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## TABLE OF CONTENTS

GENERAL INFORMATION	1C
INFORMATION FOR AUTHORS	1F
EDITORIAL NOTES – <b>Stigma in Medicine</b> Ibidunni O. Oloniniyi, Gregory E. Erhabor.....	1137
<b>Time to Treat the Climate and Nature Crisis as One Indivisible Global Health Emergency.....</b>	1139
Kamran Abbasi, Parveen Ali, Virginia Barbour, Thomas Benfield, Kirsten Bibbins-Domingo, Stephen Hancocks, Richard Horton, Laurie Laybourn-Langton, Robert Mash, Peush Sahni, Wadeia Mohammad Sharief, Paul Yonga, Chris Zielinski	
<b>ORIGINAL ARTICLE</b>	
<b>Health Resource Utilization among Patients with Type 2 Diabetes Mellitus In Nigeria: An Analysis from the International Diabetes Management Practice Study (IDMPS).....</b>	1145
Kolawole B.A., Anumah F.A., Unachukwu C (for the IDMPS 7 investigators)	
<b>Health-Related Quality of Life and Its Determinants Among Hypertensive Patients in Rural Southwest Nigeria.....</b>	1155
E. A. Afolabi-Obe, S. M. Agboola, A. O. Ibrahim, O. E. Gabriel-Alayode, O. E. Omosanya, O. T. Elegbede, A. O. Ajetunmobi, K. O. Sito, T. M. Olanrewaju	
<b>Metabolic Syndrome and its Correlates among Hypertensive Patients in Abuja, North Central Nigeria.....</b>	1164
H. C. Onyegbutulem, P. I. Henry-Onyegbutulem, D. Dogo, P. E.H. Schwarz, S. R. Bornstein	
<b>Oral health and nutritional Status of Preschool-Aged Children in Maiduguri, North-East Nigeria.....</b>	1173
T. O. Ligali, O. O. Orenuga	
<b>Antibody response to Covid-19 vaccine (AstraZeneca) amongst Healthcare Workers in a Tertiary Hospital in Nigeria.....</b>	1181
Z. G. Habib V. G. Kwaghe, B. A. Ekele, A. A. Akor, U. S. Galadima, N. D. Baamlong, E. K. Olateju, P. C. Onyeka	
<b>Sleep Health amongst Patients Attending Adult Neurology Clinic in Abakaliki Nigeria.....</b>	1192
C. O. Eze, F. C. Okoro, M. Okorie	
<b>Stroke Hexagon; Protocol for Reduction of Stroke Burden in Resource-Poor Settings.....</b>	1199
C. O. Eze	
<b>The Stigma of Epilepsy among Patients attending The Epilepsy Clinic at Connaught Hospital, Sierra Leone.....</b>	1209
Durodami R. Lisk, Aliu Kanu, James B.W. Russell	
<b>Food and Aeroallergen Sensitization, Eosinophils Levels and Risk of Atopic Dermatitis in Abuja.....</b>	1216
P. U. Ibeke, T. I. Otu, E. E. Ekop, P. U. Bassi	
<b>Predictors of Surgical Site Infection in Contaminated Abdominal Surgical Wounds: Our Experience in Irrua Specialist Teaching Hospital.....</b>	1223
E. Tagar, J. Kpolugbo, W. Akerele, A. A. Okomayin, C. Odion	
<b>Overview of Early Childhood Caries in Nigeria and Global Recommended Treatment Guidelines.....</b>	1232
N. K. Onyējaka, A. R. Njokanma, A. Ehizele, A. Adewale	
<b>The Effect of Music on Operative Anxiety markers in patients undergoing Cataract Surgery: A dual centre cross-sectional comparative study.....</b>	1240
O. T. Aribaba, A. A. Adenekan, A. A. Alabi, C. C. Emefu, O. T. Ilo, M. O. Kareem, Y. O. Oshodi, A. O. Onakoya, F. B. Akinsola	
<b>Impact of Anemia on The Quality of Life of Chronic Kidney Disease Patients: A Single Institution Experience.....</b>	1253
A. Odeyemi, O. M. Oladimeji, A. O. Ajibare, A. A. Iyayi, A. B. Oladimeji, O. T. Ojo, A. P. Adebola, J. O. Awobusuyi, A. O. Adekoya	
<b>Intestinal Helminthiasis: Risk factors and relationship with Nutritional status and Anaemia among Institutionalised Children in three States of South-East Nigeria.....</b>	1262
M. O. Njoku, K. K. Iloh, C. O. Okike, G. C. Njoku, O. N. Iloh, N. C. Ojinnaka	
<b>CASE REPORT</b>	
<b>Pyoderma Gangrenosum in a Young Nigerian Male with Severe Ulcerative Colitis: A Case Report.....</b>	1274
C. P. Onyia, P. Asogwa W. Adiri, O. Obienu, U. N. Ijoma S. C. Nwokediuko	
<b>INDEX TO VOLUME 40, NO 11, November, 2023</b>	
Author Index .....	1280
Subject Index .....	1281



### Oral Health and Nutritional Status of Preschool-aged Children in Maiduguri, North-East Nigeria

#### *Santé Bucco-Dentaire et État Nutritionnel des Enfants d'Âge Préscolaire à Maiduguri, dans le Nord-Est du Nigéria*

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#### ABSTRACT

**BACKGROUND:** The most prevalent oral diseases, dental caries and periodontal disease, result in pain, discomfort, and loss of oral functions, often leading to poor nutrition.

**OBJECTIVES:** To assess the prevalence and relationship between oral health and nutritional status among children aged 2 to 5 years in Maiduguri, North-East Nigeria.

**METHODS:** A cross-sectional study that assessed caries experience, gingival status and nutritional status of children. Anthropometric measurements of weight-for-age and mid-upper arm circumference (MUAC) were used to assess nutritional status. Participants were randomly selected from three private schools. The MUAC was measured using a standardised tape rule. The weight-for-age by sex of the participants was extrapolated from the weight-for-age WHO chart. Oral health was assessed using the WHO Oral Health Survey Methods. Data were analysed using SPSS for Windows (version 23). Statistical significance was placed at 95% confidence and  $p \leq 0.05$ .

**RESULTS:** There were 239 participants with a male:female ratio of 1.2:1 (SE=0.03). Mean dmft was 0.72 (SE 0.09) and 63.2% had healthy gingiva (SE 0.04). The mean weight was 16.8kg (SE=0.15) and mean MUAC was 15.3 cm. Caries prevalence was associated with nutritional status and positively correlated ( $r=0.03$ ,  $P=0.64$ ). Gingival status was associated but inversely correlated with MUAC ( $r=-0.02$ ,  $P=0.76$ ).

**CONCLUSION:** Normal nutritional status was associated with no caries prevalence and healthy gingiva. Underweight was associated with caries prevalence. Adequate and healthy nutrition promotes good oral health in children. **WAJM 2023; 40(11): 1173 - 1180**

**Keywords:** Oral health status, Nutritional status, Preschool age, Maiduguri

#### RÉSUMÉ

**CONTEXTE:** Les maladies bucco-dentaires les plus prévalentes, la carie dentaire et la maladie parodontale, entraînent des douleurs, un inconfort et une perte de fonctions buccales, conduisant souvent à une mauvaise nutrition.

**OBJECTIFS:** Évaluer la prévalence et la relation entre la santé bucco-dentaire et l'état nutritionnel des enfants de 2 à 5 ans à Maiduguri, dans le Nord-Est du Nigéria

**MÉTHODES:** Une étude transversale qui a évalué l'expérience carieuse, l'état gingival et l'état nutritionnel des enfants. Les mesures anthropométriques du poids pour l'âge et le périmètre brachial moyen (MUAC) ont été utilisées pour évaluer l'état nutritionnel. Les participants ont été sélectionnés de manière aléatoire dans trois écoles privées. Le MUAC a été mesuré à l'aide d'une règle graduée normalisée. Le poids pour l'âge en fonction du sexe des participants a été extrapolé à partir du graphique de l'OMS. La santé bucco-dentaire a été évaluée selon les méthodes d'enquête de santé bucco-dentaire de l'OMS. Les données ont été analysées à l'aide de SPSS pour Windows (version 23). La signification statistique était fixée à une confiance de 95 % et  $p \leq 0,05$ .

**RÉSULTATS:** Il y avait 239 participants avec un ratio masculin/féminin de 1,2:1 (EE=0,03). La moyenne du dmft était de 0,72 (EE 0,09) et 63,2 % avaient des gencives saines (EE 0,04). Le poids moyen était de 16,8 kg (EE=0,15) et le MUAC moyen était de 15,3 cm. La prévalence de la carie était associée à l'état nutritionnel et corrélée positivement ( $r=0,03$ ,  $P=0,64$ ). L'état gingival était associé mais inversement corrélé au MUAC ( $r=-0,02$ ,  $P=0,76$ ).

**CONCLUSION:** Un état nutritionnel normal était associé à l'absence de prévalence de caries et à des gencives saines. L'insuffisance pondérale était associée à la prévalence de caries. Une nutrition adéquate et saine favorise une bonne santé bucco-dentaire chez les enfants. **WAJM 2023; 40(11): 1173 - 1180**

**Mots-clés:** État de santé bucco-dentaire, État nutritionnel, Âge préscolaire, Maiduguri

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**Abbreviations:** WHO: World Health Organization; MUAC: Mid-upper arm circumference; LMIC: Low medium income country; dmft: Decayed, missing and filled teeth; SE: Standard error; r: correlation coefficient