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## Polysomnography in a Private Tertiary Hospital in Tanzania: Subjects' Characteristics and Sleep Disorders

*Polysomnographie dans un Hôpital Tertiaire Privé en Tanzanie: Caractéristiques des Sujets et Troubles du Sommeil*

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**BRIEF SUMMARY:** Tanzania is a large country in East Africa with a population of about 62 million. There is a paucity of sleep laboratories in the country. This study was conducted to provide a brief outlook of referrals to a nascent sleep laboratory in Dar es Salaam, Tanzania, and to profile sleep disorders among the referrals. Sleep-related breathing disorders were the most identified sleep disorders. The study provides valuable descriptive polysomnographic data, which can aid future studies and stimulate policy interest in improving sleep medicine in Tanzania.

### ABSTRACT

**BACKGROUND AND OBJECTIVES:** Huge clinical and research gaps exist concerning the epidemiology, natural history, availability, and accessibility of care for sleep disorders in sub-Saharan Africa (SSA). This study aimed to profile the characteristics of patients referred for polysomnography and the frequencies of sleep disorders encountered at the new sleep laboratory in Dar es Salaam, Tanzania.

**MATERIALS AND METHODS.** This retrospective hospital-based descriptive observational study was conducted at the Aga Khan Hospital Dar es Salaam. Clinical and Polysomnographic parameters of the subjects referred for polysomnography between December 2019 and December 2022 were profiled.

**RESULTS:** During the study period, 54 subjects underwent overnight polysomnography and multiple sleep latency tests (MSLT). The subjects' mean age  $\pm$  standard deviation was  $44.1 \pm 15.2$  years. Males accounted for 57.4% of all study participants. Twenty-nine (53.7%) subjects had OSA. Nineteen (35%) subjects had normal polysomnographic findings. Periodic limb movement of sleep was found in 2 subjects (3.7%). Sleep-related bruxism was found in one subject, while another subject met the MSLT criteria for the diagnosis of Narcolepsy. Male gender (odds ratio: 5.60; 95% confidence interval: 1.35-23.23;  $p = 0.018$ ) and obesity (odds ratio: 6.13; 95% confidence interval: 1.48-25.47;  $p = 0.013$ ) were found to be the two significant predictors.

**CONCLUSION:** Sleep-related breathing disorder was the predominant condition, and obesity was the major predictor. Periodic limb movement disorder and Narcolepsy were less encountered. Larger cohort and population-based studies are advocated. **WAJM 2024; 41 (9): 913-918**

**KEYWORDS:** Obstructive sleep apnea; Polysomnography; Sleep disorders; sub-Saharan Africa Tanzania.

### RÉSUMÉ

**CONTEXTE ET OBJECTIFS:** D'importants écarts cliniques et de recherche subsistent concernant l'épidémiologie, l'histoire naturelle, la disponibilité et l'accessibilité des soins pour les troubles du sommeil en Afrique subsaharienne (ASS). Cette étude visait à dresser le profil des caractéristiques des patients adressés pour une polysomnographie et les fréquences des troubles du sommeil rencontrés dans le nouveau laboratoire du sommeil à Dar es Salaam, en Tanzanie.

**MATÉRIELS ET MÉTHODES:** Cette étude observationnelle descriptive rétrospective en milieu hospitalier a été réalisée à l'hôpital Aga Khan de Dar es Salaam. Les paramètres cliniques et polysomnographiques des sujets adressés pour une polysomnographie entre décembre 2019 et décembre 2022 ont été analysés.

**RÉSULTATS:** Au cours de la période d'étude, 54 sujets ont bénéficié d'une polysomnographie nocturne et de tests de latence multiple du sommeil (TLMS). L'âge moyen des sujets  $\pm$  écart-type était de  $44,1 \pm 15,2$  ans. Les hommes représentaient 57,4 % de tous les participants à l'étude. Vingt-neuf (53,7 %) sujets présentaient un syndrome d'apnée obstructive du sommeil (SAOS). Dix-neuf (35 %) sujets avaient des résultats polysomnographiques normaux. Le mouvement périodique des membres pendant le sommeil a été observé chez 2 sujets (3,7 %). Le bruxisme lié au sommeil a été trouvé chez un sujet, tandis qu'un autre sujet remplissait les critères TLMS pour le diagnostic de narcolepsie. Le sexe masculin (rapport de cotes : 5,60 ; intervalle de confiance à 95 % : 1,35-23,23 ;  $p = 0,018$ ) et l'obésité (rapport de cotes : 6,13 ; intervalle de confiance à 95 % : 1,48-25,47 ;  $p = 0,013$ ) se sont avérés être les deux prédicteurs significatifs.

**CONCLUSION:** Les troubles respiratoires liés au sommeil étaient les affections prédominantes, l'obésité étant le principal prédicteur. Les troubles du mouvement périodique des membres et la narcolepsie étaient moins fréquents. Des études sur des cohortes plus larges et des études en population générale sont recommandées. **WAJM 2024; 41 (9): 913-918**

**MOTS-CLÉS:** Syndrome d'apnée obstructive du sommeil, Polysomnographie, Troubles du sommeil, Afrique subsaharienne, Tanzanie.

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**ABBREVIATIONS - AHI:** Apnea-hypopnea index; **AKHD:** Aga Khan Hospital, Dar es Salaam; **AKHST:** Aga Khan Health Services, Tanzania; **AKU:** Aga Khan University; **BMI:** Body mass index; **CCI:** Charlton comorbidity index; **EHR:** Electronic health record; **LMIC:** Low- and middle-income countries; **NCD:** Non-communicable diseases; **OSA:** Obstructive sleep apnea; **PLMS:** Periodic Limb movements of sleep; **TST:** Total sleep time