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GENERATION AND MOBILIZATION OF NUTRITION EVIDENCE TO TACKLE MALNUTRITION: FROM DATA TO ACTION

Urban school adolescents stunting and thinness and Global Diet Quality Score in Addis Ababa

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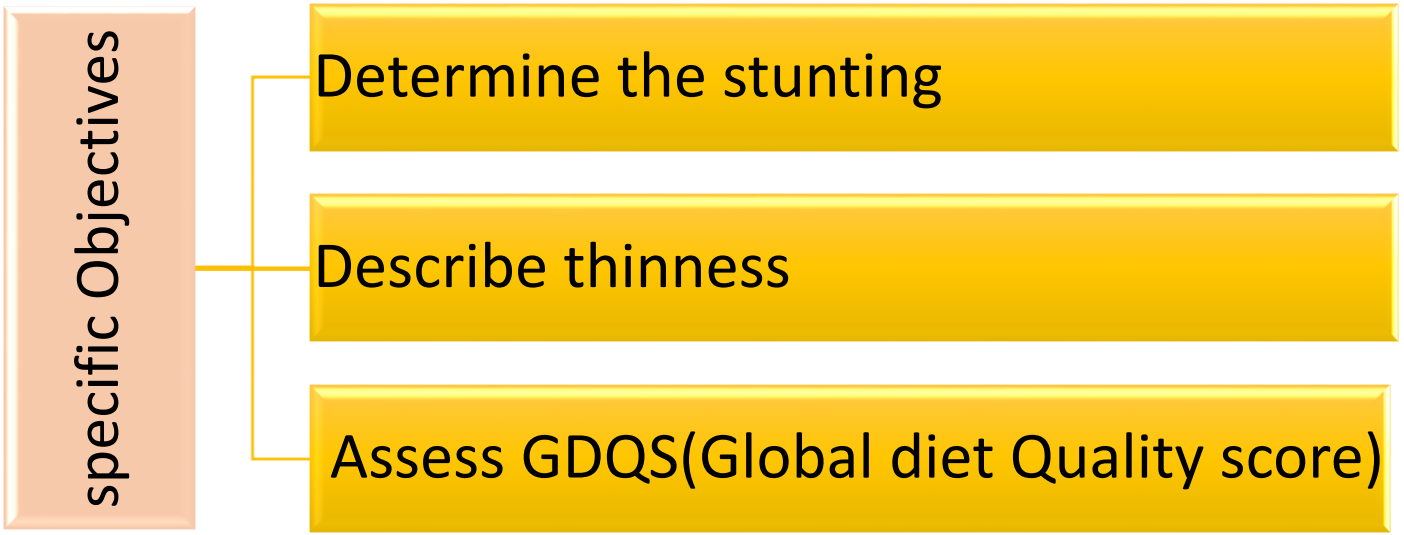
Introduction 1/3

- Adolescent are vulnerable to malnutrition- Rapid growth (Das. J etal 2017).
- Stunting prevalence (5% to 29%) (Kahsay,M,2020, Teferi,D.2018)
- Thinness prevalence 4.5% to 29%.(Zemene,M 2019, Arage,G,2019)
- Researches recommend a need for standardized indicators dietary diversity. (Keats, E. 2018)
- Global Diet Quality Score (GDQS) was designed to be appropriate for use of among non-pregnant, (Fung, T,2020)
- The government is still off-track to achieve nutritional targets at 2025 (Amaha, N,2020)
- Therefore, explaining the new Global Diet Quality Score (GDQS) assessment to school adolescent is very important.

Objectives

To asses stunting and thinness association with Global Diet Quality Score among school adolescents in Addis Ababa.



Method

Setting and design:

- In Addis Ababa, the capital city of Ethiopia.
- 2 Government school/sub city
- 20 schools included
- School adolescents aged 10-14 years.
- A cross-sectional study

Method Summary

Table 1. method summery table for Urban school adolescent study in Addis Ababa , 2019

Population	Design	Sampling	Exposure	Outcome	Statistical Analysis
Urban Adolescent school age (10-14 years)	Cross-sectional with 1200 participants	A multi-stage stratified random sampling	▪ Gender, ▪ Grade, ▪ Father education, ▪ Wealth Quintile (Asset score) ▪ Household Hunger score(HHS), ▪ Dietary Diversity Score (DDS) ▪ Global Dietary Quality Score (GDQS)	Thinness	Multinomial Logistic
				Stunting	Log binomial Regression

Measurement 1/2

- Height-for-age z-scores based on sex and age in year using WHO Anthro-Plus software. (Blössner, M, 2009)
- Height-for-age z-scores were categorized according to WHO stunting cut-offs (Stunted: <− 2SD; Not stunted: ≥ −2 SD). .(WHO 2006)
- Thinness was defined as adolescents with BMI-for-age with Z-score < –2 SD from the median value of WHO's 2006 reference data.(WHO 2006)
- HHH(Household hunger scale: 6 food items
  - ✓ Mild =(0,1)
  - ✓ Moderate=2/3
  - ✓ Sever=(4,5,6)
- DDS(dietary diversity score)= 10 food items
  - ✓ Good DDS > 5 score
  - ✓ Insufficient DDS < 5 score

Measurement 2/2

Table 2: How to code food groups based on their frequency of consumptions.

Food Group	Never or 1/wk	2-4/wk	5-7/wk or ≥1/day
Citrus fruits	0	1	2
Deep orange fruits	0	1	2
Other fruits	0	1	2
Dark green leafy vegetables	0	2	4
Cruciferous vegetables	0	0.25	0.5
Deep orange vegetables	0	0.25	0.5
Other vegetables	0	0.25	0.5
Legumes	0	2	4
Deep orange tubers	0	0.25	0.5
Nuts and seeds	0	2	4
Whole grains	0	1	2
Liquid oils	0	1	2
Fish	0	1	2
Poultry	0	1	2
Low fat dairy	0	1	2
Eggs	0	1	2
High fat dairy	0	1	2
Red meat	0	1	0
Processed meat	2	1	0
Refined grains and baked goods	2	1	0
Sweets and ice cream	2	1	0
Sugar-sweetened beverages	2	1	0
Juice	2	1	0
White roots and tubers	2	1	0
Fried foods eaten away from	2	1	0

GDQS(Global diet quality Score)=25 food items for Pop.

- ✓ High risk=(<15-23 score)
- ✓ Medium Risk =(15-23 score)
- ✓ Low risk=(>23 score)

Global Diet Quality Sub metrics, based on 24 hours before the survey

- positive (GDQS+) = 16 food items(0-32s)
- Negative (GDQS–)= 7+2(9 food item(0,17).

Result and Discussion

Table 3: Nutritional status and Dietary characteristics of Ur… 2019 Ethiopia,

Variables			cent (%)
BMI for Age			
	Overweight		8.42
	Normal		78.91
	Thinness		12.67
Stunting			
	Not stunted	1102	91.83
	stunted	98	8.17
Household Hunger scale (HHS)			
	Mild Hunger	1158	96.50
	Moderate Hunger	40	3.33
	Sever Hunger	2	0.17
Dietary Diversity Score (DDS)			
	Good DDS		63.00
	Insufficient DDS		0
Global Diet Quality Score (GDQS)			
	Low risk		
	Moderate risk		32
	High Risk		3.00
Healthy GDQS food groups (GDQS+) (from 0-32 score)			
	Mean ± (SD)	8.81± (2.86)	
Unhealthy GDQS food groups (GDQS–) (from 0-17 score)			
	Mean ± (SD)	11.17 ± (1.59)	
Overall GDQS food group (from 0-49 score)			
	Mean ± (SD)	19.99 ± (2.81)	

Higher than study in Ethiopia (Kahssay, M,2020)

Lower than a study (Mengesha, D, S,2020)

May be sociodemographic characteristics.

High compare to systematic review in Ethiopia (Hailegebriel, T. 2020)

Low compared to recent study (Gagebo, D,2020)

GDQS has + association in India
(Matsuzaki, M,2020)

Similar no relation in QDQS and Nutritional status in 10 African Countries
(Bromage, S,2020)

Table 4: Association of GD ol adolescent in Ethiopia.

Nutritional Outcome	Low R… inadequacy)		…isk (<15 nutrient inadequacy)
GDQS Mean ± (SD)[1]	24.5± (1.33)	19.39± (1.93)	13.59± (1.11)
Stunted school adolesc.			
n	11/181	84/983	3/36
Unadjusted	Ref	1.41(0.74,2.67)	1.37(0.44,4.26)
Adjusted[2]	Ref	0.97(0.411,2.290)	0.93(0.167,5.188)
Thins school adolescents			
n	28/181	121/983	3/36
Unadjusted	Ref	0.74(0.42,1.31)	0.49(0.12,1.95)
Adjusted[3]	Ref	0.79(0.428,1.459)	0.611(0.167,2.235)

[1] GDQS value score calculated with mean value score 0-49.

[2]Model adjusted for Stunted school adolescents; sex, Age, grade, Mother/women guardian Occupation, Fathers Highest Educational, House Hold Hunger scale, Dietary Diversity score for the past 24 Hour

[3]Model adjusted for thinness school adolescents; sex, Age, grade, Mother/women guardian Occupation, Fathers Highest Educational, House Hold Hunger scale, Dietary Diversity score for the past 24 Hour. OR-Odds ratio; CI-Confidence interval; Ref-Reference group.

Conclusion and recommendation

- The prevalence of thinness and stunting found to be high among urban school adolescents.
- The overall GDQS food score has no association with stunting and thinness status of SAs.
- The need for efforts focusing to improve nutritional status of SAs to urban schools.
- The need for further study to explore specific group of population.

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- Etc……

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