Relationships between the Dietary Patterns and the Nutritional Status of School Children of "Galkadapathana" Village in Sri Lanka

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INTRODUCTION

Sri Lanka has the second highest rate of acute malnutrition among children under 5 in South Asia. At least 17% of children are suffering from chronic wasting. (*UNICEF,2022*). Nuwara Eliya District of Sri Lanka has the highest percentage(22.8%) of the stunted children (*Central Bank of Sri Lanka-Annual Report, 2022*).

OBJETIVES

Overall objective:

➤ To identify the relationships between the nutritional status and dietary patterns which are intertwined with socioeconomic factors of school children (6-18 years old) of a rural Sri Lankan agricultural village called "Galkadapathana" in the Nuwara-Eliya district.

Specific objectives:

➤ To determine the nutritional status of the school children.

➤ To determine the Individual & Household Dietary Diversity of the selected individuals.

➤ To identify the socioeconomic factors of the sample.

➤ To determine the possible relationships between the selected factors and the nutritional status of the sample.
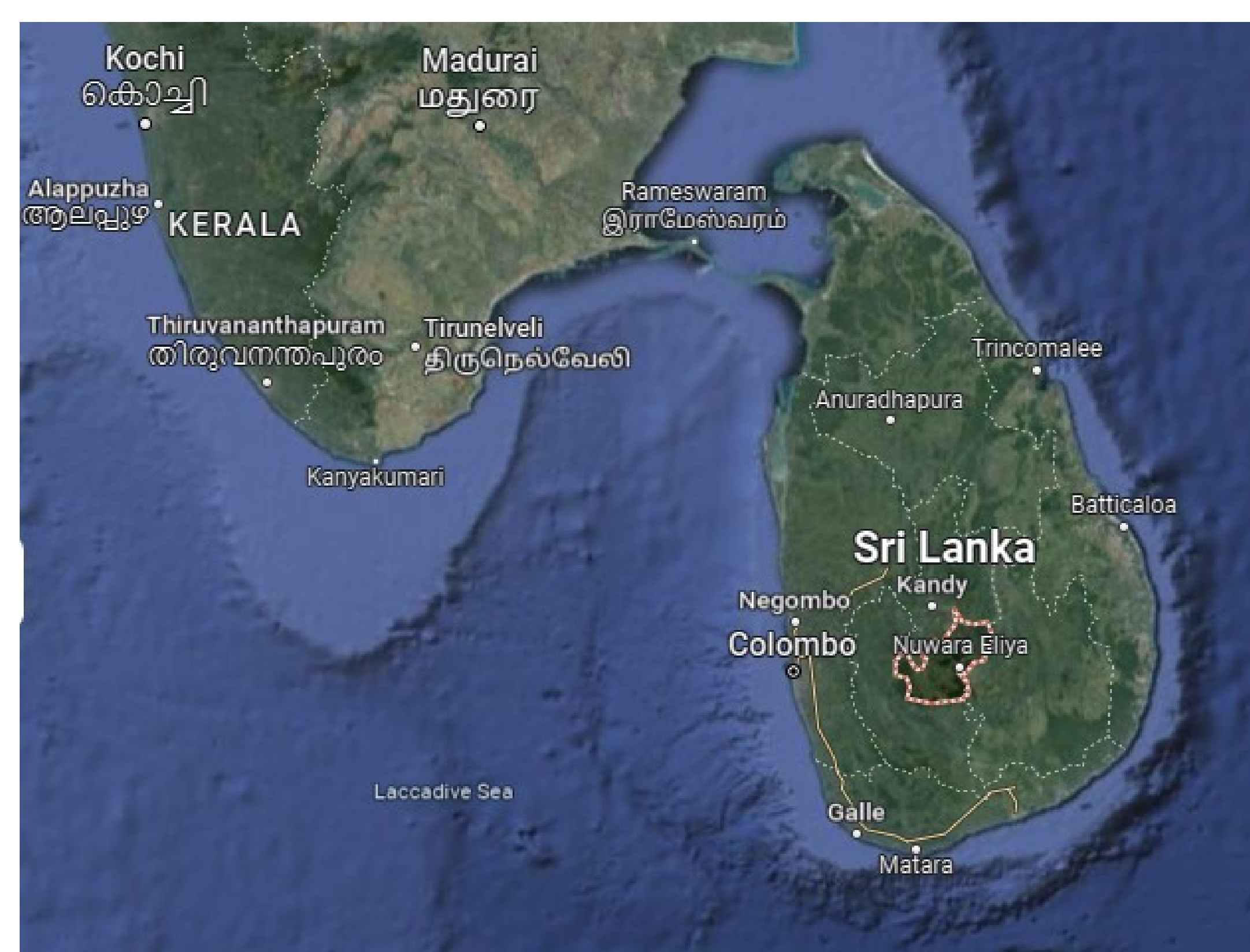

Figure 1: Location of the Nuwara Eliya District

METHODS/ANALYSIS

➤ **Study period:** From August,2022 to January,2023

➤ **Approach:** An inductive approach was used to execute this community-based cross-sectional study.

➤ **Data collection:** using structured surveys and conducting face-to-face interviews. The nutritional status of the children was assessed through anthropometric measurements.

➤ **Sample:** A total of 85 households with 137 school children in the age group of 6-18 years were randomly selected. Among 137 school children there were 71 boys and 66 girls.
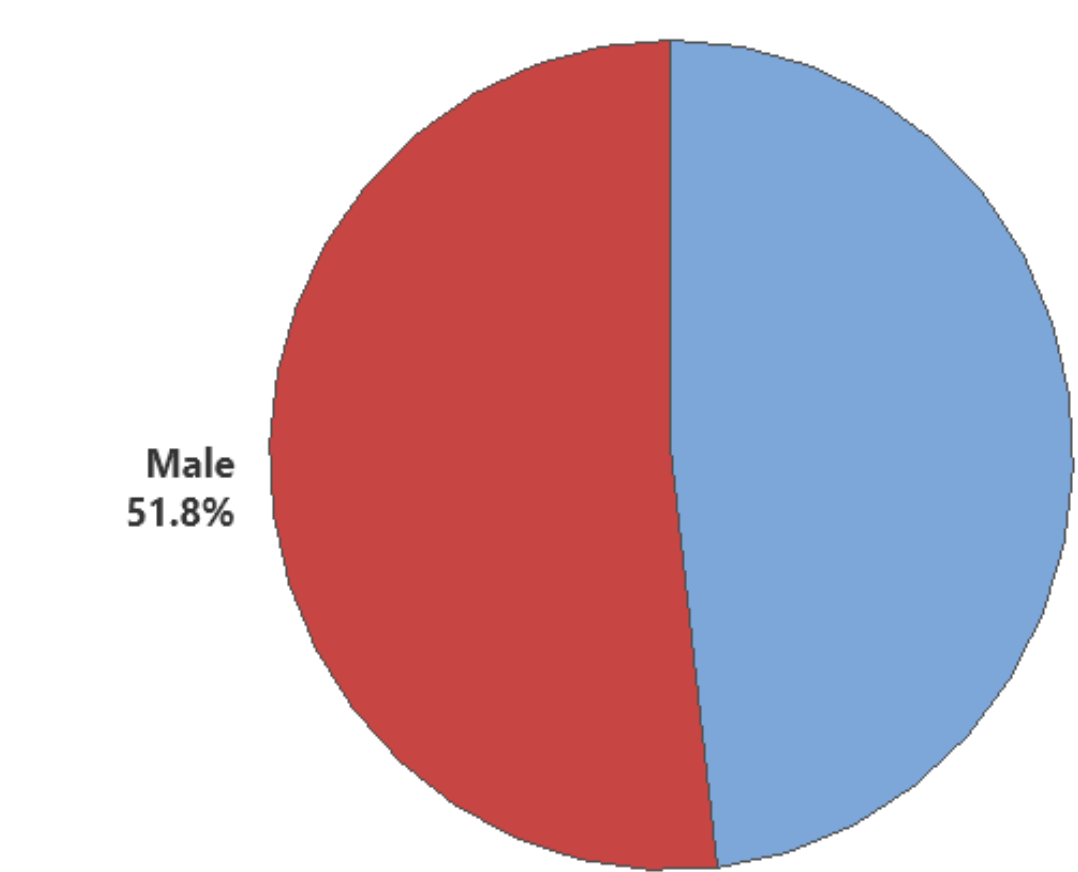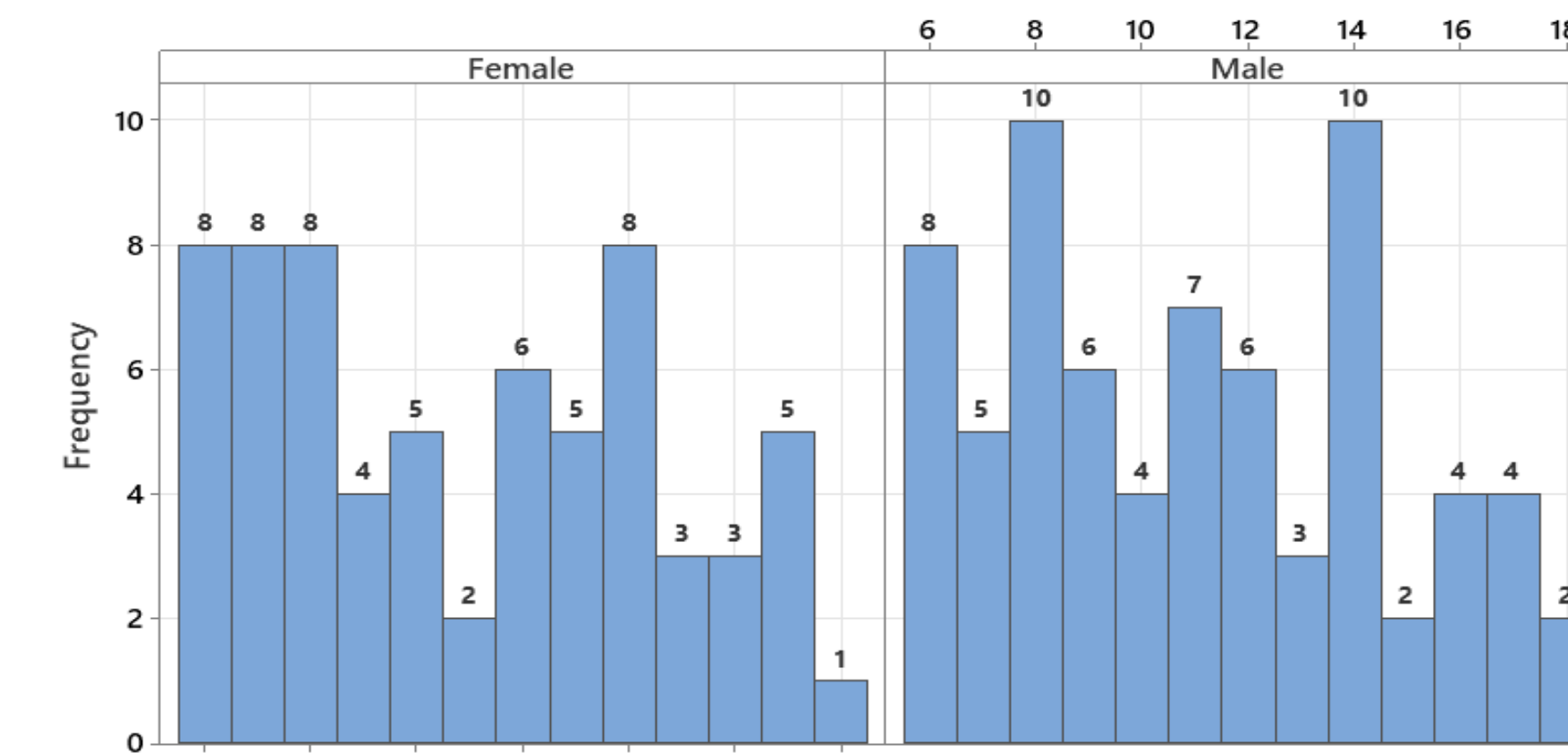

Figure 2:Gender distribution of the respondents

Figure 3: Distribution of age (years) of female and male respondents

➤ **Analysis**: Quantitative and qualitative techniques were used to analyze the data. The nutritional status, dietary patterns and related socioeconomic data were analyzed by using WHO growth reference data charts, IBM SPSS Statistics 26.0. Pearson's chi-square test for association and two sample t-tests were used as hypothesis tests.

RESULTS

Among 137 children, 5.8% were found to be severely stunted, while 7.3% were found to be severely underweight by the WHO growth standards. When considering the dietary diversity 24.8% of the population received the maximum Individual Diversity Score (IDDS) of 6. Furthermore, 21.2% of the population received the maximum Household Dietary Diversity Score (HDDS) of 7
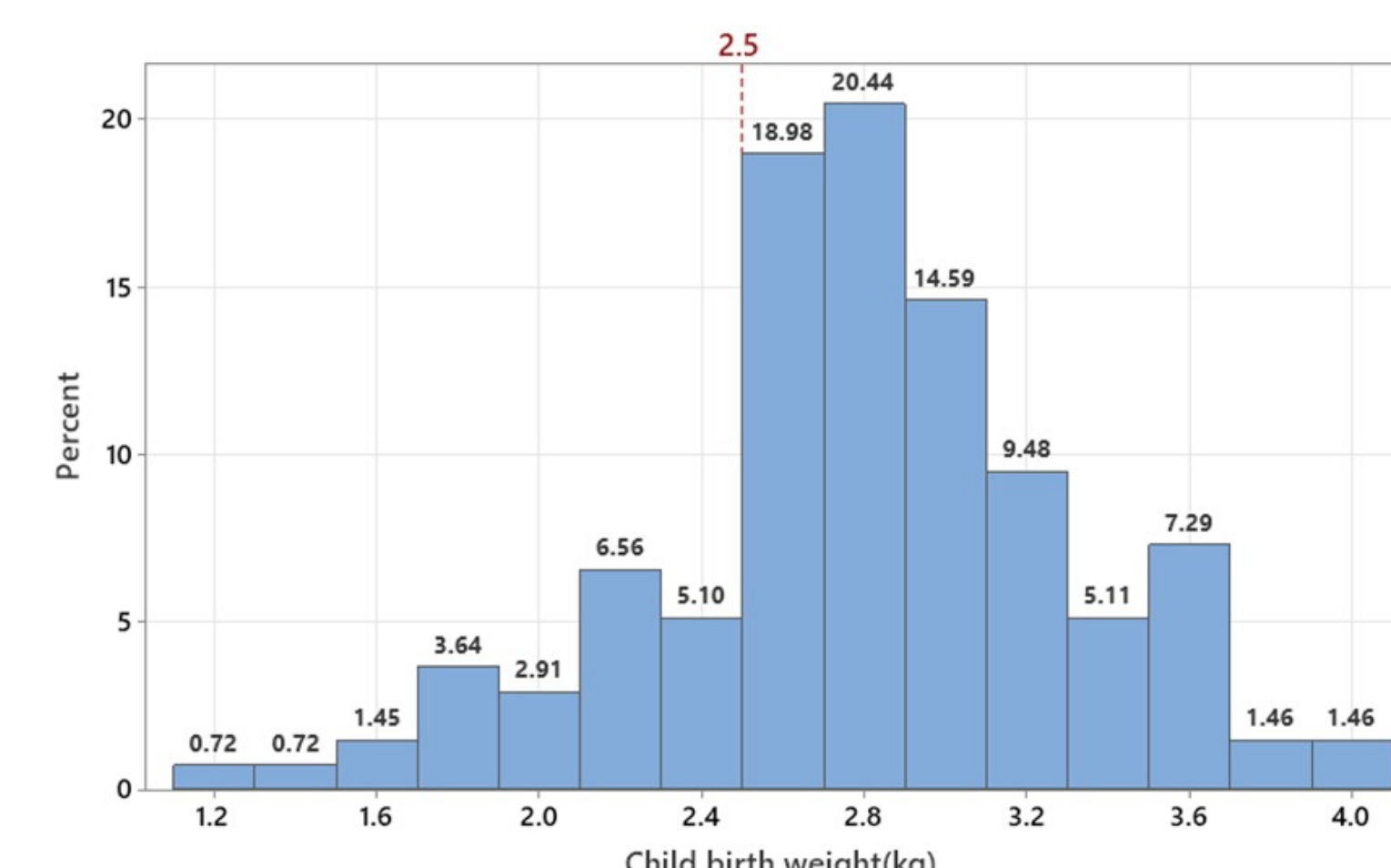

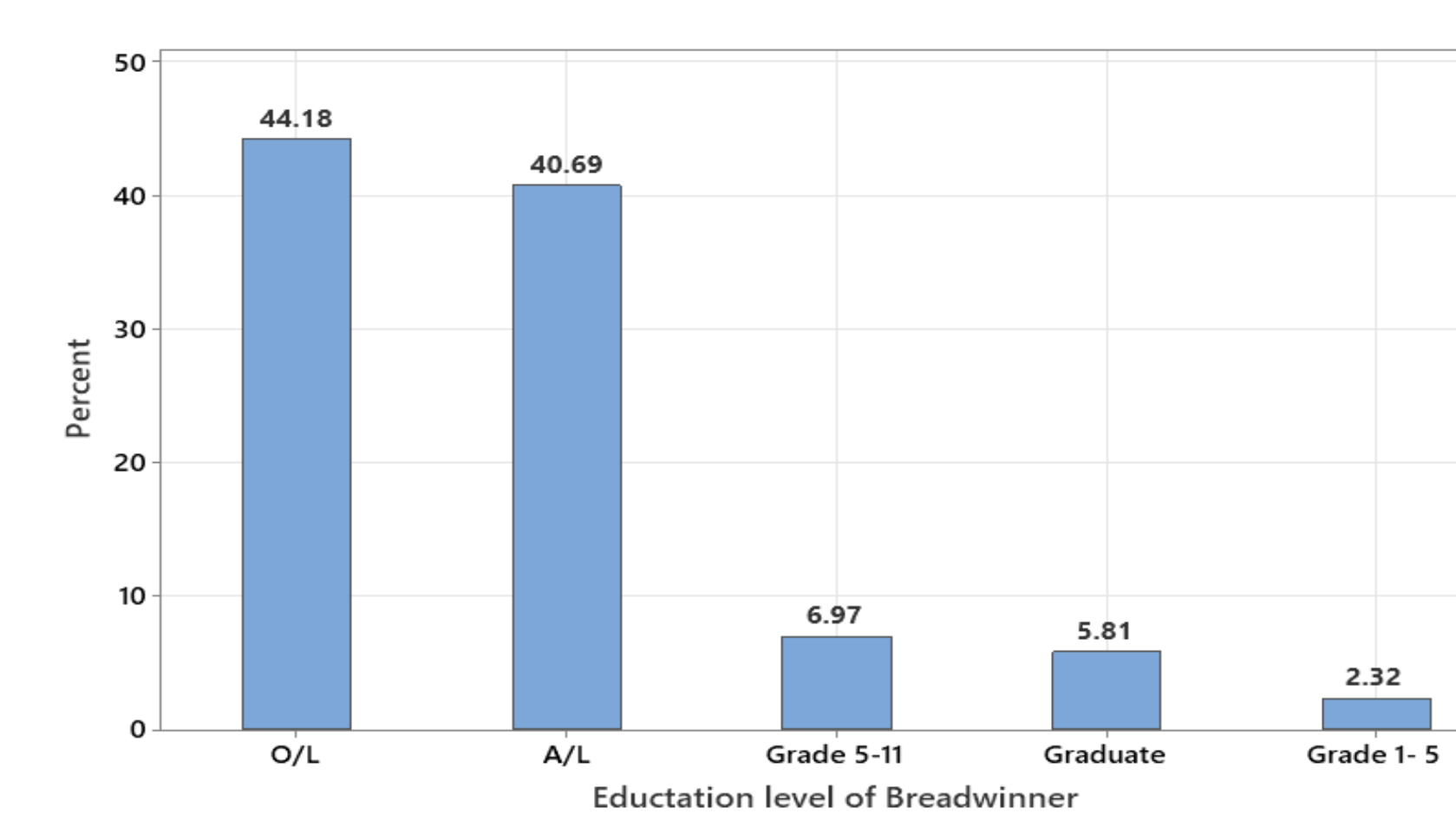**Figure 4: Distribution of birth weight of the respondents**

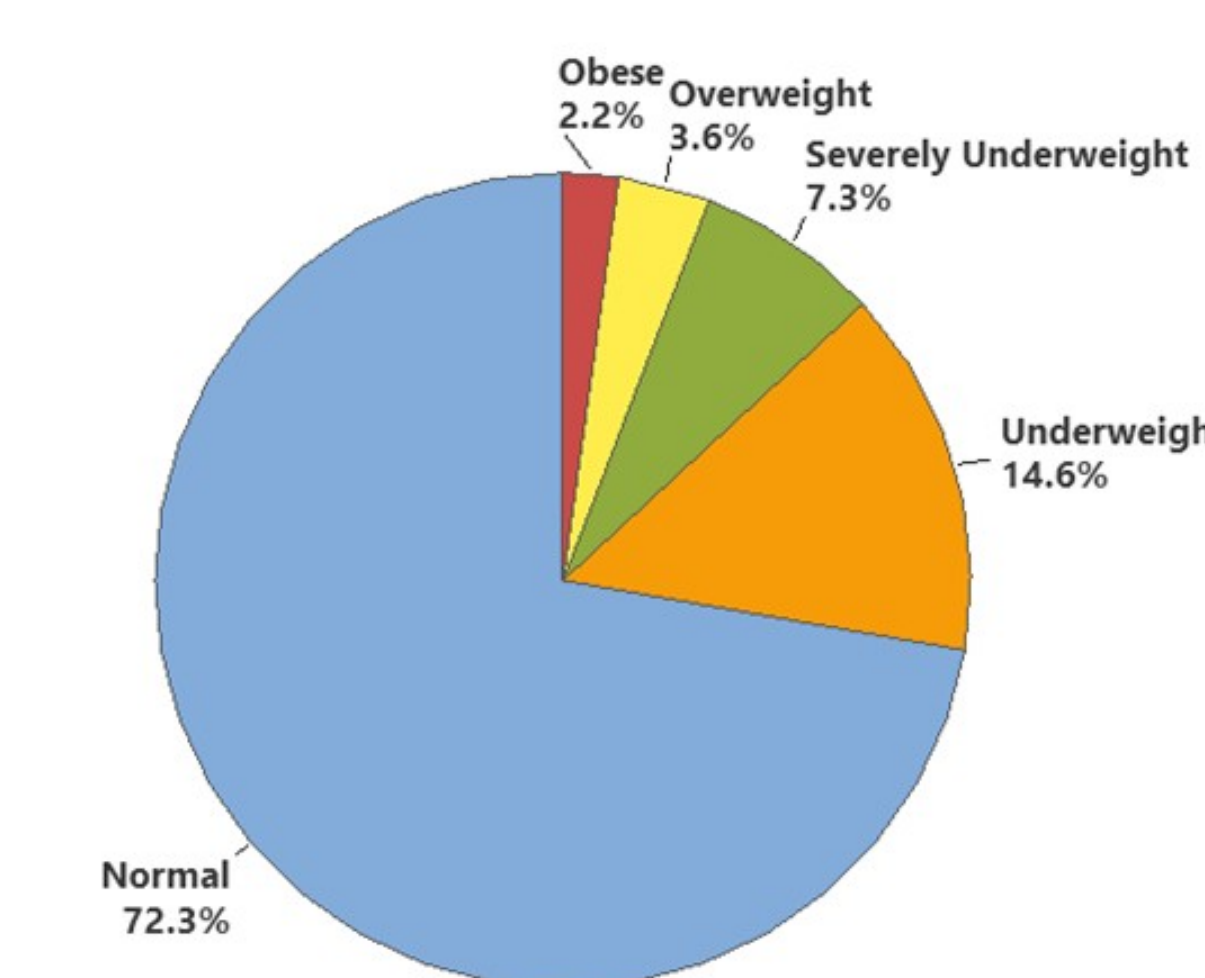**Figure 5: Breadwinner's education level of household**

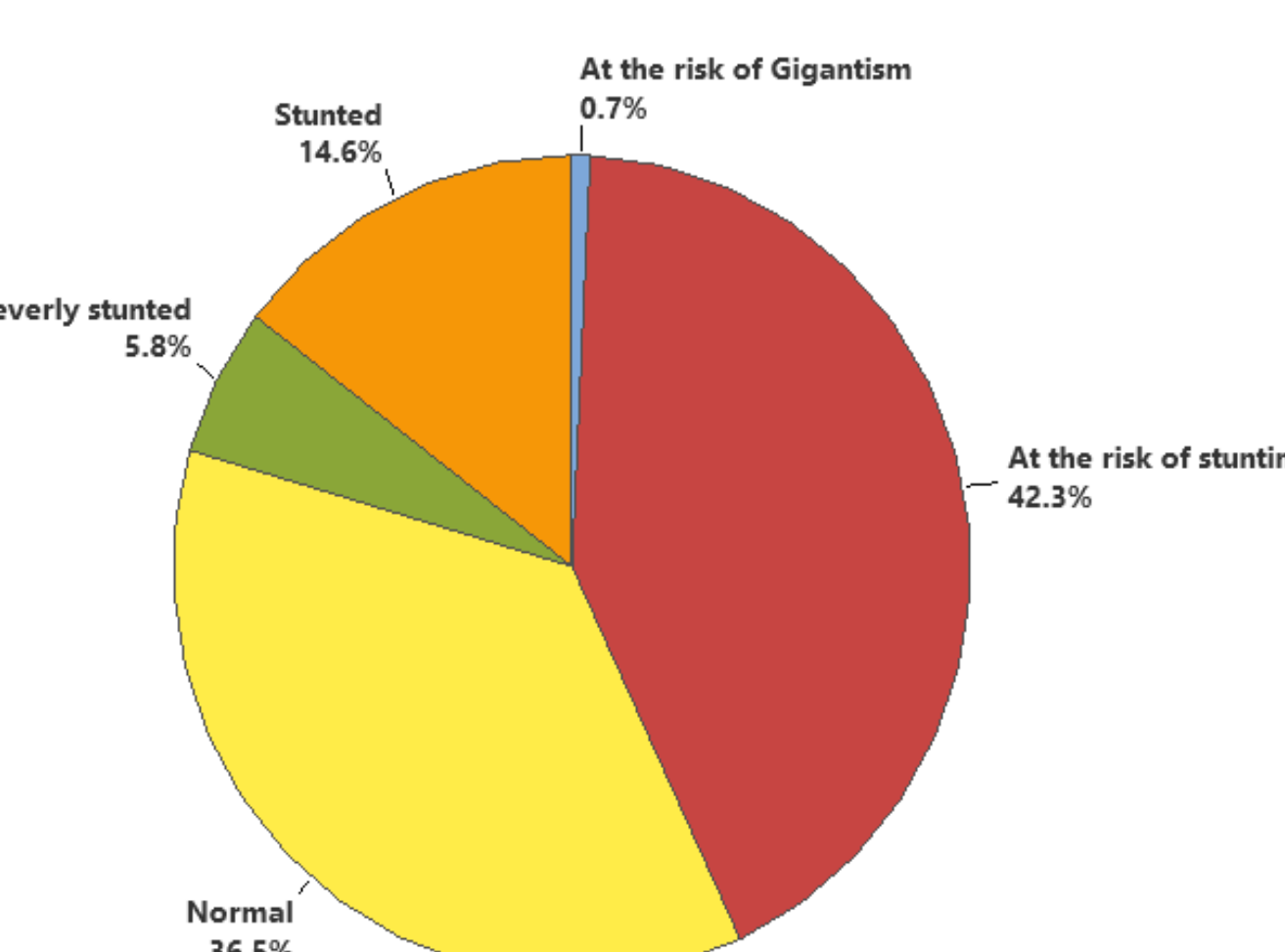**Figure 6: BMI-for-age Z score categories of whole sample**

Table 1: BMI-for-age Z score (BAZ) categories of the female and male respondents.

BAZ category	Female %	Male%
Obese	4.5	0
Overweight	4.5	2.8
Normal weight	68.2	76.1
Under weight	15.2	14.1
Severely Underweight	7.6	7.0

Figure 7: Height-for-age Z score categories of whole sample

Table 2: Height-for-age Z score (HAZ) categories of the female and male respondents.

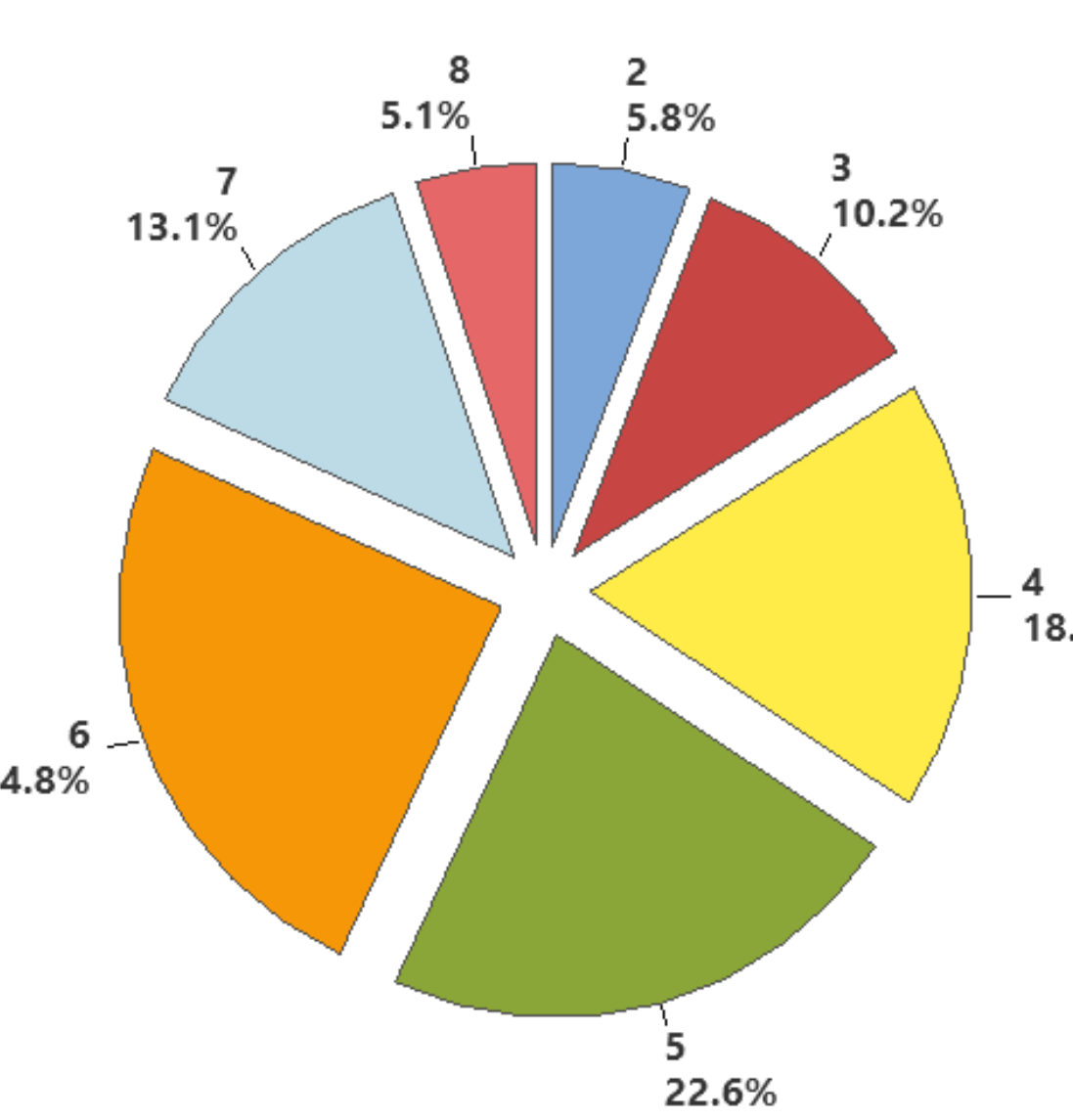| HAZ category	Female %	Male %
At the risk of Gigantisam	1.5	0
Normal height	34.8	38.0
At the risk of Stunting	43.9	40.8
Stunted	12.1	16.9
Severely Stunted	7.6	4.2

Figure 8: Percentages of Individual Diversity Score (IDDS)
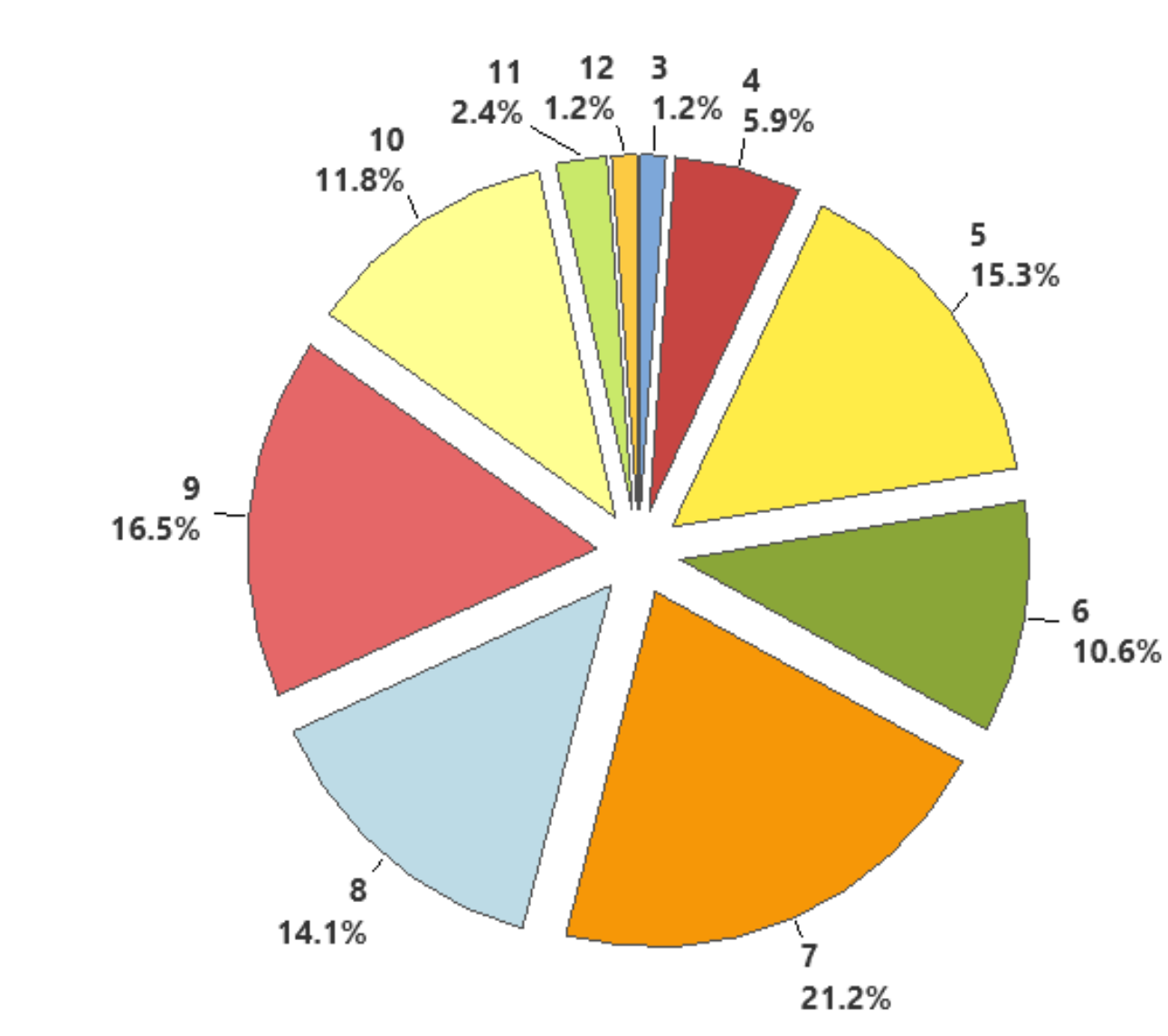
Figure 9: Household Dietary Diversity Score (HDDS)

Table 3: Results for Hypothesis testing

Sub objectives	Conclusion
1. To find out the **association between the BMI-for-age status & Birth Weight**	• (P=0.208) • No significant relationship
2. To find out the **association between the BMI-for-age status & the aggregate level of education of the bread winner**	• (P=0.763) • No significant relationship
3. To find out a **significant difference** between the **mean values of HDDS,** of the below categories. ➤ **Normal weight individuals & underweight/severely underweight individuals.**	• (P=0.443) • No significant difference
4. . To find out a **significant difference between the mean values of IDDS,** of the below categories. ➤ **Normal weight individuals & underweight/severely underweight individuals.**	• (P=0.657) • No significant difference
5. To find out a **significant difference** between the mean values of the **usual proportion of rice consumption** per day of **each age group** of the below categories. ➤ **Normal weight individuals & underweight/severely underweight individuals**	• P-values of each respective age group is lower than 0.05. • **There is a significant difference between the mean values**

IMPLICATIONS

The level of education of the breadwinner, the child's birth weight, IDDS, and HDDS did not significantly affect the BMI-for-age status. The BMI-for-age status was significantly impacted by the quantity of starchy food consumed.

Wasting and stunting in school children in "Galkadapathana" are growing concerns. Further research in different communities is needed to find the relationships between nutritional status and dietary patterns of different communities in South Asia. These findings will aid policymakers in decision-making to enhance nutritional status in rural communities.

REFERENCES

1. *UNICEF. (2022). Humanitarian Action for Children Sri Lanka Highlights.* www.unicef.org/appeals

2. *Central Bank of Sri Lanka. Annual Report 2022- Fighting Child Malnutrition in Sri Lanka amidst the Economic Crisis*

3. *Swindale A, Bilinsky P. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide (Version 2).; 2006. www.fantaproject.org*