MULTIDRUG-RESISTANT *Achromobacter animicus* CAUSING WOUND INFECTION IN A STREET CHILD IN MWANZA, TANZANIA.

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Highlights

- Fifth case of *A. animicus* worldwide and 1st case of wound infection
- First case report of *Achromobacter* species in Africa
- Unlike most *Achromobacter* species, the isolate was resistant to trimethoprim-sulfamethoxazole
- The isolate was sensitive to ciprofloxacin and gentamicin
- Importance of upgrading diagnostic facilities in Africa

Abstract

*Achromobacter animicus* (*A. animicus*) is an aerobic, motile, gram negative, non-fermenting small bacillus that can also grow anaerobically with potassium nitrate. It has been isolated from sputum of humans suffering from respiratory infections. Literature regarding the role of *A. animicus* in wound infections is limited. We report a first case of a chronic posttraumatic wound infection caused by a multidrug-resistant *A. animicus* in a street child from African continent.

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HIGH PREVALENCE OF WOUNDS AMONG STREET CHILDREN IN MWANZA CITY, TANZANIA: THE UNDERSTUDIED GROUP

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Background: Rapid growth of towns in low- and middle-income countries goes hand in hand with the increasing number of street children. Knowing the general health problems and needs of these children is crucial in helping them to live a better life. Therefore, this study was conducted to have baseline health status data of street children in Mwanza.

Methodology: Between April and July 2015, 226 children were enrolled in a study via the Wound Care Project after meeting the inclusion criteria. Their demographic data, anthropometric measurements, physical examinations and other factors related to their street life were summarized in a data collection tool. Children were examined to confirm the presence of wounds. Data were analyzed using STATA version 11 (STATA Corp LP, USA).

Results: Male sex was predominant by 97.8% (221/226). The mean age was 14.1 ± 3.8 years. Majority 47.8% (108/226) of children were found to be ‘of’ the street children who spent all their time in streets. Based on BMI, 49.6% (112/226) were underweight. The rate of drug abuse was 32.3% (73/226); out of 73 who reported to use drugs; 49.3% (36/73) used marijuana. Of the 226 children, 109 (48.2%) had wounds with 88% (96/109) of them being traumatic type. The most common mechanism of injury was accidents 57.8% (63/109) followed by cut 20.2% (22/109). Of the 109 children with wounds, only 11 (10.1%) reported to receive Tetanus Toxoid vaccination.

Conclusion: There is a need for government authorities to consider providing free healthcare for street children. Further studies on microbiological pattern of their wounds, other common health conditions such as upper respiratory tract conditions and sexually transmitted infections should be carried for better understanding their health needs.
PREVALENCE AND ASSOCIATED FACTORS OF OVERWEIGHT AND OBESITY AMONG HIGH SCHOOL ADOLESCENTS IN NORTHWEST COMMUNITIES OF TANZANIA

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ABSTRACT

Background: The increasing existence of overweight and obesity especially among adolescents is alarming and becomes a serious public health challenge. It is currently estimated that as much as 20-50% of urban populations in Africa are classified as either overweight or obese and that by 2025, 75% of the obese population worldwide will be in developing countries.

Objective: To assess the prevalence and associated factors of overweight and obesity among high school adolescent in Northwest communities of Tanzania.

Methodology: A single centric epidemiological study was conducted among 381 high school adolescents selected randomly in Nyamagana District, Mwanza City in 2014. Overweight and obesity were assessed using height and weight of each student in the class. The interview done to students for the socio demographic history and adolescent’s life style information as well as pattern of dietary intake were enquired.

Result: The overall prevalence of overweight and obesity was 14.2% and 2.6% respectively. The prevalence of overweight (13.4%) and obesity (2.6%) in adolescents residing in boarding school was higher than (0.8% overweight, 0% obese) those residing out of school campus. The meal frequency, meat, vegetables, fruits consumption was statistically significant with the p value of P<0.05.

Conclusion: The present study attempts to highlight adolescent’s overweight/obesity as an emerging health problem which need to be confirmed by large scale studies and effective preventive strategies should be developed to halt this epidemic at its beginning.
Background: Despite the increase of road traffic accident (RTA) injuries that claim significant lives of people in low and middle income (LMIC), there is no reliable pre-hospital emergency care in Tanzania. This survey was conducted to study the use of text messages as an emergency medical dispatch system.

Methods: In December 2015, a text message (SMS)-based emergency medical dispatch system known as BEACON software was deployed in Mwanza as a pilot region in Tanzania, The system receives a notification SMS from any person in urban Mwanza who happens to be at an accident scene. It then alerts trained responders located nearby to quickly move to the accident scene, provide an emergency first aid care to the injured and then transport the injured to local hospitals.

Results: from December 2015 to August 2016, a total of 104 trained volunteers responded to 112 incidents. An average of seven minutes was used by the responders to arrive at the accident scene following an initial alert.

Conclusion: Minimal human, physical and financial resources can be used in LMIC like Tanzania to dispatch RTA victims who need an urgent emergency care and enable them to get treatment within the golden hour. SMS-dispatching can be a cost-effective model of pre-hospital care system in all locations with mobile phones coverage in Tanzania.
HIGH VARIABILITY OF STAPHYLOCOCCUS AUREUS STRAINS CAUSING WOUND INFECTION AMONG STREET CHILDREN DWELLING IN MWANZA CITY STREETS IN TANZANIA.

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Background: The epidemiology of community-associated methicillin-resistance Staphylococcus aureus (CA-MRSA) has shown to vary not only geographically but also in different population groups. Street children were investigated for S. aureus colonization and pathogens causing wound infections to establish baseline epidemiological information in Mwanza community.

Methods: Nasal and wound swabs were collected and processed to identify S. aureus carriage and pathogens causing wound infections respectively following standard operating procedures. A polymerase chain reaction was used to screen for Panton Valentine leucocidin (PVL) and mecA genes of 29 selected Staphylococcus aureus isolates followed by spa typing.

Results: A total of 228 street children with a mean age of 14.09 +3.8 years were enrolled between April and July, 2015. Out of 228 street children, 109(47.8%, 95% CI 38.2-56.9) had wounds of which, 54(49.5%) had a significant growth of pathogenic bacteria. S. aureus formed the majority 39/54 (72.2%) of isolates. Other bacteria isolated were Streptococcus pyogenes (7), klebsiella spp. (4), Escherichia coli (2) Acinetobacter baumannii (1), Achromobacter animicus (1). (Nineteen 70%) spa types were observed in 27 S.aureus from wounds that were typed. Spa type t690 (3) and t1346 (3) were the most frequent. Out of 39 Staphylococcus aureus, 3(7.6%) were MRSA. All MRSA strains were typed as spa type t690. Two Staphylococcus aureus isolates including in all MRSA isolates. Of 228 children, 27 (11.8%) were colonized with Staphylococcus aureus of which only 2 had both colonization and infection.
PREVALENCE OF OVERWEIGHT AND OBESITY AMONG HIGH SCHOOL ADOLESCENTS IN URBAN COMMUNITIES OF MWANZA CITY-NORTH WEST TANZANIA,

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Background: The increasing existence of overweight and obesity, especially among adolescents, is alarming and is becoming a serious public health challenge as it predicts diabetes and cardiovascular diseases. Data on the prevalence and associated factors of overweight and obesity are needed for primary prevention. The study aimed at determining the prevalence and associated factors of overweight and obesity among high school adolescents in urban communities of Mwanza City.

Methods: An institution-based study was conducted among 381 high school adolescents aged 16-19 years selected randomly in Nyamagana District-Mwanza City from September 2014 to October 2014. Overweight and obesity were assessed using height and weight of each participant in the selected schools. Obesity was defined as a body mass index (BMI) >30kg/m² and overweight as BMI >25kg/m². A pre-tested questionnaire was used to collect socio-demographic and life style information of the participants.

Results: Of the 381 participants, 85.3% were females and 81.6% were residing in boarding schools. The overall prevalence of overweight and obesity was 14.2% and 2.6% respectively. The prevalence of overweight (13.4%) and obesity (2.6%) in adolescents residing in boarding schools was higher than those (0.8% overweight, 0% obese) of day students. Compared to males, females were more likely to be obese (3.2% vs 0%) or overweight (17.0% vs 0.32%). The meals frequency; meat, vegetables, fruits consumption; getting out for food; and less time of watching television and using computer were the main factors significantly associated (P<0.05) with overweight and obesity.
Conclusion: The present study attempts to highlight adolescents’ overweight/obesity as an emerging health problem, which needs to be confirmed by larger scale studies. Effective preventive strategies should be developed to halt this epidemic at its beginning.