

Outline: Malaria in children living in Africa

- I. Introduction
 - a. Scope of malaria as a public health issue
 - b. Burden of malaria on children in Africa
 - c. Statement of purpose: review why Malaria is a public health issue among children in Africa
 - i. Effects related to all levels of the ecological health framework
- II. Background and Significance
 - a. Information / history of malaria
 - i. Public health issue for 60 million years (Reiter, 2001)
 - ii. Introduction of agriculture in 7000 BC in Greece and Rome is what kick started malaria (Reiter, 2001)
 - 1. Marcus Terentius Barro (116-127 BC) advised citizens to build their houses high up, ventilate them well, and use protective nets.
 - iii. Transmission (Reiter, 2001)
 - b. Significance
 - i. High rate of cases (WHO, 2016)
 - 1. 214 million cases of Malaria in 2015
 - ii. Contributor to low birth rates (UNICEF, 2013)
 - 1. Mom being infected, risk factor for infant mortality
 - c. How transmitted (Reiter, 2001)
 - i. 3500 species of mosquitoes
 - ii. Females trying to reproduce need blood to do so
 - iii. Females bite humans which transfers their pathogen-containing saliva
 - d. Population affected (Focus of paper)
 - i. Saharan Africa has the largest burden (Tolle, 2009; WHO, 2016)
 - 1. Two species most capable of transmission (Webb, 2011)
 - a. Anopheles gambiae and anopheles funestus
 - 2. Long summer season makes it conducive to malaria transmission (Reiter, 2001)
 - ii. Children
 - 1. Have the largest burden (Tolle, 2009)
 - 2. 90% of the deaths of children in Saharan Africa are from malaria (UNICEF, 2013)
 - 3. Most deaths between 2 and 5 (Webb, 2011)
 - 4. 1 child dies every minute, 1 in 6 childhood deaths (UNICEF, 2013)

III. Theoretical Framework

- a. (Fielding et al., 2010) – Brief overview of Ecological Health Framework
 - i. Brief overview of determinates of health applicable to paper

IV. Analysis of Topic

- a. Review of factors to be analyzed specific to children in Africa with Malaria
 - i. Individual Behaviors
 - 1. Educational levels of mothers (Maharaj et al., 2013; Ernest et al., 2009)
 - a. Timeliness of treatment (Chukwuocha, 2014)
 - i. Uneducated moms are more likely to delay seeking treatment for the child, will keep an eye on them for days before doing anything, they do not understand the complications that can arise, don't have the means to find healthcare
 - ii. Only 22% of women in a study done in Nigeria sought medical help for their children with Malaria within 24 hours
- ii. Living and Working Conditions
 - 1. Income (Maharaj et al., 2013)
 - a. "disease of poverty"
 - b. Infection is primarily in poor rural areas
 - 2. Types of housing (Ernest et al., 2009; Reiter, 2001)
 - a. Metal roofs – 1.43 times higher odds (Ernest)
 - b. Absence of ceilings – 1.40 times higher odds (Ernest)
 - 3. Location of homes (Ernest et al., 2009)
 - a. Channeled swamp water near – 2.43 times higher odds
 - b. House on flat lands tend to accumulate water and are near livestock
 - c. Living near a forest – 1.77 times higher odds
 - d. Absence of trees and presence of maize increases chances as well
- iii. Social, Family, and Community Networks
 - 1. Family
 - a. Women wait for decision of husband to seek treatment of child (Chukwuocha, 2014)
- iv. Broad Social, Cultural, and Environmental Conditions
 - 1. Access to medical care (Chukwuocha, 2014; Donnelly et al., 2005; Maharaj et al., 2013)
 - a. High rate of misdiagnosis with undereducated people (Donnelly)
 - i. 70% of cases are self-diagnosed in rural Africa, and 50% in urban due to inability to get appropriate medical care
 - 2. Urbanization / Industrialization (Donnelly et al.; Klinkenberg et al., 2008; Reiter, 2001)

- a. African population will triple by 2050 (Donnelly)
 - b. Global travel (Reiter, 2001; Tatem, Rogers & Hay, 2006)
 - c. Deforestation / Agriculture (Reiter, 2001)
 - i. Eliminates some species but creates breeding grounds for others
 - ii. Fertilizers in agriculture also promote growth of larvae
- 3. Climate / Climate Change (Parham & Michael, 2010; Reiter, 2001)
 - a. Global temperature increase incidence and range of disease (Reiter, 2001), temperature affects rate of multiplication
- 4. Economy (Reiter, 2001; UNICEF, 2013)
 - a. UNICEF – malaria actually causes the vicious cycle of poverty because the country cannot handle the poverty and death rates
 - b. Will lead to a serious lack of progress (Reiter, 2001)
- V. Interventions
 - a. Dispersing insecticide treated nets (O'Meara, 2010; UNICEF, 2013)
 - i. UNICEF – reduces mortality in children by 20%
 - 1. Only 36% currently sleep under them
 - b. Medication (O'Meara, 2010)
 - c. Treatment during pregnancy (Chico, 2015; Eisele et al., 2012)
 - d. Case management
 - i. Improve care, make more appealing (Kizito, 2012)
 - ii. Community based management (UNICEF, 2013)
- VI. Implications
 - a. Public health sector (Reiter, 2001)
 - i. Practically nonexistent due to lack of funding
 - b. Economic downturn (UNICEF, 2013)
 - c. Worsening HIV (UNICEF, 2013)
- VII. Conclusions
 - a. Summary: health determinants related to malaria among children in Africa
 - b. Summary: interventions use to mitigate the problem and implications of effectiveness for the future

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