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LANDSCAPE ANALYSIS FOR OVERWEIGHT AND OBESITY

Tanzania Country Report

December, 2021

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Acknowledgement

The task of analyzing the overweight and obesity situation in Tanzania could not be successfully accomplished without engagement of various stakeholders.

This work is the outcome of high-level commitment from the technical team of researchers from various institutions. In a special, Tanzania Food and Nutrition Centre express sincere gratitude to the Muhimbili University of Health and Allied Sciences, the University of Dar es salaam, Sokoine University of Agriculture and The University of Dodoma for been part of the technical team of researchers who conducted this study.

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This analysis adapted the UNICEF/WHO landscape analysis tool on overweight and obesity in children and adolescents; the September 2020, pilot version. Moreover, we are most grateful to UNICEF for their technical and financial support which facilitated undertaking this analysis.

Dr. Germana H. Leyna
Managing Director

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overweight and obesity prevalence in Tanzania is increasing rapidly

...children and adolescents aged 5-19 years have a high consumption of sugar-sweetened beverages and perform insufficient physical activity.

1. Executive summary

1.1 Background

Globally, overweight and obesity is a pressing health concern, and is noted to be increasing almost everywhere (WHO, 2021). In Tanzania, the prevalence of overweight and obesity amongst children and adolescents is increasing rapidly (TDHS-MIS, 2015-16). A high body mass index (BMI) in childhood is associated with an increased risk of many non-communicable diseases (NCDs), and children living with overweight and obesity are more likely to grow up to be overweight or obese in adulthood (Dinsa et. al., 2012; WHO, 2021). Overweight and obesity also contributes to stigma, social exclusion, and overall poor quality of life (Sarwer, and Polonsky, 2016).

Food and nutrition policies have the potential to improve population diets, increase physical activity, and address rising rates of overweight and obesity, including amongst children. Tanzania is implementing some policy measures that have the potential to prevent and address childhood overweight and obesity, though gaps remain. Knowledge of the prevalence of, and trends in, childhood overweight and obesity are fundamental to understanding and describing the scope of the problem. In view of this, Tanzania Food and Nutrition Centre (TFNC), in collaboration with UNICEF, undertook a landscape analysis of childhood overweight and obesity in Tanzania to understand the current scope of the problem, identify key gaps, and inform priority interventions to prevent and reduce the prevalence of overweight and obesity in Tanzania.

1.2 Methodology

The landscape analysis approach was guided by the 'Landscape Analysis Tool on Overweight and Obesity in Children and Adolescents'. The tool guides data collection on:

- Prevalence of and trends in childhood overweight and obesity (desk review of secondary data)
- Risk factors for development of childhood overweight and obesity (desk review of secondary data)
- Existing policies for preventing childhood overweight and obesity (desk review of secondary data)
- Key gaps in, and current perspectives of, the current policy environment for preventing childhood overweight and obesity (key informant interviews)
- Policy priorities for preventing and addressing childhood overweight and obesity

To determine the prevalence of and trends in childhood overweight and obesity, amongst children aged less than 5 years and amongst adolescent girls aged 15-19 years, Tanzania Demographic and Health Survey 2015/16 (TDHS) data were re-analysed. For age groups and genders that were not captured by TDHS 2015/16 (children and adolescents aged 5-19 years), NCD Risk Factor Collaboration data was obtained.

Data on risk factors for development of childhood overweight and obesity were obtained from the TDHS 2015/16 and the Tanzania Global School-Based Health Survey 2016.

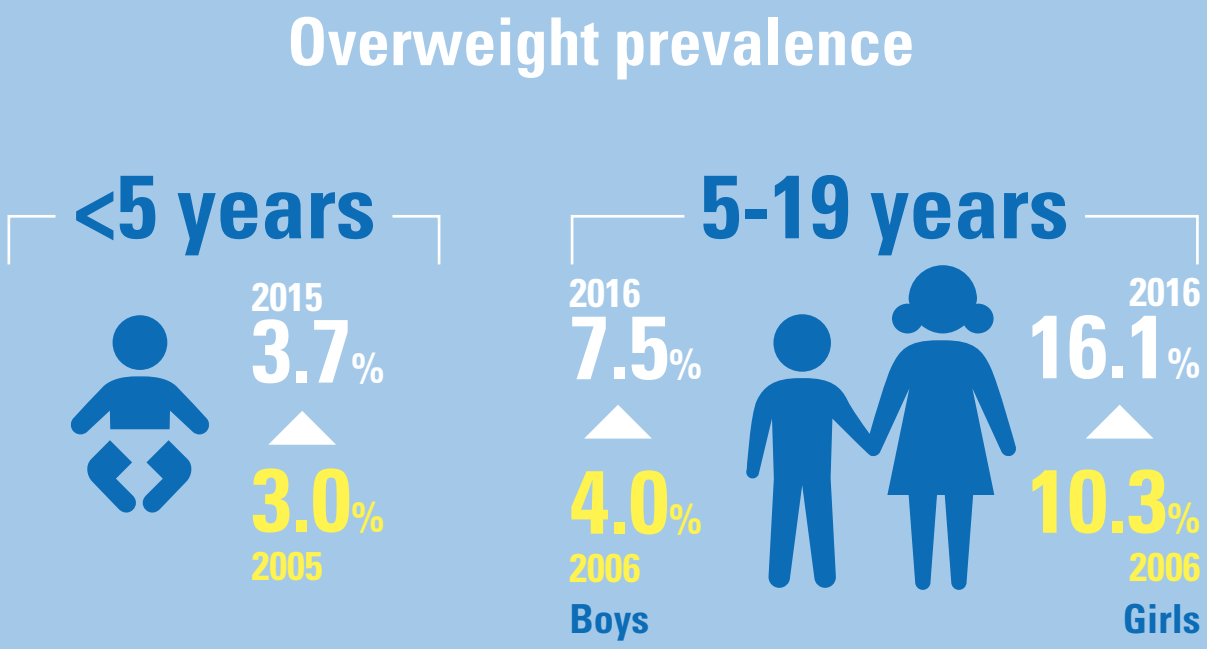
To assess the policy environment, including existing strategies and guidelines, for preventing childhood overweight and obesity in Tanzania, partner agencies in Dodoma and Dar-es-salaam regions were contacted to obtain policy documents relevant to overweight and obesity prevention among children and adolescents in Tanzania. To further identify current policies and programmes relating to childhood overweight and obesity, the actions of key stakeholders working in health and nutrition were mapped.

To support the audit of policy documents and identify current gaps and perspectives of stakeholders, key informant interviews were conducted.

The data from the above methodological stages were triangulated to identify key policy recommendations for addressing childhood overweight and obesity in Tanzania. Finally, a validation meeting, engaging multiple stakeholders, was held to share and discuss the findings of the landscape analysis, including recommendations, and collectively identify priority actions for scaling-up the prevention of childhood overweight and obesity in Tanzania.

1.3 Key findings

While the current prevalence of overweight amongst infants and young children aged less than 5 years is rated 'low', it is also rising rapidly, from 3.0% in 2005 to 3.7% in 2015. Amongst boys aged 5-19 years the prevalence of overweight and obesity increased from 4.0% in 2006, to 7.5% in 2016. Amongst girls, the prevalence of overweight and obesity increased from 10.3% in 2006, to 16.1% in 2016. The prevalence of overweight and obesity is increasingly 'very rapidly' in both cases.



Amongst infants and young children aged less than 5 years, concerning overweight and obesity risk factors include the rapidly increasing prevalence of maternal overweight and obesity, the rapidly increasing number of children born with a low birth weight, and the continuing high prevalence of stunting amongst young children. In Tanzania, children and adolescents aged 5-19 years have a high consumption of sugar-sweetened beverages and perform insufficient physical activity. It is likely that the obesogenic environments that children live, study, and play in contribute to these unhealthy lifestyle habits.

While nutrition is considered a key part of agriculture policy in Tanzania, there is an absence of key food and nutrition policies that are toilered towards addressing childhood and adolescent overweight and obesity. The current Multisectoral Nutrition Action Plan 2021/22 – 2025/26 includes targets for no increase in the prevalence of overweight children aged <5 years, women of a reproductive aged (15-49), and adults. However, children and adolescents aged 5-19 are missed in the current approach. Whilst there is a national strategy on the prevention of NCDs, it does not include targets for children and adolescents, and is outdated. There is no nutrient profiling model for the context-specific identification of healthy and unhealthy foods and beverages. Key food and nutrition policies, including unhealthy food and beverage marketing restrictions and front-of-pack nutrition warning labels, have not been implemented. Positively, a tax on sugar sweetened beverages was implemented in 2019. While many policies that have been implemented may serve double-duty and address both undernutrition and overnutrition, these are commonly weighted towards the former and so are not optimised for addressing childhood overweight and obesity.

1.4 Conclusions and recommendations

Based on the findings presented herein, we make the following recommendations:

1. Finalize the National Multisectoral Nutrition Action Plan Phase II including priorities, targets and indicators on overweight and obesity in children and adolescents (Completed)).
2. Increase collaboration between government ministries on prevention and addressing childhood of overweight and obesity.
3. Strengthen monitoring, data collection and reporting on overweight and obesity in key age ranges including school aged children and adolescents through annual nutrition surveillance, periodic surveys and scientific research.
4. Support the Ministry of Health to adapt or develop a nutrient profile model with related cut-points to identify context-specific healthy and unhealthy foods for application in additional policies.
5. Guided by the developed nutrient profile model, review the Food Labelling Regulations of 2006 to include mandatory front-of pack nutrition labelling and menu labelling to be used by food service operators.
6. Guided by the developed nutrient profile model, implement mandatory policies to control which foods and beverages are permitted to be marketed to children and adolescents through TV, radio, within schools and other places where children gather, and through digital media.
7. Strengthen existing food system policies and regulations, including taxation on production and importation of foods high in sugar, salt and fats, including but not limited to sugar-sweetened beverages.
8. Raise public awareness about overweight and obesity, its consequences and risk factors, such as unhealthy diets, highly processed foods and sugar sweetened beverages.
9. Strengthen nutrition education and communication to improve dietary behavior of consumers, caregivers and children, and generate demand for healthier diets and food options.

risks associated with high BMI in childhood

- cardiovascular disease
- type 2 diabetes mellitus
- hypertension
- many cancers,
- long term disability
- stigma
- premature mortality
- social exclusion
- poor quality of life
- reduced work productivity
- increased insurance and healthcare costs
- overweight or obese in adulthood

2. Background

2.1 Childhood overweight and obesity

Globally, overweight and obesity is a pressing health concern, and is noted to be increasing almost everywhere (WHO, 2021). Tanzania implemented its first National Multisectoral Nutrition Action Plan 2016 – 2021 (NMNAP 2016-21). The mid-term review of the NMNAP 2016-21 indicated impressive progress towards the reduction of undernutrition, however the prevalence of overweight and obesity was noted to be increasing. The 2018 National Nutrition Survey reported a prevalence of overweight of 4.2% and a prevalence of obesity of 3.3% amongst children aged less than 5 years.

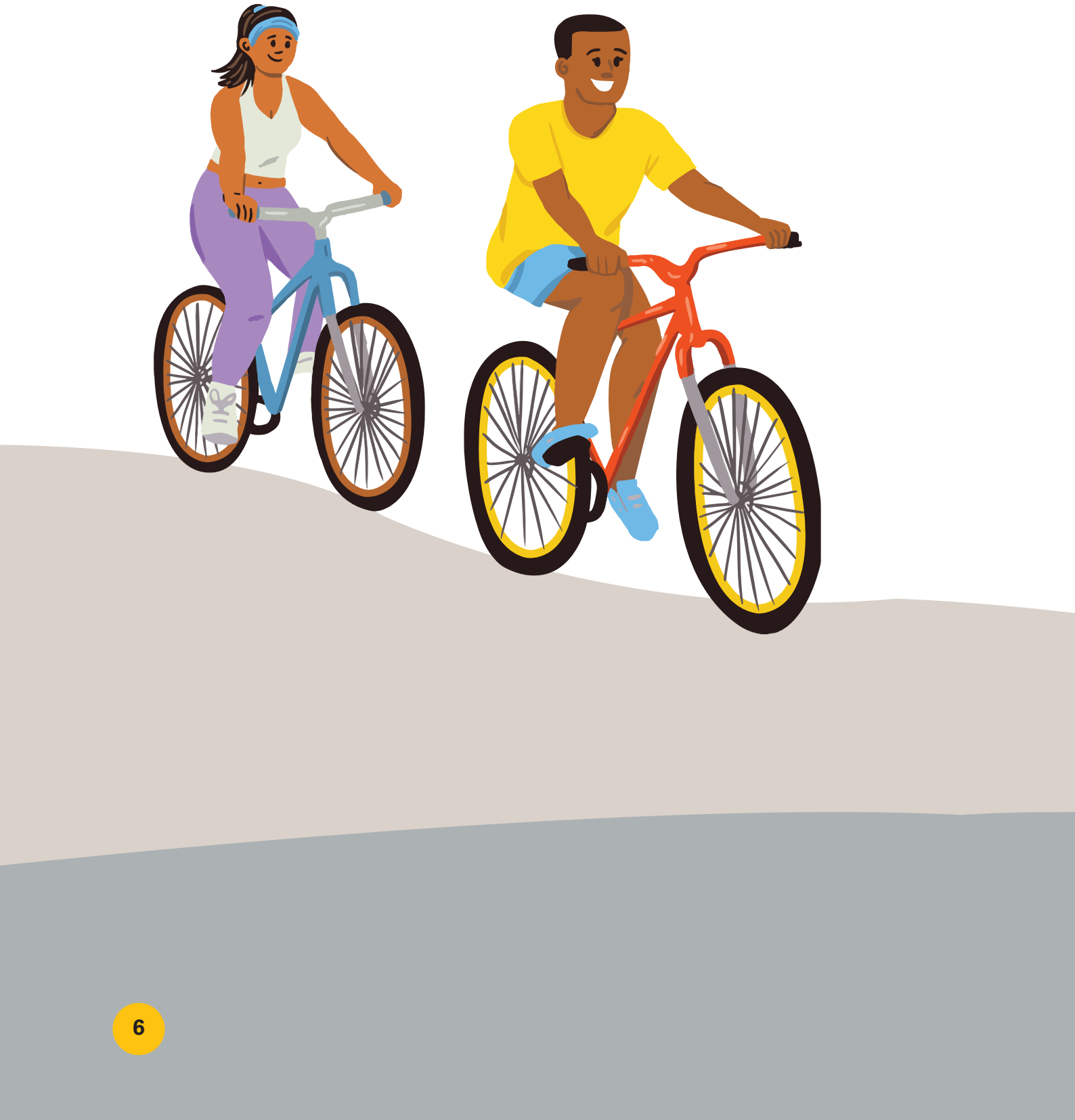
Evidence shows that a high body mass index (BMI) in childhood is associated with an increased risk of many non-communicable diseases (NCDs), including cardiovascular disease, type 2 diabetes mellitus, hypertension, and many cancers (Gregory et. al., 2020; Trogdon et. al., 2008; Monteiro et. al., 2004; WHO, 2014). Further, children living with overweight and obesity are more likely to grow up to be overweight or obese in adulthood (Dinsa et. al., 2012; WHO, 2021). This has the potential to lead to long term disability and premature mortality (Amugsi et. al., 2017). Psychologically, overweight and obesity also contributes to stigma, social exclusion, and overall poor quality of life (Sarwer, and Polonsky, 2016). Overweight and obesity can also have substantive economic consequences, including increased insurance costs, increased healthcare costs, and reduced work productivity (The GBD 2013).

2.2 Food and nutrition policies

Food and nutrition policies have the potential to improve population diets, increase physical activity, and address rising rates of overweight and obesity, including amongst children. Effective obesity prevention and intervention programs done at scale are instrumental to halting the growth of diet-related NCDs (Kelishadi, 2007; Wang and Lobstein, 2006). Tanzania is implementing some policy measures that have the potential to prevent and address overweight and obesity, including implementation of the national Non-Communicable Diseases Program, Nutrition Assessment, Counseling and Support, and nutrition education to prevent overweight and obesity. Despite these efforts, the number of people who are overweight or obese in Tanzania has continued to grow (TDHS-MIS, 2015-16).

2.3 A landscape analysis into childhood overweight and obesity in Tanzania

Knowledge of the prevalence of, and trends in, childhood overweight and obesity are fundamental to understanding and describing the scope of the problem. However, the midterm review of the NMNAP 2016-2021 included limited indicators for adequate tracking of the prevalence of overweight and obesity, especially amongst children and adolescents. Other surveys have also failed to capture the prevalence and drivers of overweight and obesity amongst children and adolescents in Tanzania.



In view of this, TFNC, in collaboration with UNICEF, undertook a landscape analysis of childhood overweight and obesity in Tanzania in order to understand the current scope of the problem, identify key gaps, and inform priority interventions to prevent and reduce the prevalence of overweight and obesity in Tanzania. The analysis was important to inform the process of developing the second edition of Tanzania's NMNAP. In addition, this report provides the basis for strengthening nutrition information systems, particularly in relation to overweight and obesity, so that they include monitoring data and capture intervention coverage to better support data-driven decision-making, promote modification of stakeholder behavior by encouraging data sharing across sectors, and aid stakeholders in obtaining a full understanding of the childhood overweight and obesity situation in Tanzania.

2.4 Objectives

The overall purpose of this landscape analysis was to describe the burden of child and adolescent overweight and obesity and related risk factor, map existing interventions and gaps for addressing childhood overweight and obesity and identify policy priorities for addressing childhood overweight and obesity, in Tanzania.

2.4.1 Specific Objectives

The analysis was guided by the following specific objectives:

1. Describe the prevalence of overweight and obesity amongst children and adolescents in Tanzania.
2. Describe the risk factors that are likely to be influencing childhood overweight and obesity in Tanzania
3. Assess the policy environment, including existing strategies and guidelines, on preventing childhood overweight and obesity in Tanzania
4. Map stakeholders to existing programs and services targeting the prevention of childhood overweight in Tanzania.
5. Identify key policy priorities for addressing childhood overweight in Tanzania.

Lifestyle risk factors

- frequent alcohol consumption
- television viewing
- radio listening

3. Methodology

The landscape analysis approach was guided by the 'Landscape Analysis Tool on Overweight and Obesity in Children and Adolescents', developed by UNICEF with the support of the WHO. The tool guides data collection on:

- Prevalence of and trends in childhood overweight and obesity (desk review of secondary data)
- Risk factors for development of childhood overweight and obesity (desk review of secondary data)
- Existing policies for preventing childhood overweight and obesity (desk review of secondary data)
- Key gaps in, and current perspectives of, the current policy environment for preventing childhood overweight and obesity (key informant interviews)
- Policy priorities for preventing and addressing childhood overweight and obesity

To determine the prevalence of and trends in childhood overweight and obesity, amongst children aged less than 5 years and amongst adolescent girls aged 15-19 years, Tanzania Demographic and Health Survey 2015/16 (TDHS) data were re-analysed. TDHS 2015/16 data was obtained following a formal request to the custodian institutions. Individual information on children and adolescents was extracted, including codes of administrative divisions, age, gender and measure of height and weight. Multivariate analysis was done to identify factors associated with overweight/ obesity, including indicators of socioeconomic position and lifestyle risk factors, using STATA software. Indicators of socioeconomic position included highest attainted education, income quintile, and urban or rural living environment. Lifestyle risk factors included frequency of television viewing and frequency of radio listening.

For age groups and genders that were not captured by TDHS 2015/16 (children and adolescents aged 5-19 years), NCD Risk Factor Collaboration (NCD-RisC) data was obtained.

BMI for Age was used to classify nutrition status of boys and girls aged less than 19 years based on WHO Standards (WHO, 2009). Overweight-for height in children under 5 years was defined as a weight-for-height Z-score (WHZ) of ≥2 standard deviations (SD) above the WHO Child Growth Standards median. Overweight in children aged 5-19 years was defined as a BMI-for-age Z-score (BMIZ) of 1-2 SD above the WHO Growth Reference median. Obesity amongst children aged 5-19 years was defined as a BMIZ of ≥2 SD above the WHO Growth Reference median.

To determine the prevalence of overweight and obesity amongst women of reproductive age, Tanzania Demographic and Health Survey 2015/16 (TDHS) data were re-analysed. Individual information on adults was extracted, including codes of administrative divisions, age, gender and measure of height and weight. Multivariate analysis was done to identify factors associated with overweight/ obesity, including indicators of socioeconomic position and lifestyle risk factors, using STATA software. Indicators of socioeconomic position included highest attainted education, income quintile, profession, and urban or rural living environment. Lifestyle risk factors included frequency of alcohol consumption, television viewing, and radio listening.

Overweight amongst adults was defined as a **BMI ≥ 25kg/m^2.**

Obesity amongst adults was defined as a **BMI ≥ 30kg/m^2.**

Data on risk factors for development of childhood overweight and obesity were obtained from the TDHS 2015/16 and the Tanzania Global School-Based Health Survey 2016.

To assess the policy environment, including existing strategies and guidelines, for preventing childhood overweight and obesity in Tanzania, partner agencies in Dodoma and Dar-es-salaam regions were contacted to obtain policy documents for auditing. Dodoma was selected as the capital city where the majority of government offices are located, and Dar es Salaam was selected as the base of most implementing partners. Information sources for the Policy and Program Review included the World Health Organization (WHO) Global database on the Implementation of Nutrition Action (WHO, 2014a); the SUN Movement (SUN 2013), web page devoted to Tanzania; and relevant repositories such as websites of various ministries, public departments, and agencies. The policies, legislations, standards, and programmes relevant to overweight and obesity prevention among children and adolescents in Tanzania were identified and reviewed.

To further identify current policies and programmes relating to childhood overweight and obesity, the actions of key stakeholders working in health and nutrition were mapped. A semi-structured questionnaire was adapted from previous protocols and instruments for "Building Strong Nutrition Systems: Implementation Science in Support of Scaling Up Nutrition" and modified by the technical team to suit the current study. Stakeholders from 18 regions were mapped where the regions were selected based on the highest and lowest prevalence of overweight and obesity among women according to TNNS (2019) report.

To support the audit of policy documents and identify current gaps and perspectives of stakeholders, key informant interviews were conducted. Interviews were guided by an interview schedule included in the landscape analysis tool. Key informants were purposively recruited from various institutions, including:

- National government agencies, including departments responsible for health, food and agriculture, education, trade, media, and treasury.
- Sub-national and city-level agencies
- UN agencies
- Academic organizations
- Civil Society Organizations (NGOs, FBOs and CBOs)
- Other health and professional associations such as diabetes association, associations of nutritionists and registered dieticians.

The data from the above methodological stages were triangulated to identify key policy recommendations for addressing childhood overweight and obesity in Tanzania.

...infants and young children residing in urban areas may have a greater exposure to unhealthy food environments, with many unhealthy foods and drinks available for purchase

4. Key Findings

4.1 Prevalence of childhood overweight and obesity in Tanzania and related risk factors

4.1.1 Prevalence of overweight and obesity among infants and young children aged less than 5 years

Based on the analysed data from 2015-16 TDHS-MIS, 3.7% of infants and young children under five were overweight (Table 1). While the current prevalence of overweight amongst infants and young children is somewhat low, it is also rising rapidly, from 3.0% in 2005 to 3.7% in 2015 (CAGR: 2.1%)

In 2015, the prevalence of overweight amongst young boys (3.7%) and girls (3.8%) was comparable. However, the prevalence of overweight was greater amongst infants and young children from urban (4.0%), compared to rural (3.6%), areas. Infants and young children residing in rural areas often have greater opportunities for physical activity compared to infants and young children from urban areas, whilst infants and young children residing in urban areas may have a greater exposure to unhealthy food environments, with many unhealthy foods and drinks available for purchase (Waxman A., 2018).

The proportion of infants and young children who were overweight was greater amongst children from the wealthiest (5.2%), as opposed to the poorest (2.8%) families. This is not uncommon in countries where overweight and obesity is an emerging health issue, as children from wealthier households are exposed to more unhealthy foods and beverages before their less wealthy peers (Ofori-Asenso et al., 2016).

Table 1: Prevalence of overweight and obesity amongst infants and young children aged <5 years in Tanzania, 2004-05 and 2015-16

Year	2004-05*		2015-16+		CAGR	
	Overweight-for-height (%)	Rating	Overweight-for-height (%)	Rating	CAGR (%)	Rating
Infants and young children (1 - 4 Years)	3.0	Low	3.7	Low	2.1	Rapid
Sex						
Boys	2.8	Low	3.7	Low	2.8	Rapid
Girls	3.2	Low	3.8	Low	1.7	Rapid
Residence						
Urban	3.0	Low	4.0	Low	2.9	Rapid
Rural	3.0	Low	3.6	Low	1.8	Rapid
Wealth Quintile						
Poorest	2.8	Low	2.8	Low	0.0	No growth
Poorer	2.8	Low	3.4	Low	2.0	Rapid
Middle	2.7	Low	4.2	Low	4.5	Very rapid
Richer	3.3	Low	3.9	Low	1.7	Rapid
Richest	3.9	Low	5.2	Medium	2.9	Rapid

* Tanzania Demographic and Health Survey 2004
+ Tanzania Demographic and Health Survey and Malaria Indicator Survey 2015-16

4.1.2 Prevalence of overweight and obesity among children and adolescents aged 5-19 years

There have been substantive increases in the prevalence of overweight and obesity amongst boys and girls aged 5-19 years (Table 2). Amongst boys, the prevalence of overweight and obesity increased from 4.0% in 2006, to 7.5% in 2016. Amongst girls, the prevalence of overweight and obesity increased from 10.3% in 2006, to 16.1% in 2016. The prevalence of overweight and obesity was increasing very rapidly (CAGR > 3%) for both boys and girls, and the prevalence of overweight and obesity were greater amongst girls, compared to boys, at both timepoints. We are not the first to highlight the growing concern of childhood overweight and obesity in Tanzania. Mosha et al (2021) found that 15% of primary school students in the Kilimanjaro region were overweight or obese, and overweight and obesity was more common amongst those living in urban areas and attending private schools. Supporting this, approximately 15% of primary school students in Dar es Salaam have been found to be overweight or obese as well (Mpembeni, 2014; Muhihi et al, 2013; Mwaikambo et al, 2015; Njelekela et al, 2015). More recent studies find an increased prevalence of childhood overweight and obesity. Mushengezi and Chillo (2022) found that 22.2% of secondary school students in Dar es Salaam were overweight or obese. Likewise, Pangani et al (2016) found that 22.6% of primary school students in Dar es Salaam were overweight or obese.

Table 2: Prevalence of overweight and obesity amongst children and adolescents aged 5-19 years in Tanzania, 2006 and 2016

Year	2006*		2016*		CAGR	
	Prevalence of overweight and obesity (%)	Rating	Prevalence of overweight and obesity (%)	Rating	CAGR (%)	Rating
Sex						
Boys	4.0	Low	7.5	Low	6.5	Very rapid
Girls	10.3	Medium	16.1	High	4.6	Very rapid

* NCD Risk Factor Collaboration (NCD-RisC)

As additional data from the Tanzania Demographic and Health Survey and Malaria Indicator Survey 2015-16 was available for Adolescent girls aged 15-19 years (Table 3), multivariate logistic regression analysis was performed to establish the association between socio-demographic and behavioral characteristics, and overweight and obesity, amongst this cohort. A total of 2108 adolescents aged between 15 and 19 years old were included in the analysis. Of these adolescents, 12.8% were overweight or obese, with the majority living in urban versus rural environments. There were other, non-significant associations between overweight and obesity and sedentary behavior. However, adolescent girls living in the wealthiest income quintile were significantly more likely to be overweight or obese than those living in other income quintiles. This was also the case for adolescent girls who had a tertiary (as opposed to secondary, primary, or no) education (data not shown).

Table 3: Prevalence of overweight/obesity among adolescent girls aged 15 – 19 years by socio demographic characteristics, behavioral factors and by location (TDHS- MIS 2015 -16)

Variable+	Normal BMI	Overweight / Obese
	n (%)	n (%)
Adolescent age		
15	404 (90.2)	44 (9.8)
16	354 (90.3)	38 (9.7)
17	343 (87.1)	51 (12.9)
18	388 (83.8)	75 (16.2)
19	346 (84.0)	66 (15.9)
Wealth index		
Poorest	309 (95.8)	14 (4.2)
Poorer	253 (92.3)	21 (7.7)
Middle	305 (89.8)	35 (10.2)
Richer	414 (89.4)	49 (10.6)
Richest	554 (78.1)	155 (21.9) *
Contraceptive use		
No	1,609 (87.7)	226 (12.3)
Yes	226 (82.6)	47 (17.3)
Frequency of listening to radio		
Not at all	375 (90.2)	41 (9.8)
Less than once a week	651 (88.2)	87 (11.8)
At least once a week	808 (84.7)	146 (15.3)

Variable+	Normal BMI	Overweight / Obese
	n (%)	n (%)
Frequency of watching television		
Not at all	749 (93.0)	56 (6.9)
Less than once a week	511 (88.4)	67 (11.6)
At least once a week	574 (79.2)	150.9 (20.8)
Ever consume alcohol drink		
No	1,752 (87.4)	253 (12.6)
Yes	82 (79.6)	21 (20.4)
Place of residence		
Urban	689 (80.2)	171 (19.9)
Rural	1,146 (91.7)	103 (8.3)

+ Tanzania Demographic and Health Survey and Malaria Indicator Survey 2015-16
* Statistically significant ($p < 0.05$)

4.1.3 Risk factors for overweight and obesity amongst infants and young children aged less than 5 years

Overweight in early childhood is closely associated with maternal overweight and obesity (Mech et al, 2016; Parrino et al, 2016). It is also associated with low birthweight (<2.5kg at birth) (Oken and Gillman, 2012). Maternal smoking appears to be an independent risk factor for childhood overweight and obesity (Mech et al, 2016; Parrino et al, 2016; Wen et al, 2013). Table 4 summarizes the pre-natal and perinatal risk factors for childhood overweight and obesity in Tanzania. The prevalence of maternal overweight and obesity was 17.7% in 2005 and increased to 28.4% in 2016. This rapid increase in maternal overweight and obesity in Tanzania has been reported elsewhere (Mwanamsangu et al, 2020; Mosha et al, 2021). The same was observed for the prevalence of low birthweight, which was 3.7% in 2005 and increased to 6.9% in 2016. Positively, the prevalence of maternal underweight and smoking, which were 9.5% and 0.6% in 2016 respectively, were both declining.

Table 4: Pre-natal and perinatal risk factors for childhood overweight and obesity

Year	2005*		2016+		CAGR	
	Proportion (%)	Rating	Proportion (%)	Rating	CAGR (%)	Rating
Women of reproductive age with obesity	17.7	Low	28.4	Moderate	4.8	Very rapid
Women of reproductive age with underweight	10.4	Moderate	9.5	Low	-0.9	No growth
Prevalence of smoking amongst women of reproductive age	1.5	Low	0.6	Low	-8.8	No growth
Prevalence of low birthweight (< 2.5kg)	3.7	Low	6.9	Moderate	6.4	Very rapid

* Tanzania Demographic and Health Survey 2004
+ Tanzania Demographic and Health Survey and Malaria Indicator Survey 2015-16

Stunting in infancy is associated with later weight gain and overweight in later childhood and non-communicable diseases in adulthood (Hoffman et al, 2000). Breastfeeding appears to be protective against childhood overweight, whereas early introduction of complementary feeding is associated with increased risk of childhood overweight (Mech et al, 2016; Parrino et al, 2016; Wen et al, 2013). Table 5 summarizes the early childhood risk factors for childhood overweight and obesity in Tanzania. The prevalence of initiation of breastfeeding within one hour of birth and exclusive breastfeeding for the first 5 months of life were 48.8% and 40.8%, respectively. at both survey time points, though early initiation of breastfeeding was increasing 'rapidly'. The prevalence of initiation of breastfeeding within one hour of birth had increased since earlier survey dates, while the prevalence of exclusive breastfeeding for the first 5 months of life had decreased since earlier survey dates.

Concerningly, stunting amongst children aged less than 5 years remains high in Tanzania at 34.4%. While declines in the prevalence of stunting have been reported, it is worrying that stunting remains at this high level in Tanzania, whilst the prevalence of overweight and obesity continues to grow (Sunguya et al, 2019). Further, while the prevalence of stunting has been declining, the total number of stunted children increased from 2.7 million in 2014 to 3 million in 2018 (Prime Minister's Office, 2019).

Table 5: Early life risk factors for childhood overweight and obesity

Year	2005*		2016+		CAGR	
	Proportion (%)	Rating	Proportion (%)	Rating	CAGR (%)	Rating
Proportion of births with breastfeeding initiated within one hour of delivery	40.7	Moderate	48.8	Moderate	1.8	Rapid
Proportion of infants not fed exclusively with breastmilk for the first 5 months of life	58.7	Moderate	40.8	Moderate	-3.6	No growth
Prevalence of stunting amongst infants and young children	37.7	Very high	34.4	Very high	-0.9	No growth

* Tanzania Demographic and Health Survey 2004
+ Tanzania Demographic and Health Survey and Malaria Indicator Survey 2015-16

4.1.4 Risk factors for overweight and obesity amongst children and adolescents aged 5-19 years

A key risk factor for overweight and obesity amongst children and adolescents aged greater than 5 years is an unhealthy food environment which is characterized by an unhealthy diet high in foods containing high levels of unhealthy fats, sugar and salt and beverages including sugar-sweetened beverages and fast food, and low in healthy foods and beverages such as fruits and vegetables (Lee et al, 2011; Sahoo et al, 2015). Dietary risk factors are likely to be a significant contributor to childhood overweight and obesity in Tanzania (Table 6). When last measured (2014, the proportion of children consuming sugar-sweetened beverages daily was 45.4%, and the proportion of children consuming fast-food weekly was 33.9%. The proportion of children consuming insufficient fruits and vegetables (<1 serve per day) were 31.2% and 24.0%, respectively. Positively, this is an increase in fruit and vegetable consumption relative to the preceding survey in 2005.

An inactive lifestyle is one where insufficient physical activity is performed and too much time is spent performing sedentary or sitting activities.

Table 6: Dietary risk factors amongst children and adolescents

Year	2005		2014		CAGR	
	Proportion (%)	Rating	Proportion (%)	Rating	CAGR (%)	Rating
Proportion of children who consume at least one serving of sugar sweetened beverages per day*	-	-	45.4	High	-	-
Proportion of children who consume fast food at least once per week*	-	-	33.9	Moderate	-	-
Proportion of children who do not consume at least one serving of fruits per day*	23.0	Moderate	31.2	Moderate	3.9%	Very rapid
Proportion of children who do not consume at least one serving of vegetables per day*	17.8	Low	24.0	Moderate	3.8%	Very rapid

* Tanzania Global School-based Student Health Survey 2006, 2014

Alongside an unhealthy food environment, an inactive lifestyle can contribute to overweight and obesity amongst children and adolescents (Sahoo et al, 2015). An inactive lifestyle is one where insufficient physical activity is performed and too much time is spent performing sedentary or sitting activities. The majority of children and adolescents in Tanzania do not meet the global physical activity recommendations (Table 7). According to the WHO's Global Health Observatory, over 80% of children in Tanzania do meet the global physical activity recommendations of 60 minutes of moderate or vigorous physical activity every day. Positively, there has been a decline in the proportion of children who do not use active transport to travel to school, and children who perform sitting activities for three or more hours per day. Previous research conducted in Tanzania has identified active transport and time away from computer and TV screens as protective against childhood overweight and obesity (Mwaikambo et al, 2015). Almost 50% of children never used active transport to travel to school.

Table 7: Physical activity risk factors amongst children and adolescents

Year	2005		2014		CAGR	
	Proportion (%)	Rating	Proportion (%)	Rating	CAGR (%)	Rating
Proportion of children who do not meet physical activity recommendations (60 minutes of moderate to vigorous physical activity every day)*	83.4	Poor	82.4	Poor	-0.2	No growth
Proportion of children who never walk or ride a bike to school+	63.9	Poor	49.6	Moderate	-3.1	No growth
Proportion of children who spend ≥ 3 hours watching television, playing computer games or engaged in other sitting activities during a typical day+	29.5	Good	20.1	Good	-4.7	No growth

* WHO Global Health Observatory
+ Tanzania Global School-based Student Health Survey 2006, 2014

Obesogenic environments are environments which encourage and support the consumption of an unhealthy diet and insufficient physical activity (Lake and Townshend, 2006; Swinburn et al, 2011). It is widely accepted that such obesogenic environments, rather than individual behaviors, are the key driver of overweight and obesity, including amongst children and adolescents. This is the case in many lower-middle income countries, including Tanzania. Two key aspects of food environments that influence food and environments are (unhealthy) food and beverage marketing and school food environments (Driessen et al, 2014; Smith et al, 2019).

In Tanzania, data on such obesogenic environments is often limited. No studies have been conducted which have aimed to monitor unhealthy food and beverage marketing in Tanzania. However, evidence from other countries in South and East Africa indicates that unhealthy food and beverage companies heavily promote their products in this region. In South Africa, 58.8% of all food and beverage advertisements shown on television during times when children would be likely to be watching were for unhealthy products (Yamoah et al, 2021). In Kampala, Uganda, 86% of outdoor food and beverage advertisements located near schools were for unhealthy products (Dia et al, 2021). Finally, unhealthy food and beverage advertisements were common inside food retail outlets in one neighborhood in Nairobi, Kenya (Green et al, 2020).

School food environments are also likely to drive unhealthy diets and insufficient physical activity amongst school children in Tanzania. The prevalence of exercise facilities in schools has been found to protect against overweight and obesity amongst Tanzanian children, whilst the availability of unhealthy sugar-sweetened beverages may harm the healthiness of children's diets (Mosha et al, 2021). Further, the availability of food stores near schools has been associated with an increased intake of snacks and sugar-sweetened beverages and a decreased intake of fruits, amongst school children in Tanzania (Itatiro, 2014).

Some additional data on broader food environments in Tanzania is available. Euromonitor international data reveals very rapid increases in the sale of sweet and salty snacks and confectionary products, and this is likely indicative of food environments becoming saturated in these unhealthy products. Concerningly, 56% of schools could not provide at least basic drinking water services, and this may increase consumption of sugar-sweetened beverages by students as an accessible alternative. Ambient air pollution may also be limited opportunities for outdoor physical activity.

Table 8: Obesogenic environments

	Proportion/ rate (%)	Rating
Trend in sales of sweet snacks (USD per capita)X	6.1	Very rapid
Trend in sales of salty snacks (USD per capita) X	5.6	Very rapid
Trend in sales of confectionary (USD per capita) X	5.4	Very rapid
Proportion of schools that do not have at least basic drinking water services available*	56	Poor
Ambient air pollution death rate (per 100 000 people)+	26.7	Moderate

X Euromonitor International
* WHO, UNICEF. JMP WASH
+ WHO Global Health Observatory

4.1.5 Overweight and obesity amongst women of reproductive age

A data set, from the Tanzania Demographic and Health Survey 2015-16, of 11,634 women of reproductive age was analysed to determine the prevalence of overweight and obesity amongst women of varying subgroups. The prevalence of overweight and obesity increased with age. The prevalence amongst women aged 15-19 years was10.6%, the prevalence amongst women aged 20-29 years was 24.8%, the prevalence amongst women aged 30-39 years was 38.2%, whilst the prevalence amongst women aged 40-49 years was 42.0% ($p < 0.001$). Likewise, 41.6% of women of a reproductive age who lived in urban environments were overweight or obese, compared to 21.7% of women living in rural areas ($p < 0.001$)

Women of reproductive age of a higher socioeconomic position (i.e., with a greater highest achieved education, of a higher income quintile, or occupying a more skilled workforce position) were more likely to be obese or overweight than women of a lower socioeconomic position ($p < 0.001$). For example, 46.8% of women in the richest income quintile were obese, compared to 11.9% of women in the poorest income quintile.

Several lifestyle risk factors were also associated with an increased prevalence of overweight and obesity amongst women of a reproductive aged. This included frequency of alcohol consumption ($p < 0.001$), frequency of television viewing ($p < 0.001$), and frequency of listening to radio ($p < 0.001$).

Table 9: Prevalence of overweight/obesity among WRA by socio demographic characteristics

Variable	Underweight n (%)	Normal n (%)	Overweight/ obesity n (%)
Age group			
15-19	464 (18)	1834 (71.3)	274 (10.6)
20-29	264 (6.9)	2613 (68.3)	948 (24.8) *
30-39	203 (6.8)	1629 (55.0)	1132 (38.2) *
40-49	171 (7.5)	1148 (50.5)	954 (42.0) *
Place of residence			
Urban	318 (7.4)	2192 (51.0)	1787 (41.6)
Rural	783 (10.7)	5032 (68.6)	1521 (20.7) *
Respondent occupation			
Not working	393 (14.6)	1692 (62.9)	603 (22.4)
Professional/technical/managerial/clerical	29 (6.5)	164 (36.7)	253 (56.7) *
Agricultural	466 (9.4)	3515 (71.1)	967 (19.5) *
Household and domestic/services	57 (4.9)	606 (51.3)	517 (43.8) *
Manual	156 (6.6)	1249 (52.6)	967 (40.8) *
Highest education level			
No education	165 (10.0)	1137 (68.9)	349 (21.2)
Primary	660 (9.2)	4494 (62.8)	2004 (28.0) *
Secondary	272 (10.2)	1539 (57.8)	852 (32.0) *
Higher	5 (2.9)	54 (33.6)	102 (63.5) *
Husband/partners education level			
No education	78 (9.6)	582 (71.3)	156 (19.1)
Primary	331 (7.0)	2,997 (63.1)	1,418 (29.9) *
Secondary	69 (6.3)	517 (47.5)	503 (46.2) *
Higher	4 (1.7)	69 (30.6)	152 (67.7) *
Don't know	2 (17.5)	6 (63.4)	2 (19.0) *
Wealth index			
Poorest	247 (13.3)	1385 (74.8)	221 (11.9)
Poorer	243 (12.5)	1396 (71.6)	310 (15.9) *
Middle	184 (9.0)	1450 (70.0)	418 (20.4) *
Richer	213 (8.5)	1468 (58.5)	829 (33.0) *
Richest	215 (6.6)	1525 (46.6)	1531 (46.8) *
Frequency of listening to radio			
Not at all	308 (12.2)	1659 (66.0)	548 (21.8)
Less than once a week	371 (9.6)	2520 (65.1)	978 (25.3) *
At least once a week	423 (8.1)	3045 (58.0)	1783 (34.0) *
Frequency of watching television			
Not at all	610 (11.3)	3722 (68.9)	1070 (19.8)
Less than once a week	258 (8.6)	1922 (64.0)	825 (27.5) *
At least once a week	234 (7.2)	1580 (49.0)	1412 (43.8) *
Ever consume alcoholic drink			
No	987 (10.1)	6114 (62.8)	2629 (27.0)
Yes	114 (6.0)	1111 (58.3)	679 (35.7) *

Source: TDHS - MIS 2015 -16

* $p < 0.05$

4.2 Key findings on policy environment including existing strategies and guidelines on preventing overweight and obesity in Tanzania

A total of thirty-five (35) documents were reviewed, including international policy databases. A content analysis of sourced policies and documents was conducted to identify policies and programmes likely to contribute to the prevention of overweight and obesity amongst children and adolescents.

Content analysis of policy documents was supported by key informant interviews conducted with 22 stakeholders across government and non-government agencies in Tanzania. Interview discussion themes included understanding of prevention of childhood overweight and obesity, availability of evidence on childhood overweight and obesity and polices related to addressing childhood overweight and obesity.

4.2.1 Food system policies, strategies, legislations and programs that may address childhood overweight and obesity in Tanzania

While nutrition is considered a key part of agrultural policy in Tanzania, there is an absence of key food and nutrition policies that are toilered towards addressing childhood and adolescent overweight and obesity. The current Multisectoral Nutrition Action Plan 2021/22 – 2025/26 includes targets for no increase in the prevalence of overweight children aged <5 years, women of a reproductive aged (15-49), and adults. However, children and adolescents aged 5-19 are missed in the current approach. Policies relating to food development, procurement, and distribution have not been linked to food and beverage dietary guidelines. There is no nutrient profiling model for the context-specific identification of healthy and unhealthy foods and beverages.

Key food and nutrition policies, including unhealthy food and beverage marketing restrictions and front-of-pack nutrition warning labels, have not been implemented. When discussing unhealthy food and beverage marketing restrictions, key informant interview participants shared differing perceptions. Some felt that education, rather than restrictions, were key to encouraging healthy diets: "Let us educate the community on the dangers of using such foods if they decide to use it will be voluntary". However, other interview participants felt that more robust, structural policies were required to prevent overweight and obesity: "I think that [unhealthy food and beverage marketing] should be restricted really to help children grow knowing healthy foods". Key informants were in agreement that labelling of unhealthy foods and beverages is important, and that labels should be clearly visible and feasible to understand. It was noted that the implementation of a front-of-pack nutrition labelling policy is feasible, but accompany education campaigns would be necessary.

A tariff of TZS54 per litre is levied on nonalcoholic beverages. However, this tax is not specific to sugar-sweetened beverages and is applicable to water and other beverages. The tax was generally supported by interview participants, though some noted that such a policy must be supported by other programmes and legislation, as many other unhealthy foods and beverages are sold and marketed in Tanzania. A more health-focused 'sin tax', which would include sugar-sweetened beverages, is currently being considered for implementation in Tanzania, though at the time of writing it had not been written into law.

Table 10: Results from an audit of food system policies, strategies, legislation and programs that may address childhood overweight and obesity in Tanzania

Issue	Status
A national or sub-national strategy on the prevention of NCDs and/or overweight and obesity, including in children and adolescents	Yes. But does not cover children or adolescents and it is outdated,
Availability of national Food Based Dietary Guidelines (FBDGs)	No. The country is in the process of finalizing national FBDGs
Implementation of endorsed government Nutrient profile Model (NPM)	Not available
Specific taxes or levies on foods or beverages	Yes, beverages only and not other foods
Specific subsidies on foods or beverages	No
Government procurement policies or standards linked specifically to FBDGs or NPM, where these exist	No due to lack of NPM and FBDGs
Government have mandatory nutrient declarations	Yes, but do not require labelling detailing the nutritional content
Government-endorsed front-of-pack nutrition labelling scheme	Not mandatory
Availability of Menu labelling policies to require food service operators to show nutritional information on their menus	Not available
Policies to control what types of food and beverages are being marketed to children (on TV or through radio, within schools or other places where children gather (e.g. sports clubs), in the street &Digital media)	Not available
Food policy to subsidies or support food chain processes (transport, warehousing, chilling, freezing) for healthy foods specifically linked to government-endorsed FBDGs or NPS criteria	Not available
Food imports policy restricting imports of specific foods or foods which fail to meet specific nutritional criteria, e.g. using FBDGs or NP model classification	Not available
Agriculture development - Is there a policy to support research or outreach training and development that specifically links to government-endorsed FBDGs or NPS criteria?	Partially available.
Commercial food service – Are there any local or national controls on commercial catering services (including fast food chains) linked specifically to FBDGs or NPM? E.g. restrictions on allowing fast food stores near schools? Restrictions on the quality of fats and limitation of salt to be used?	Not available

4.2.2 Health and social support policies, strategies, legislations and programs that may address childhood overweight and obesity in Tanzania

Positively, many health and social support policies and programs have been implemented in Tanzania, and many of these have the potential to address childhood and adolescent overweight and obesity (Table 11). For example, adolescent and maternal nutrition programmes, to promote breastfeeding, and child growth and nutritional monitoring, have all been implemented in Tanzania. However, implementation of these programs is often partial, and many are focused on undernutrition monitoring and solutions, and do not capture or address overweight and obesity.

Key informants noted that undernutrition is a priority of many early-life health check-ups, and in fact excess weight amongst infants is often celebrated: "When a mother take her child for growth monitoring at the health facility and a child weight is above the green line and in the white zone, the mother becomes very happy, and the nurse will congratulate the mother for feeding her baby well. They both do not realize the child might be at risk of being overweight".

Existing health and social support programs should be integrated to include monitoring and prevention of childhood and adolescent overweight and obesity.

Table 11: Results from an audit of health and social support policies, strategies, legislation and programs that may address childhood overweight and obesity in Tanzania

Issue	Status
Implementation of adolescent and maternal nutrition programmes	Fully implemented for women, infant and young children partially for adolescent
Weight gain – Do women receive antenatal monitoring to prevent excessive or insufficient weight gain and maternal diabetes? Are these available to all women	Partially receive antenatal monitoring but partial implementation for prevention of excessive or insufficient weight gain and maternal diabetes.
Provision for pre-natal counselling and care (including diet, physical activity and smoking). This is targeted for both parents	Partial counselling mainly focusing on under nutrition to mothers. Fathers are mostly targeted to PMTCT program
Provision of protein and/or energy supplements (or cash or food vouchers) to pregnant women	Protein and energy supplements are not provided but cash vouchers are partially implemented to pregnant under social protection scheme.
Available Programs and practices to promote breastfeeding including 10 Steps programs	Yes
Breastfeeding facilities in the workplace	Partial. Government advocated but scaling up of services is very minimal.
Existing of the government Baby-Friendly Hospitals Initiative	Yes, but not fully implemented and monitoring of practice not done regularly.
Implementation of national legislation of the International Code on the Marketing of Breast-milk Substitutes	Fully implemented
Implementation of program for child growth and young children to address overweight or other forms of malnutrition	Yes, but partially implemented
Welfare/social protection policies or programs to support families with infants and young children to access healthy foods	Yes, but partially implemented
Care pathways – Are there well-publicized referral routes for infants and young children at higher risk of overweight and obesity	Not available
Capacity building of health-care workers on provision of nutrition counselling and breastfeeding	Partial implemented on double-duty actions

4.2.3 Education system policies, strategies, legislations and programs that may address childhood overweight and obesity in Tanzania

The education system has strong potential and opportunity for policies to address and prevent childhood overweight and obesity. In Tanzania, there are key gaps in the education system and related food and nutrition policies (Table 12). While the school feeding guide includes recommendations for nutrition, physical activity, screen, and sleep-time standards for children in schools, implementation is often limited, largely due to capacity gaps. Likewise, the National Multi-Sectoral Early Childhood Development Programme (Nm-Ecdp) 2021/22 – 2025/26 includes targets relating to nutrition amongst infants and young children in childcare and pre-school settings, but is focused on under, rather than overnutrition. Freely available drinking water is not guaranteed, nor is safe active transport or exercise facilities.

...school feeding guidelines and policies are not well observed or practiced in schools

The school environment was identified by key informants as an important avenue for improving children and adolescent diets. It was reported that school feeding guidelines and policies are not well observed or practiced in school premises and food vendors and catering services in school premises are not adequately regulated. There was a perception that if food vendors were made aware of the importance of improved diets, and given the required operational standards to consider, they may be in a position to serve better foods to children.

Whilst school meals are provided in some settings, schools do not adhere to food-based dietary guidelines, or set standards for school meals, and as such, the meals provided are cerial based with limited diversity. Positively, school-based fitness monitoring, physical education classes, and nutrition education are all availabe in schools. However, implementation of these is both inconsistent and inadequate. Interviewed participants perceived that nutrition education in schools was an important opportunity to improve children and adolescent diets: "But on the other hand, if children are well informed on healthy foods they may create the demand and therefore improve the situation" (Participant of KII).

Table 12: Results from an audit of education system policies, strategies, legislation and programs that may address childhood overweight and obesity in Tanzania

Issue	Status
Nutritional standards available for providing foods to young children in pre-school setting	The National Multi-Sectoral Early Childhood Development Programme (Nm-Ecdp) 2021/22 – 2025/26 includes targets relating to nutrition amongst infants and young children in childcare and pre-school settings, but is focused on under, rather than overnutrition.
Availability of physical activity standards for child-care settings	Not available
Implementation of national guidance for screen-time and sleep in child-care settings	Not available
School standards - Are there nutrition standards for meals provided in schools? Is it monitored?	No standards but national school feeding program is underway
Are schools supported to provide meals with diet diversity (e.g. with a school garden and fruit trees)?	Partially implemented
Availability of nutrition standards for other foods (snacks and beverages) sold in schools, e.g. in vending machines	Not available
Availability of standards for children's physical activity/ education in the curriculum	Yes
Availability of standards for the amount of sedentary time, or screen time, for children at school covering in all schools, state and private	No
Availability of clear guidelines in the school curriculum about teaching children on health promotion, including healthy eating and physical activity	Yes
Availability of policies to ensure access to safe drinking water in schools and sport facilities	Not available
Availability of policies to encourage active travel (walking and cycling) to and from school	Not available
Adoption of policies to give access to school and municipal sport and play facilities outside of school hours	Not available
Implementation of school-based fitness monitoring programs	Yes but partially implemented

4.2.4 Structural, political, institutional and cultural policies, strategies and legislations that may influence the response to childhood overweight and obesity in Tanzania

As with the education system, several structural, political, institutional and cultural policies, strategies and legislation have been implemented in Tanzania, but many focus on, or only apply to, undernutrition (Table 11). Government leadership, coordination and funding are all primarily directed at addressing undernutrition, rather than all forms of malnutrition including overweight and obesity in children and adolescents. There is all also a lack of data on many relevant government programmes and cultural practices.

Table 13: Results from an audit of the structural, political, institutional and cultural policies, strategies and legislation that may influence the response to childhood overweight and obesity in Tanzania

Issue	Status
Implementation of national policies or city on active transport and green spaces to provide safe cycling and walking routes and access to green spaces	Urban Act is available but there is a gap on enforcement. The act did not include green spaces or pedestrian access, and the vendors are taking over pavements and open areas, limiting pedestrian use.
Availability of national or city policies to reduce car use with more active transport (walking, cycling)	Not available
Leadership: is there evidence of support from the president/ prime minister/cabinet office for action on childhood obesity?	Yes, but for under-nutrition
Government co-ordination: Is there a policy coordination platform for cross-government collaboration that already works to prevent and control childhood obesity, or could take up this work?	Yes, mainly under-nutrition
Civil society empowerment – Is there a government-led platform, forum, committee or other body that engages academia and non-governmental organization with a focus on childhood obesity?	Yes (NCD Alliance, National NCD program & Prevention of DRNCDs Thematic working Group), but focusing on adults. Membership does not include food industry representatives.
City-level programs - Are there city-led or local authority-led strategies and policies to tackle child obesity?	Not available
Government monitoring the (or other independent organization, free from conflict of interest) to conduct surveillance on child obesity levels, and report the results	Not available
Published national government targets including obesity and under-nutrition including time-framework	Yes (Under-nutrition and obesity). The Government and private sectors are responsible for meeting targets.
Transparency on public access to government information and the evidence used for obesity-related policy-making	Yes, but focusing only under-nutrition
Commercial government interests and clear policy on preventing and managing conflicts of interest and vested interests	Yes, only for breast milk substitutes
Government prohibition on the funding of obesity-prevention interventions by the food and beverage industry	No
Monitoring reports of food company activities on the marketing of foods high in fat, sugars and salt	Not done
Government funding nutrition education promotion programs for children (in schools, that include a focus on good nutrition to promote healthy weight	Not available
Government funding nutrition interventions for children including double-duty interventions	Partially focusing under-nutrition
Government funding obesity prevention research	Partially focused on under-nutrition

Available a standard procedure to assess the impact of food and physical activity-related polices on health and obesity	Not available
Local water supplies believed to be safe to drink and safe drinking water widely available for free	No available information
Specific cultural norms (such as dress codes or gender segregation of sports facilities) that reduce the opportunities to take physical activity Or increase the need for sedentary behavior.	No available information
Prevailing climate affect availability of food, dietary behaviors or levels of physical activity and the natural terrain affect physical activity.	No available information
Evidence of a code of conduct for media companies, or for journalists, on reporting on obesity and avoiding stigma and victim blaming	No available information
Cultural preferences for particular foods or cooking practices	No available information
Cultural reasons why fatness might be encouraged, changing and gender differences	No available information
Specific rules about feasting or fasting which may encourage weight gain	No available information

4.3 Key stakeholder mapping

To identify current priorities and agendas relating to the prevention of childhood overweight and obesity in Tanzania, key stakeholder mapping was conducted. A total of 132 different stakeholders were mapped using a tool aimed at exploring stakeholder engagement in activities linked to the prevention of childhood and adolescent overweight and obesity.

The findings of the stakeholder mapping and policy analysis concluded that the government of the United Republic of Tanzania is committed to implementing measures that address NCDs. In December 2016, the Government of Tanzania, through the Vice President Office, launched a national physical fitness campaign aimed at creating public awareness on overweight and its contribution to NCDs. Likewise, the Prime Minister, Hon. Majaliwa, encouraged all council, municipals, and city authorities to consider plans that include conducive spaces for physical activity. In 2018, the Ministry of Health, Community Development, Gender, Elderly, and Children, in collaboration with the WHO, launched an awareness campaign on the impact of NCDs, under the theme "Afyayetu, Mtajiwetu". Similar efforts have also be observed through various NGOs, including Tanzania NCD Alliance, Tanzania Diabetes Association, and amongst partners supporting the annual Joint Multisectoral Nutrition Review (JMNR). Through these networks, different stakeholders come together and discuss issues relating to NCDs and relevant risk factors, including overweight and obesity.

Despite the efforts described above, key stakeholder mapping identified that a limited number of stakeholders are implementing actions directly aimed at the prevention of childhood and adolescent overweight and obesity. Of the 132 included stakeholders, just 7 reported implementing programmes or interventions aimed at preventing or addressing childhood overweight and obesity. Instead, the majority of stakeholders were identified as working on the prevention and treatment of undernutrition and improving of food security.

There is need for Governments to develop policies that can change and address obesogenic environments to better support children to live healthy lifestyles.

5. Conclusion and Recommendations

The prevalence of childhood overweight and obesity in Tanzania is increasing, especially in urban settings. There is also a significant transition in diets, with increases in consumption of unhealthy foods, high in unhealthy fats, salt, and sugar. Generally, there are limited population-based policies and strategies supporting the prevention of childhood overweight and obesity. The Government has a mandate to coordinate preventive programs, ensuring supportive policies related to food environments, health, education, and urban planning are implemented.

Addressing overweight and obesity requires multi-sectoral collaboration, and coordination of key sectors such as health, education, transport, agriculture, trade and industry, land and urban planning, and information and communication. Use of social behavioral change communication strategies and education campaigns, school health and nutrition education, and nutrition counselling can be useful to deliver messages on prevention the of childhood overweight and obesity. However, it is most important for governments to develop and implement policies that change and address obesogenic environments to better support children to live healthy lifestyles. Such policies include sugar-sweetened beverage taxation, mandatory front-of-pack nutrition labelling, unhealthy food and beverage marketing restrictions, and policies supporting healthy school food and physical activity environments.

This landscape analysis has shown that the number of stakeholders and agencies working on the prevention of childhood overweight and obesity in Tanzania remains limited. Most key stakeholders remain focused on addressing undernutrition and nutrient deficiencies. Double-duty approaches to programming should be enacted to ensure that the prevention of overweight and obesity is included as part of ongoing efforts to counteract undernutrition. However, to achieve this, Government leadership and coordination will be essential.

Based on the findings presented herein, we make the following recommendations:

10. Finalize the National Multisectoral Nutrition Action Plan Phase II including targets and indicators on overweight and obesity in children and adolescents (Completed).
11. Increase collaboration between government ministries on prevention and addressing childhood of overweight and obesity.
12. Strengthen monitoring, data collection and reporting on overweight and obesity in key age ranges including school aged children and adolescents through annual nutrition surveillance, periodic surveys and scientific research.
13. Support the Ministry of Health to adapt or develop a nutrient profile model with related cut-points to identify context-specific healthy and unhealthy foods for application in additional policies.

14. Guided by the developed nutrient profile model, review the Food Labelling Regulations of 2006 to include mandatory front-of pack nutrition labelling and menu labelling to be used by food service operators.
15. Guided by the developed nutrient profile model, implement mandatory policies to control which foods and beverages are permitted to be marketed to children and adolescents through TV, radio, within schools and other places where children gather, and through digital media.
16. Strengthen existing food system policies and regulations, including taxation on production and importation of foods high in sugar, salt and fats, including but not limited to sugar-sweetened beverages.
17. Raise public awareness about overweight and obesity, its consequences and risk factors, such as unhealthy diets, highly processed foods and sugar sweetened beverages.
18. Strengthen nutrition education and communication to improve dietary behavior of consumers, caregivers and children, and generate demand for healthier diets and food options.

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