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A retrospective clinical record review of malaria diagnoses in Haiti: 2008-2016

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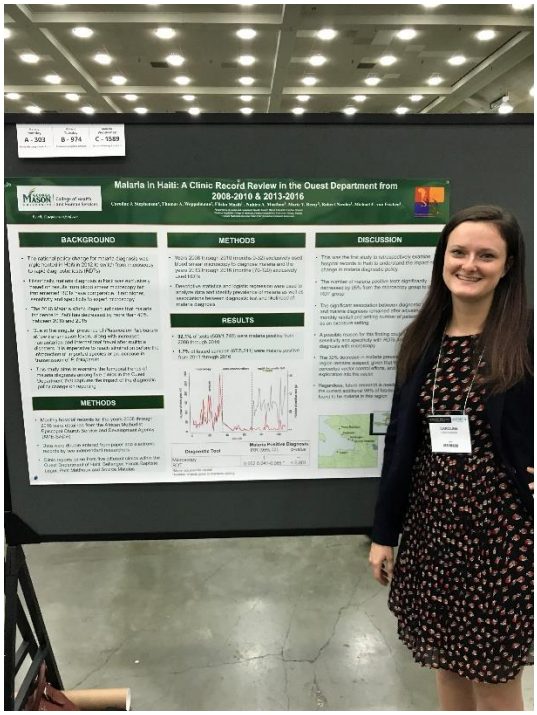
The national policy for malaria diagnosis in Haiti changed in 2012, switching from microscopy to rapid diagnostic tests (RDTs). This study aims to examine the temporal trends of malaria diagnosis among five clinics in the Ouest Department that captures the impact of this change in policy on reporting. Monthly clinic records from 2008 to 2016 were acquired from the African Methodist Episcopal Church Service and Development Agency, Inc. (AME-SADA) for five different clinics within the Ouest Department of Haiti. Data was dichotomized between "microscopy only" for the years 2008 to 2011 and "RDT" for the years 2012 to 2016. Descriptive statistics and logistic regression were used to analyze data. From 2008 to 2016, the percentage of malaria positive samples out of the total number tested was approximately 9% overall. The microscopy group was found to have 533 malaria positives out of 1678 suspected cases (31.8%), while the RDT group had 92 malaria positives out of 5272 suspected cases (1.7%). After adjusting for the number of people tested, patients examined by microscopy were approximately 1.8 times more likely to have a malaria positive diagnosis than patients examined by RDTs (OR = 1.79 95% CI: 1.44-2.24). The significant difference between percentages of confirmed cases before and after the implementation of RDTs in Haiti may be evidence of improved diagnostics with the switch to RDTs and possible previous over diagnosis with microscopy. However, a plausible reason for this could be differences in thresholds of detection or that microscopy was identifying asymptomatic gametocytemia while RDTs identified the acute clinical phase. Regardless, 98% of suspected malaria cases tested negative, warranting further investigations into the underlying cause of undifferentiated febrile illness in Haiti.



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Retrospective hospital review of the incidence HIV and syphilis in Haiti from 2008-2016

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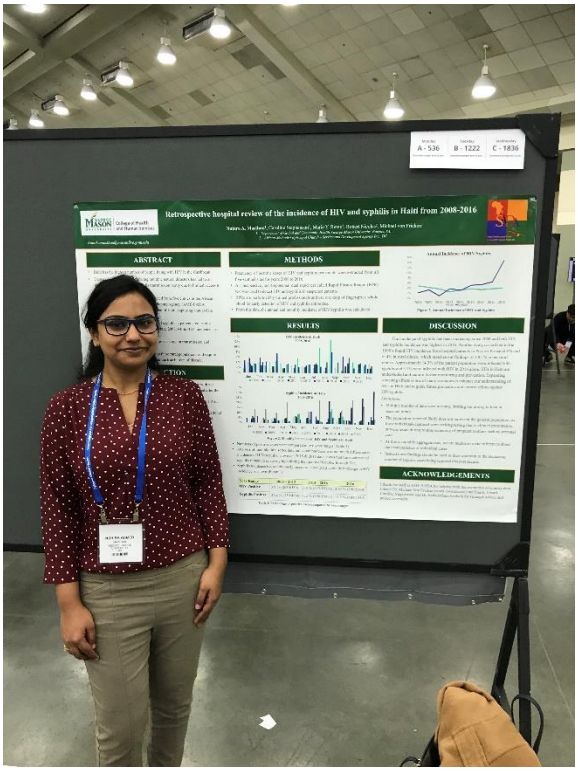
Haiti is among the poorest countries in the Western Hemisphere and has the highest number of people living with Human Immunodeficiency Virus (HIV) in the Caribbean region. Damaged infrastructure following multiple natural disasters has led to an increase risk of HIV and syphilis transmission, due to limited access to health services. Retrospective clinical data focusing on HIV and syphilis was extracted from five African Methodist Episcopal Service and Developing Agency (AME-SADA) network clinics located in the Ouest department of Haiti, capturing data from 2008-2016. Monthly incidence and annual trends were then examined. All data was double entered to ensure accuracy. Between 2008 and 2012, 3.9% (263/6580) of those tested for HIV were found to be positive, while 3.02% (150/4966) number of patients were found to be infected with syphilis. Between 2013 and 2016, the HIV prevalence decreased to 3.4% (523/15331) and syphilis cases increased to 6.2% (996/15973). In 2016 alone, the prevalence of HIV was 3.67% (190/5169) while syphilis was 14.3% (189/1319). However, the 2016 HIV prevalence is relatively high compared to previous years, which may indicate surging transmission and requires monitoring. Studies in Haiti have shown that syphilis infection or having any other sexually transmitted infections (STI's) increases the risk of facilitating HIV transmission and acquisition. In addition, HIV/syphilis infection during pregnancy can lead to adverse birth outcomes, congenital syphilis and increases the risk of mother to child transmission of HIV. Ongoing efforts and funding are critical to reducing the ongoing epidemic of HIV and other STIs in Haiti.



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Impact of household water source on school absence among children living outside of Port-au-Prince, Haiti

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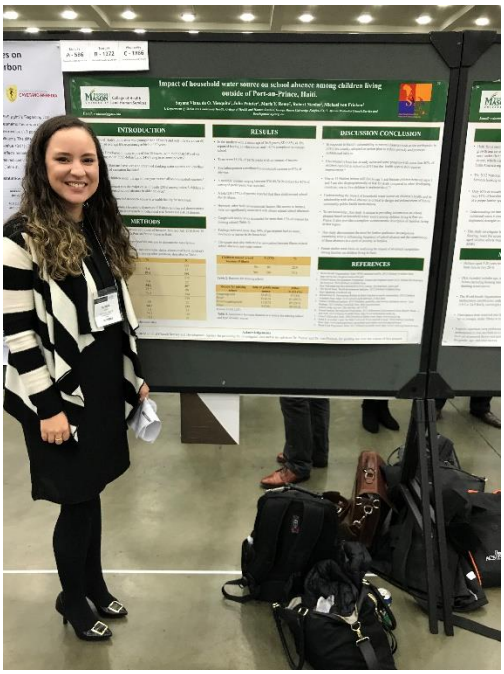
As one of the poorest populations in the world, 56% of Haitians live in urban areas, less than 70% have access to improved drinking water sources and less than 30% have improved sanitation facilities. Although vaccination coverage has been increasing, less than 50% of children under the age of one year receive all recommended vaccines. Acute respiratory disease was the major cause of death (20%) among under-5 children in 2013. Respiratory diseases also affect older children and can impact school absence. Understanding the impact of household water source on children's health and its relationship with school absence is critical to design and enhance future interventions to improve health among Haitian families. Data were collected through surveys between June and July, 2016 from 39 different schools located outside Port-au-Prince region in Haiti. In total, 387 mothers described their socioeconomic status, educational level, children's health status, access to healthcare, among other characteristics. Chi-square tests, using SPSS (version 24), demonstrated associations. Mothers had a mean age of 36.9 years (SD 9.65) and 41.8% reported having no educational level, while only 14.1% completed secondary school. Only 18.6% of participants reported not having a source of income, compared to 81.4% employed. Father/partner contributed to household income in 84% of answers, resulting in a monthly income ranging between $30.00-74.96 dollars for 45% of surveyed participants. Findings indicated more than 94% of participants had no water, electricity or latrine in the household; chi-square tests also indicated an association between illness-related school absences and water source. Cough/cold and/or fever accounted for more than 17% of cases. However, other built environmental factors, like access to latrines, were not significantly associated with illness related school absences. This study provides unique insight to the household dynamics of Haitian families and demonstrates the need for further qualitative investigations examining behavioral risk factors associated with respiratory disease spreading.



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Influence of environmental conditions on nutritional status among school-age children in Haiti

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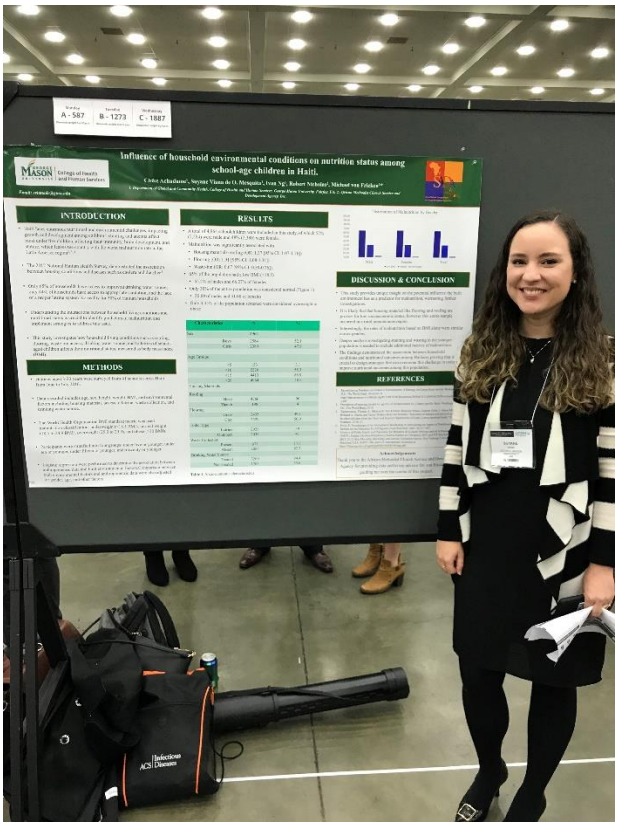
Understanding the influence of living conditions on indicators of malnutrition among Haitians school-children, is vital for guiding future interventions. This study investigates the potential influence of built environment on nutritional status, as measured by body mass index (BMI). Haitians aged 3-20 years were surveyed from 41 schools across Archaie Commune of Haiti, from June to July 2016. Data recorded includes age, sex, height, weight, BMI, and environmental factors including housing material, access to latrine, waste collection, and drinking water source. Logistic regression and Chi-square were performed to determine the association between malnutrition data and built environmental factors. A total of 4,964 schoolchildren were included in this study, of which 52% (2,584) were male and 48% (2,380) were female, of which 68.5% of the population had a low BMI (<18.5 BMI). Malnutrition was significantly associated with housing materials-roofing (OR: 1.37 [95% CI: 1.07-1.76]), flooring (OR: 1.91 [95% CI: 1.08-1.31]), and waste collection (OR: 0.67 [95% CI: 0.59-0.76]). Built environmental conditions like roofing, flooring, and waste collection are likely proxies for socio-economic status, however this survey was implemented in an impoverished rural mountain region. These findings add to the body of literature on malnutrition in Haiti, while investigating the associations between household environmental conditions and malnutrition measurements. Furthermore, this research suggests a potential link between household environmental conditions and nutritional outcomes among Haitians, which could potentially be used to identify at risk population.



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Environmental risk factors of tungiasis in Haiti: a neglected disease

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Tungiasis, a skin disease caused by the penetration of sand fleas (jiggers), is a neglected tropical disease endemic to impoverished regions of the Americas, especially Haiti. Unfortunately, there has been little surveillance for this condition, despite prevalence rates as high as 30% in a cross-sectional study of four distinct geographical locations in Haiti. Complicating the matter further, Haiti has lost 97% of its forests since 1987 creating an environment that is hospitable to sand flea infestation, which may increase the risk of tungiasis. Other studies have identified environmental risk factors for tungiasis including elevation above 2000 meters, sandy soil (which can result from deforestation), and poverty. This study aims to identify potential high risk regions of tungiasis transmission based on environmental factors, including remote sensing data focusing on normalized vegetation difference index (NDVI), elevation, and population density. Through spatial analysis of these variables, we hope to identify high risk regions that can guide future surveillance efforts investigating the burden of tungiasis in Haiti.