

CHILDHOOD OBESITY AND TYPE 2 DIABETESAsma Alshehri*¹ and Asmahan Alshehri²

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Corresponding Author*Asma Alshehri**Ibn Sina Collage Jeddah
Saudi Arabia.**ABSTRACT**

Background: The incidence of type 2 diabetes mellitus (DM2) has markedly increased in the pediatric age group who are obese since the end of the 20th century. It is considered as emergency health problem. Children become overweight and obese for a variety of reasons. The most common causes are genetic factors, lack of physical activity, unhealthy eating patterns or a combination of these factors. This review aims to summarize the evidence of this association between obesity and type 2 diabetes mellitus. **Objective:** The aim of this study is to assess the prevalence of overweight and obesity among public

primary school and the incidence of type 2 DM the intention is not to diagnosed. It is to screen the obesity which is considered as risk factor for developing type 2 DM.

Sitting

Public primary school Jeddah – KSA.

Methods

A: Cross-sectional study addresses relation between the obesity and type 2 DM in a population of children in public primary school using variety of measurements.

1- Measurement of weight using digital portable scale.

BMI formula (weight /height^[2]) classified according to sex and age

- Healthy $\geq 5^{\text{th}}$ percentile.
- Overweight $\geq 85^{\text{th}}$ percentile.
- Obese $\geq 95^{\text{th}}$ percentile.

2- Random or fasting capillary blood glucose glucometer and respective test strip used to diagnosed capillary glucose blood level.

- **Random blood glucose level reference values**

≤ 140 mg/dl normal.

≥ 141-199mg/dl Borderline Diabetes.

≥ 200 mg/dl diabetes range.

- Fasting glucose level four hours and more reference values

≤ 100mg/dl Normal.

≥ 101 - 125 mg/dl Borderline Diabetes.

≥ 126 - 199mg/dl DM diabetes range.

3- Blood pressure using the aneroid sphygmomanometers was measured. The Measurement and analysis of BP values were based on the Saudi guideline on Hypertension.

- **Reference values**

BP < 90th percentile Normal.

BP ≥ 90 – 94th percentile or if BP >120/80 high normal.

Stage 1 hypertension: ≥ 95th - 99th percentile + 5 mmHg.

Stage 2 hypertension: ≥ 99th percentile + 5 mmHg.

4- Waist circumference classified as normal or central obesity according to age and sex.

- **Reference values**

WC > 80th percentile central obesity.

WC < 80th percentile normal.

B. Subject

Sample size: 1000.

- **Inclusion criteria**

➤ Age: 7-13.

➤ Females.

➤ Attending school at time of data collection.

- **Exclusion criteria**

➤ Child younger than 7 years and older than 13.

➤ Significant medical illness.

➤ Specific learning disabilities.

➤ Males.

C. Data collection methods and procedure

It is collected through All mothers were subjected to questionnaire. Questionnaire included questions related to name - age - nationality of the child, level of education of mother and the father, occupation of father and mother, duration of using of smart phone, type of activity child do, time spend to watch TV, type of food breakfast–lunch–dinner, type of drink and time of sleeping. The data were entered into a computer using SPSS software, version 18.0 for windows Chisquare test was performed. Significance was defined as P value < 0.05 Analysis was performed using SPSS software, version 18.0 for windows.

RESULTS

In relation to BMI, Female children aged between 7 to 12 years old. Out of 1000 total number of children (790-79%) children were in normal BMI range, while (150 - 15%) children were overweight and (60-6%) were obese. In relation to WC (858-85.5%) of the children were in normal range whereas Central obesity account for (142-14.2%). Out of 790 children with Normal BMI range (787 -99.6%) of them had normal glycemetic alterations (3- 0.4%) were in Pre diabetic range. Out of 150 child were overweight (126 -84%) have normal glycemetic alterations while (24-16%) were in Pre Diabetic range. A 60 obese child (6–10%) of them were actually suffer from diabetes millets disease whereas (32 -53.3%) child were Pre diabetic range range (22 -36.7%) were normal glucose level. As regarding BP (939-93.9%) children with normal range of BP value, (52-5.2%) within upper high limit, (9 with 0.9%) stage 1 HT.

CONCLUSIONS

There are many factors that affect the incidence of type 2 DM which is still not fully understood. This study shows A 60 obese child (6–10%) of them were actually suffer from diabetes millets disease whereas (32-53.3%) child were Pre diabetic range range (22-36.7%) were normal glucose level. one of the important factor is obesity. It is very crucial to promote health education that favors the adoption of healthy life habits.

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