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Risk Factors of Metabolic Syndrome among Normal Weight Adolescents in Lagos, Nigeria

Facteurs de Risque du Dydrome Métaboliquechez les Adolescents de Poids Normal à Lagos, Nigéria

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ABSTRACT

BACKGROUND: In the last few decades, the global disease epidemiology shift has resulted in the preponderance of non-communicable diseases such as Metabolic Syndrome (MetS). Globally, an increasing prevalence is reported among children and adolescents in whom the condition was once rare. There is a dearth of data in Nigeria on MetS, especially among normal-weight adolescents.

OBJECTIVE: To determine the prevalence and risk factors of MetS among normal-weight adolescents attending secondary schools at Mushin Local Government, Lagos.

METHODS: This descriptive cross-sectional study recruited adolescents using a multi-stage sampling technique. Self-administered questionnaires were used to obtain data on socio-demographic characteristics, physical activity, medical, family and dietary history. Waist circumference (WC), was measured from the midpoint between the lowest rib and the top of the iliac crest to determine central obesity, Body mass index was calculated as weight (in kilograms) divided by height (in meters²), and the World Health Organization (WHO) growth charts were used to determine their BMI percentiles. An appropriately sized bladder cuff of a sphygmomanometer was used in obtaining the blood pressure,

RESULTS: A total of 259 normal-weight adolescents were recruited. The mean \pm SD of participants was 13.6 ± 2.3 years. The prevalence of MetS among participants was 2.7%. The most common cardiometabolic risk factors were central obesity and elevated blood pressure in 7.7% and 7.3% of participants. Physical activity was significantly associated with a lower prevalence of MetS. A family history of hypertension and diabetes in first-degree relatives was significantly associated with MetS.

CONCLUSION: Metabolic syndrome was documented among apparently healthy normal-weight adolescent. A family history of hypertension or diabetes and physical inactivity were significantly associated with metabolic syndrome in study participants.

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KEYWORDS: Metabolic Syndrome; Adolescents; Normal Weight; cardiometabolic risk factors

RÉSUMÉ

CONTEXTE: Au cours des dernières décennies, le changement épidémiologique mondial des maladies a entraîné la prépondérance des maladies non transmissibles telles que le syndrome métabolique (MetS). À l'échelle mondiale, une prévalence croissante est signalée chez les enfants et les adolescents chez qui cette maladie était autrefois rare. Il y a une pénurie de données au Nigeria sur le MetS, en particulier chez les adolescents de poids normal.

OBJECTIF: Déterminer la prévalence et les facteurs de risque du MetS chez les adolescents de poids normal fréquentant les écoles secondaires du gouvernement local de Mushin, à Lagos.

METHODES: Cette étude transversale descriptive a recruté des adolescents à l'aide d'une technique d'échantillonnage à plusieurs degrés. Des questionnaires auto-administrés ont été utilisés pour obtenir des données sur les caractéristiques sociodémographiques, l'activité physique, les antécédents médicaux, familiaux et alimentaires. Le tour de taille (WC) a été mesuré à partir du point médian entre la côte la plus basse et le haut de la crête iliaque pour déterminer l'obésité centrale. L'indice de masse corporelle a été calculé comme le poids (en kilogrammes) divisé par la taille (en mètres²), et l'indice mondial de santé Les courbes de croissance des organisations (OMS) ont été utilisées pour déterminer leurs centiles d'IMC. Un brassard vésical de taille appropriée d'un sphygmomanomètre a été utilisé pour obtenir la tension artérielle,

RESULTATS: Au total, 259 adolescents de poids normal ont été recrutés. La moyenne \pm écart-type des participants était de $13,6 \pm 2,3$ ans. La prévalence du MetS parmi les participants était de 2,7 %. Les facteurs de risque cardiométaboliques les plus courants étaient l'obésité centrale et l'hypertension artérielle chez 7,7 % et 7,3 % des participants. L'activité physique était significativement associée à une prévalence plus faible du MetS. Des antécédents familiaux d'hypertension et de diabète chez des parents au premier degré étaient significativement associés au MetS.

CONCLUSION: Un syndrome métabolique a été documenté chez des adolescents de poids normal apparemment en bonne santé. Des antécédents familiaux d'hypertension ou de diabète et l'inactivité physique étaient significativement associés au syndrome métabolique chez les participants à l'étude. WAJM 2024; 41 (1): 74 - 81.

MOTS CLES: Syndrome métabolique ; Adolescents ; Poids normal; facteurs de risque cardiométaboliques

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List of Abbreviations: AAP: American Academy of Paediatrics, BMI: Body Mass Index, BP: Blood Pressure, IDF: International Diabetes Federation, HDL: High density lipoprotein, LDL: Low Density Lipoprotein, LMIC: Low- and Middle-income countries, NCDs: Non-communicable diseases, NCEP ATP III: National Cholesterol Education Program Adult Treatment Panel III, MetS: Metabolic Syndrome, WHO: World Health Organization