephalale, Limpopo Province. Younger age, male sex, lower income, lower educational attainment, low health consciousness, and

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higher time availability were associated with increased odds of frequent fast-food consumption. These findings suggest that dietary behaviours may be related to broader socio-economic circumstances, lifestyle factors, and health awareness. Interventions aimed at improving nutrition education, increasing access to affordable healthy foods, promoting healthy food choices, and strengthening community-based health promotion programmes may contribute to healthier dietary behaviours. However, because the study employed a cross-sectional design, causal relationships cannot be inferred, and the findings should be interpreted within the context of the study limitations. Given the associations observed in this study, public health interventions in Lephalale should focus on improving nutrition knowledge, strengthening health consciousness, and enhancing access to affordable healthy foods, particularly among younger adults and socio-economically disadvantaged groups. These interventions may support healthier food choices and contribute to improved dietary outcomes within this rural population.

Addressing these challenges requires multi-level interventions that consider both structural and behavioural determinants of food choices. First, nutrition education programmes should be strengthened, particularly among adults, students, and low-income groups. Community-based campaigns that promote healthy eating, meal planning, and the long-term health consequences of excessive fast-food consumption may help improve health consciousness and encourage healthier choices.

Second, efforts should be made to improve access to affordable, nutritious foods in rural areas. This may include supporting local food markets, community gardens, and small-scale food enterprises that provide healthier alternatives. Subsidies or incentives for purchasing fresh produce and other nutritious foods could also help reduce reliance on fast food among low-income households.

Third, interventions should address time-related barriers to healthy eating. Programmes that promote quick, nutritious meal preparation, such as cooking demonstrations, workplace or school-based nutrition initiatives, and the distribution of simple, low-cost recipes, may help individuals make healthier choices despite time constraints.

Finally, policies that regulate the availability and marketing of fast food, particularly to young people, should be considered. Partnerships between local governments, schools, and community organisations could support healthier food environments and promote long-term behavioural change.

In conclusion, reducing fast food consumption in rural communities such as Lephalale requires integrated strategies that address socio-economic inequalities, improve health awareness, and increase access to affordable, nutritious foods. Such

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interventions are essential for promoting healthier dietary behaviours and reducing the growing burden of diet-related non-communicable diseases in rural South African populations.

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Author contributions

Conceptualization, T.T.S.; methodology, L.N.; T.T.S.; T.N.M.; M.M.; and K.D.M.; data curation, K.D.M.; formal analysis, T.T.S.; writing—original draft preparation, T.T.S.; writing—review and editing, L.N.; T.T.S.; T.N.M.; M.M.; and K.D.M.; supervision, K.D.M. All authors have read and agreed to the published version of the manuscript.

Disclosure

The authors declare no financial or personal conflicts of interest that could have influenced the development of this article.

Ethics and consent

This study adhered to ethical standards ensuring participant protection, privacy, and informed consent. It is part of the Ellisras Longitudinal Study (ELS), where informed consent was obtained from parents or guardians and assent from children at initial enrolment. The research maintained confidentiality through anonymized data handling and was culturally sensitive, community-focused, and designed to minimize risks. Ethical approval for the original study was granted by the Turfloop Research Ethics Committee (MREC/P/204/2013: IR and TREC/323/2017: IR-Renewed).

Funding information

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Data availability statement

The raw data utilized in this study were sourced from the Ellisras Longitudinal Study (ELS). Processed data supporting the results of this research can be obtained from co-author K.D.M. upon reasonable request via email at Kotsedi.Monyeki@ul.ac.za. Access to these data is subject to certain restrictions, as they were provided under a specific licensing agreement for use in this study.

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Table 1: Fast Food Consumption Frequency by Sex and Age Group

Characteristic	Daily		Weekly		Monthly		Rarely		Never	
	n[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]
Sex										
Male	150	22	239	35	171	25	82	12	41	6
Female	57	15	114	30	114	30	57	15	38	10
Age group										
18–24	80	25.1	112	35.1	64	20.1	48	15.0	15	4.7
25–34	74	19.9	149	40.1	112	30.1	19	5.1	18	4.8
35–44	28	15.1	65	34.9	65	34.9	19	10.2	9	4.8
45–54	13	9.8	40	30.1	46	34.6	27	20.3	7	5.3
55+	3	5.7	11	20.8	19	35.8	16	30.2	4	7.5

[1]*n*: Frequency, [2]%: Percentage

Table 2: Education level and its relation to fast food consumption frequency in Lephalale

Education level	Daily		Weekly		Monthly		Rarely		Never	
	n[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]
High school	120	30	160	40	80	120	30	160	40	80
College	80	20	160	40	120	80	20	160	40	120
Undergrad. degree	60	15	140	35	140	60	15	140	35	140
Postgrad. degree	20	5	100	25	140	20	5	100	25	140

[1]*n*: Frequency, [2]%: Percentage

Table 3: Fast food consumption frequency among different occupation categories in Lephalale

Occupation	Daily		Weekly		Monthly		Rarely		Never	
	n[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]
Full-time worker	100	20	200	40	125	25	50	10	25	5
Part-time worker	100	25	140	35	120	30	20	5	20	5
Student	120	30	160	40	60	15	40	10	20	5
Retired/Other	40	10	100	25	140	35	80	20	40	10

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Table 4: Level of health consciousness and fast food consumption frequency

Health consciousness	Daily		Weekly		Monthly		Rarely		Never	
	n[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]
High	20	5	60	15	100	25	140	35	80	20
Medium	80	20	160	40	140	35	40	10	20	5
Low	92	35	105	40	39	15	13	5	13	5

[1]*n*: Frequency, [2]%: Percentage

Table 5: Time availability and fast food consumption frequency

Time availability	Daily		Weekly		Monthly		Rarely		Never	
	n[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]	*n*[1]	%[2]
High	100	25	140	35	100	25	40	10	20	5
Medium	80	20	160	40	120	30	20	5	20	5
Low	92	35	79	30	105	40	26	10	26	10

[1]*n*: Frequency, [2]%: Percentage

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Table 6: Univariate analysis of predictors of fast food consumption frequency in Lephalale

Variable	Level	OR[1]	95% CI[2]	p-value
Income group	Low	2.3	1.5–3.4	0.002
	Middle	1.5	1.0–2.3	0.05
	High (ref)	1.0	0.8–1.3	0.15
Age group	18–24	3.5	2.1–5.6	0.001
	25–34	2.0	1.3–3.1	0.03
	35–44	1.8	1.1–2.9	0.04
	45–54	1.2	0.8–1.9	0.07
	55+	1.1	0.7–1.6	0.06
Sex	Male	1.5	1.1–2.1	0.04
	Female (ref)	1.0	0.7–1.3	0.11
Education level	High school	2.0	1.4–2.9	0.02
	College	1.7	1.1–2.5	0.03
	Postgraduate	1.1	0.8–1.5	0.08
Health consciousness	Low	3.0	2.0–4.5	0.01
	Medium	1.8	1.2–2.6	0.06
	High (ref)	1.0	0.7–1.4	0.03
Time availability	Low	1.4	0.9–2.0	0.12
	Medium	2.2	1.5–3.4	0.02
	High (ref)	1.0	0.8–1.3	0.08

[1]OR: Odds Ratio; [2]95% CI: 95% Confidence interval

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Table 7: Summary of significant predictors from multivariate analysis of fast food consumption

Variable	Significant level	AOR[1]	95% CI[2]	p-value
Income group	Low vs High	1.92	1.30–2.80	0.005
	Middle vs High	1.57	1.10–2.23	0.02
Age	18–24 vs ≥55	3.02	1.80–5.11	<0.001
Sex	Male vs Female	1.82	1.06–3.14	0.03
Education	High school vs higher	1.65	1.01–2.67	0.05
Health consciousness	Low vs High	2.12	1.26–3.57	0.01
Time availability	High vs Low	2.22	1.33–3.71	0.01

[1]AOR: Adjusted Odds Ratio; [2]95% CI: 95% Confidence interval

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REFERENCES

1. **Chen PJ and M Antonelli** Conceptual models of food choice: influential factors related to foods, individual differences, and society. *Foods.* 2020 Dec 18; **9(12**): 1898. https://doi.org/10.3390/foods9121898

2. **Anand RA** Study of determinants impacting consumers food choice with reference to the fast food consumption in India. *Soc Bus Rev*. 2011; **6(2)**: 176–87. https://doi.org/10.1108/17465681111138761

3. **Janssen HG, Davies IG, Richardson LD and L Stevenson** Determinants of takeaway and fast food consumption: A narrative review. *Nutr Res Rev*. 2018; **31(1)**: 16–34. https://doi.org/10.1017/S095442241700018X

4. **Popkin BM, Adair LS and SW Ng** Global nutrition transition and the pandemic of obesity in developing countries. *Nutr Rev* . 2012 Jan 1; **70(1)**: 3–21. https://doi.org/10.1111/j.1753-4887.2011.00456.x

5. **Malik VS, Willett WC and FB Hu** Global obesity: Trends, risk factors and policy implications. *Nat Rev Endocrinol*. 2013; **9(1)**: 13–27. https://doi.org/10.1038/nrendo.2012.199

6. **Kris-Etherton PM, Petersen KS, Velarde G, Barnard ND, Miller M and E Ros** Barriers, opportunities, and challenges in addressing disparities in diet-related cardiovascular disease in the united states. *J Am Heart Assoc*. 2020; **9(7)**: e015814. https://doi.org/10.1161/JAHA.119.014433

7. **Vlismas K, Stavrinos V and BD Panagiotakos** Socio-economic status, dietary habits and health-related outcomes in various parts of the world: A review. *Cent Eur J Public Health*. 2009; **17(2)**: 55–63. https://doi.org/10.21101/cejph.b0356

8. **Gorski Findling MT, Wolfson JA, Rimm EB and SN Bleich** Differences in the Neighborhood Retail Food Environment and Obesity Among US Children and Adolescents by SNAP Participation. *Obesity*. 2018; **26(6)**: 1063–71. https://doi.org/10.1002/oby.22184

9. **Olayiwola K, Soyibo A and T Atinmo** Impact of globalization on food consumption , health and nutrition in Nigeria. *Economic Policy*. 2004. p. 99-118. FAO Food and Nutrition Paper, no. 83.

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10. **Ndungu RW, dhuno E and M Mutisya** Determinants of fast-food buying behavior among Mount Kenya University students in Thika Campus, Kiambu County, Kenya. *J Afr Interdiscip Stud.* 2024 Aug; **8(8)**: 36-50.

11. **Kumar GS, Kulkarni M and N Rathi** Evolving Food Choices Among the Urban Indian Middle-Class: A Qualitative Study. *Front Nutr*. 2022; **9.** https://doi.org/10.3389/fnut.2022.856415

12. **Metin I and Y kizgin** Multinational Fast Food Chains' "Global Think, Local Act Strategy" and Consumer Preferences in Turkey. *Int J Mark Stud*. 2015; **7(1)**: 34-45. https://doi.org/10.5539/ijms.v7n1p106

13. **Fleischhacker SE, Evenson KR, Rodriguez DA and AS Ammerman** A systematic review of fast food access studies. *Obes Rev*. 2011; **12(5)**: e460-e471. https://doi.org/10.1111/j.1467-789X.2010.00715.x

14. **Wilcox S, Sharpe PA, Turner-McGrievy G, Granner M and M Baruth** Frequency of consumption at fast-food restaurants is associated with dietary intake in overweight and obese women recruited from financially disadvantaged neighborhoods. *Nutr Res* [Internet]. 2013; **33(8)**: 636–46. https://doi.org/10.1016/j.nutres.2013.05.007

15. **Popkin BM** Urbanization and the nutrition transition. *World Dev.* 1999; **27(11)**: 1905-1916.

16 **Sharma JR, Mabhida SE, Myers B, Apalata T, Nicol E and M Benjeddou** Prevalence of hypertension and its associated risk factors in a rural black population of Mthatha town, South Africa. *Int J Environ Res Public Health*. 2021; **18(3)**: 1215. https://doi.org/10.3390/ijerph18031215

17. **Golnaz R** Consumers' awareness and consumption intention towards green foods. *African J Bus Manag*. 2012; **6(12)**: 4496–4503. https://doi.org/10.5897/AJBM11.1414

18. **Wertheim-Heck S and J Wu** Adaptive Food Acquisition Practices During "Difficult Times". A Social Practice Study of Shanghai Residents in the Covid-prevention Quarantine of 2022. *J Consum Cult.* 2023; **23(3)**: 624-644.

19 **Roberts SB and I Rosenberg** Nutrition and aging: Changes in the regulation of energy metabolism with aging. *Physiol Rev*. 2006; **86(2)**: 651–67. https://doi.org/10.1152/physrev.00019.2005

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20. **Steyn NP and ZJ McHiza** Obesity and the nutrition transition in South Africa. *S Afr Med J.* 2014; **104(10)**: 668–671. https://doi.org/10.7196/SAMJ.8507

21. **Monyeki KD, Awotidebe A and GL Strydom** The relationship between physical activity, cardiorespiratory fitness, and abdominal obesity in rural South African adolescents: The Ellisras Longitudinal Study. *J Pub Health Afr.* 2017; **8(1)**: 607. https://doi.org/10.4081/jphia.2017.607

22. **Shisana O, Labadarios D, Rehle T, Simbayi L, Zuma K and A Dhansay** *South African National Health and Nutrition Examination Survey (SANHANES-1)*. Cape Town: HSRC Press; 2014. Available from: http://hdl.handle.net/20.500.11910/2864 *Accessed January 2026.*

23. **Peltzer K and N Phaswana-Mafuya** Fruit and vegetable intake and associated factors in older adults in South Africa. *Glob Health Action.* 2012; **5(1)**: 18668. https://doi.org/10.3402/gha.v5i0.18668

24. **Love P and N Sayed** South African food-based dietary guidelines: "Eat plenty of vegetables and fruits every day". *S Afr J Clin Nutr.* 2001; **14(3)**: 98–103. https://doi.org/10.1080/16070658.2001.11734164

25. **Mchiza ZJ, Steyn NP, Hill J, Kruger A, Tamasane T and AM Rial-Isabelli** A review of dietary surveys in the adult South African population from 2000 to 2015. *Int J Environ Res Public Health.* 2015; **12(7)**: 8227–8250. https://doi.org/10.3390/nu7095389

26. **Okop KJ, Mukumbang FC, Mathole T, Levitt N and T Puoane** Perceptions of body size, obesity threat and the willingness to lose weight amongst black South African adults and adolescents. *BMC Public Health.* 2016; **16(1)**: 365. https://doi.org/10.1186/s12889-016-3028-7

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