UNIVERSITI PUTRA MALAYSIA

FACTORS ASSOCIATED WITH HEALTH SEEKING BEHAVIOR FOR MALARIA TREATMENT AMONG CAREGIVERS OF UNDER-FIVE CHILDREN WITH FEVER IN IMO STATE, NIGERIA

EMILIA OLUCHI SAMPSON

FPSK(M) 2018 35
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By

EMILIA OLUCHI SAMPSON

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Master of Science

May 2018
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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

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By

EMILIA OLUCHI SAMPSON

May 2018

Chairman : Rosliza Abdul Manaf, PhD
Faculty : Medicine and Health Sciences

Background: Malaria is a vector-borne disease that affects millions of people globally yearly. Malaria affects mainly young children under-five years and pregnant women. Appropriate health seeking-behavior (HSB) is important when seeking treatment for children under-five years with fever. Appropriate HSB among the caregivers will help the children to have better prognosis of malaria, because treatment will be initiated early.

Objective: The aim of this study is to determine the HSB practices among caregivers of children under-five years with fever in Imo State Nigeria and factors associated with HSB.

Methodology: A cross sectional study was conducted in Imo State, Nigeria. Multistage random sampling was employed, in the first stage four local governments out of 27 local governments was selected at random. In the second stage, simple random sampling with proportionate to size was employed to select the number of participants from each of the four selected local government. Appropriate HSB was operationally defined as seeking treatment from health facility within 24 hours of onset of fever. Data was obtained using guided self-administered questionnaire that was distributed to the caregivers. The inclusion criteria include caregivers of children under-five years that had fever two weeks prior to the study in Imo State Nigeria. Data was analyzed using IBM SPSS version 22.
**Result:** A total of 553 respondents was recruited, response rate of 98.9%. Only 18.6% of the caregivers demonstrated appropriate HSB. There was significant association between appropriate HSB and caregiver’s age ($\chi^2 =43.833$, p = 0.001), caregiver’s relationship to child ($\chi^2 =4.573$, p = 0.032), occupation ($\chi^2 =20.861$, p = 0.001), monthly income ($\chi^2 =19.630$, p = 0.001), number of household member ($\chi^2 =38.354$, p = 0.001), ethnicity ($\chi^2 =8.183$, p = 0.004), child’s age ($\chi^2 =50.619$, p = 0.001), child’s gender ($\chi^2 =26.604$, p = 0.001), caregivers knowledge of malaria that children under-five are vulnerable groups ($\chi^2 =8.103$, p = 0.017), caregivers knowledge that pregnant women are vulnerable groups to malaria ($\chi^2 =17.721$, p = 0.001), caregivers knowledge on the use of mosquito coil ($\chi^2 =4.715$, p = 0.030). Regarding caregivers preventive practice, there was significant association between bringing the child home before dawn ($\chi^2 =11.415$, p = 0.003), using mosquito coil ($\chi^2 =6.200$, p = 0.045), clearing of bushes around the house ($\chi^2 =8.922$, p = 0.012) and deciding factor for child’s treatment ($\chi^2 =24.242$, p = 0.001). Using a p-value of 0.05 as the significant level, predictors of HSB in final model are occupation (aOR= 1.882; 95%CI: 1.014-3.493), number of household members (aOR=2.504; 95%CI=1.464-4.283), ethnicity (aOR=11.641; 95%CI=3.337-40.601), child’s age (aOR=2.804; 95%CI=1.485-5.295), child gender (aOR=2.760; 95%CI=1.536-4.958) and decision making (aOR=0.142; 95%CI=0.032-0.619).

**Conclusion:** Caregivers’ health-seeking behavior was poor for fever cases among under-five year children. It is necessary to educate caregivers, especially for early treatment and appropriate use of health facilities for fever. This finding can help promote awareness and improve interventions in communities.

**Keywords:** Health-seeking, malaria, caregivers, under-five children, Nigeria.
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

FAKTOR BERKAITAN DENGAN TINGKAH LAKU PENCARIAN KESIHATAN BAGI RAWATAN MALARIA DALAM KALANGAN PENGASUH KANAK-KANAK BAWAH LIMA TAHUN YANG DEMAM DI NEGERI IMO, NIGERIA

Oleh

EMILIA OLUCHI SAMPSON

Mei 2018

Pengerusi : Rosliza Abdul Manaf, PhD
Fakulti : Perubatan dan Sains Kesihatan

Latar belakang: Malaria merupakan penyakit bawaan vektor yang menjejaskan ribuan manusia seantara dunia setiap tahun. Jangkitan Malaria boleh menjejaskan kesihatan kanak-kanak bawah lima tahun dan wanita mengandung. Tingkah laku mendapatkan rawatan kesihatan (HSB) yang sesuai adalah penting semoga mendapatkan rawatan bagi kanak-kanak di bawah lima tahun yang demam. HSB yang sesuai dalam kalangan penjaga akan membantu kanak-kanak mendapatkan prognosis malaria yang lebih baik kerana rawatan sewajarnya dapat diberikan seawalnya.

Objektif: Tujuan kajian ini adalah untuk menentukan amalan HSB dalam kalangan penjaga kanak-kanak di bawah lima tahun yang megdai di negeri Imo, Nigeria dan faktor berkaitan dengan HSB.

Metodologi: Kajian keratan rentas telah dijalankan di negeri Imo, Nigeria. Persampelan random multiperingkat telah digunakan, Dealam peringkat pertama, empat kerajaan tempatan daripada 27 kerajaan tempatan telah dipilih secara random. Di dalam peringkat kedua, persampelan random mudah bersekadar dengan saiz telah digunakan bagi memilih bilangan peserta dari setiap empat kerajaan tempatan. HSB yang sesuai secara operasional telah didefinisikan sebagai rawatan pencarian dari fasiliti kesihatan dalam tempoh 24 jam bermulanya demam. Data telah diperolehi menggunakan soal selidik urus kendiri dibimbing yang telah diedarkan kepada penjaga. Kriteria rangkuman termasuk penjagu kanak-kanak bawah lima tahun yang...
demam dua minggu sebelum kajian di negeri Imo, Nigeria. Data telah dianalisis menggunakan SPSS IBM versi 22.

Dapatan: Sejumlah 553 responden telah direkrut, kadar respon ialah 98.9 %. Hanya 18.6% pengasuh yang menunjukkan HSB yang sesuai. Terdapat perkaitan yang signifikan antara HSB yang sesuai dengan usia penjaga (χ² =43.833, p= 0.001), hubungan penjaga dengan kanak--kanak (χ² =4.573, p= 0.032), pekerjaan (χ² =20.861, p= 0.001), pendapatan bulanan (χ² =19.630, p= 0.001), bilangan ahli isi rumah (χ² =38.354, p= 0.001), etnik (χ² =8.183, p= 0.004), usia kanak-kanak (χ² =50.619, p= 0.001), gender kanak-kanak (χ² =26.604, p= 0.001), pengetahuan pengasuh tentang malaria kanak-kanak bawah lima tahun yang merupakan golongan rentan (χ² =8.103, p= 0.017), pengetahuan penjaga mengenai wanita mengandung yang merupakan golongan rentan pada malaria (χ² =17.721, p= 0.001), pengetahuan penjaga tentang penggunaan koil nyamuk (χ² =4.715, p= 0.030). Berkenaan amalan preventif penjaga, terdapat pertalian yang signifikan antara membawa kanak-kanak pulang sebelum senja (χ² =11.415, p= 0.003), menggunakan koil nyamuk (χ² =6.200, p= 0.045), membersihkan semak di sekeliling rumah (χ² =8.922, p= 0.012) dan faktor penentu bagi rawatan kanak-kanak (χ² =24.242, p= 0.001). Dengan menggunakan nilai p-value 0.05 sebagai tahap kesignifikan, prediktör HSB dalam model akhir pekerjaan (aOR= 1.882; 95%CI: 1.014-3.493), ahli isi rumah (aOR=2.504; 95% CI=1.464-4.283), etnik (aOR=11.641; 95% CI=3.337-40.601), usia kanak-kanak (aOR=2.804; 95% CI=1.485-5.295), gender kanak-kanak (aOR=2.760; 95% CI=1.536-4.958) dan pembuat keputusan (aOR= 0.142; 95% CI=0.032-0.619).

Kesimpulan: Tingkah laku mendapatkan rawatan kesihatan di kalangan penjaga adalah rendah bagi kes demam dalam di kalangan kanak-kanak lima tahun. Oleh sebab itu, terdapat keperluan untuk mendidik penjaga, terutama bagi meadapcit kan rawatan awal dan penggunaan fasiliti kesihatan yang sesuai bagi demam. Dapatan ini dapat membantu menggalakkan kesedaran dan memperbaiki intervensi dalam komuniti.

Kata kunci: Pencarian kesihatan, malaria, penjaga, kanak-kanak bawah lima tahun, Nigeria.
ACKNOWLEDGEMENTS

First and foremost I wish to express my thanks and gratitude to Almighty God who through his grace and sustaining power I was able to carry out this study. I want to directly express my profound gratitude to my husband Mr. Rowland Sampson for all his support both physical and financial support throughout this program. I give thanks to my mum Mrs. Theresa and my siblings for their encouragement and support throughout this program.

I am highly indebted to my main supervisor Dr. Rosliza Abdul Manaf, who supervised this research and aided me immensely with detailed encouragement, patience, corrections, constant attention and immense contributions. I feel highly indebted to my co-supervisor; Dr. Suriani Binti Ismail and Dr. Udeani, T.K who also made it possible for me to undergo this program. This work was facilitated by the untiring efforts of them, whose constructive criticism and generous guidance made this work what it is.

Special appreciation goes to the caregivers of under-five children who voluntarily participated in this study.

My sincere thanks to my friends and colleagues, Mrs. Chinemerem, Mrs. Monica, Ms. Inimfon, Mrs. Itse, Mrs. Irene and others who helped directly or indirectly in making this study a success. I will remain grateful.
I certify that a Thesis Examination Committee has met on (18th May 2018) to conduct the final examination of Emilia Oluchi Sampson on her thesis entitled “Factors Associated with Health Seeking Behavior for Malaria Treatment among Caregivers of Under-five Children with Fever in Imo State, Nigeria” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

Malaria is a vector-borne disease (Centers for Disease Control and Prevention, 2014). Malaria affects millions of people globally each year and the disease is a global health problem (World Health Organization, 2012). In 2015, there were an estimated 212 million cases of malaria globally (World Health Organization, 2016). Global burden of malaria remained heavily intense in 15 countries; Africa region has the highest burden, these countries account for an estimated 80% of the global malaria cases. African Region has the highest cases of malaria (88%), followed by the South-East Asia Region (10%) and 2% in the Eastern Mediterranean Region. In the year 2015, there were an estimated 438,000 malaria deaths globally; approximately 69% were children under five years of age (WHO, 2016). Malaria death among under-five children globally in the year 2000 has decreased from 723,000 to 306,000 in 2015. African Region has the heaviest malaria burden (World Health Organization, 2015). Malaria is avoidable and curable, increased efforts are dramatically reducing the malaria burden globally.

Malaria is caused by Plasmodium parasites. Malaria parasites include plasmodium falciparum, plasmodium malariae, plasmodium vivax and plasmodium ovale and they are human malaria species. Plasmodium Falciparum is the most common and dangerous malaria parasite. The parasites are transmitted to people through the bites of infected female Anopheles mosquitoes, called malaria vectors. The biting time is usually between dusk and dawn (WHO, 2012). Malaria is an acute febrile illness. In a non-immune individual, symptoms appear 7 days or more usually 10 to 15 days, after the infective mosquito bite (Hawker, Begg, Blair, Reintjes & Weinberg, 2005). Signs and symptoms of malaria include fever headache, back pain, chills, sweating, myalgia, nausea, vomiting and diarrhea (White & Breman, 2013). When these symptoms occur, If not treated within 24 hours, plasmodium falciparum malaria could progress to severe illness, which usually leads to death. Children with severe malaria often develop one or more of the following symptoms: severe anemia, respiratory distress in relation to metabolic acidosis, or cerebral malaria (WHO, 2016). Children with cerebral malaria is associated with convulsion, and repeated in up to 50% of children with cerebral malaria. Seizures are also common among children and may manifest as tonic-clonic eye movements. While in adult it is rare, it occurs in less than 3% of adults. Children suffering from cerebral malaria especially those with hypoglycemia, repeated seizures and deep coma develops residual neurological deficit when they have regain their consciousness. Congenital malaria happens in less than 5% of newborns of infected mother (WHO, 2012). In adults, multi-organ involvement is also common (White & Breman, 2013).
Malaria complications are mostly among young children under five years and pregnant women (White & Breman, 2013). People with low immune system are also at risk of getting malaria (WHO, 2012). In area with unstable transmission of malaria, pregnant women are prone to severe infections and they are the vulnerable groups to high level of anemia, hypoglycemia and acute pulmonary edema. Malaria in pregnancy may cause fetal distress, premature labor, still birth or low birth weight (110g). Fetal death occurs in severe malaria in pregnant women. Maternal death from hemorrhage at childbirth is correlated with malaria induced anemia (White & Breman, 2013).

In Nigeria malaria is of national concern and constitutes a major public health problem despite the curable nature of the disease. Nigeria bears up to 25% of the malarial disease burden in Africa, hence contributing significantly to the one million lives lost per year in the region, which mostly consists of children and pregnant women. Malaria is the leading cause of mortality in children under the age of five, and is responsible for an estimated 300,000 total deaths annually (National Population Commission NPC, National Malaria Control Programme NMCP & ICF International, 2012).

Important investments in malaria control have been made in Nigeria. Nigeria has set a target to achieve pre elimination status of malaria and reduce malaria related mortality to zero by 2020 (National Malaria Strategic Plan 2014 - 2020). Despite these efforts to prevent malaria, malaria parasite prevalence is still high in Nigeria (National Malaria Elimination Programme NMEP & Federal Ministry of Health FMOH, 2014-2017). However this is because in Nigeria most people practice different health seeking behavior in treating malaria. Most people in Nigeria uses self-medication in treating malaria, use of local herbs, use of spiritualists/traditional priests services or the use of clinics or hospital services (Jimoh, Sofola, Petu & Okorosobo, 2007).

Appropriate treatment of malaria within 24 hours of onset of fever could help reduce malaria illness (WHO, 2012). Malaria is treated usually at health facilities, at community level diagnosis and treatment could be effective when access to facilities is limited. In community-level, effectiveness of malaria control events is influenced by recognizing the symptoms early and ensuing appropriate treatment seeking behavior (Das & Ravindran, 2010). Health seeking behavior (HSB) practice among caregivers of children under the age of five with malaria in Nigeria is poor. Study revealed that caregivers do not seek appropriate treatment within 24 hours when they notice that the child has malaria; they tend to observe the child for some days to be sure if the child has malaria or not. However the delay in seeking treatment for some caregivers is because of cultural belief, while for some caregivers is because they cannot make decision in the child’s treatment, they have to wait for the father to come back before they will sought treatment for the child. Moreover most of the caregivers preferred to take their children to prayer houses (Chukwuocha, Okpanma, Nwakwuo & Dozie, 2014). In another study conducted in Nigeria, result shows that HSB of caregivers for their under five children during fever was inappropriate. In the study, 78.3% of caregivers gave drugs to their under five children as initial treatment when they notice that the child has fever, highest proportion of caregivers purchased drugs
from a patent medicine vendor. However only 1.8% of mothers took their children to hospital on noticing fever (Lovelyn, Betrand & Godswill, 2016). A study among two states in Nigeria, result shows that caregivers usually seek treatment for their under-five children with fever from pharmacies or drug shops, 49% in Cross River and 31% in Bauchi (Odu et al., 2015). Treatment seeking behavior and preventive practices towards malaria illness is among the reasons of high malaria in Nigeria. It is essential to understand the culture and traditions of malaria endemic communities in Nigeria; these form the basis of community members’ values that shape the attitudes of the community members on malaria control and elimination topics. Frequently these local beliefs influence community members’ action on fight against malaria more than any other factor (Aribodor, Ugwuanyi & Aribodor, 2016).

1.2 Problem Statement

According to the World Malaria Report 2015, 214 million of new malaria cases reported globally ranging between 149–303 million with an estimated death of 660 000 globally. Africa is the most affected continent with about 90% of all malaria deaths occur in Africa (WHO, 2012). This is followed by the South-East Asia Region (7%) and the Eastern Mediterranean Region (2%) (WHO, 2015). Malaria death among under-fives children globally was estimated at 306 000, of which, 292 000 of affected children were from the African Region (WHO, 2015).

Malaria is endemic in Nigeria with yearly transmission; it is estimated that 160 million (97%) of the Nigeria population is at risk of malaria (NMSP, 2014–2020). Despite the curable nature of malaria, it still constitutes a major public health problem in Nigeria. This is as a result of the geographic location of Nigeria which makes the climate suitable for malaria transmission throughout the country. Almost everyone in the country is at risk of malaria transmission, except for the minority 3% who are located at an altitude of 1,200 to 1,400 meters, where the transmission risk is relatively low. This is due to the intensity and seasonality of transmission and mosquito vector species (NPC, NMCP, & ICF International, 2012).

The National Malaria Strategic Plan (NMSP) 2014-2020 data revealed that the prevalence of malaria parasite is still high in Nigeria, with an average of 42% parasite prevalence among children under five years (NMSP, 2014 – 2020). In terms of burden to the healthcare system, malaria reportedly accounts for an estimated of 60% of outpatient visits in Nigeria and 30% of hospitalizations. In Nigeria, malaria is responsible for 11% of maternal mortalities (NPC, NMCP & ICF International, 2012). Malaria is the cause of death in children under-five, and is accountable for an estimated 300,000 total deaths annually. 25% of infant death and 20% of under-five death (Malaria Operational Plan, MOP, 2015).

The WHO pointed out that uncomplicated malaria can progress to severe malaria rapidly, among people with no immunity or low immunity. Severe falciparum malaria
is always fatal without treatment. In order to achieve prompt and appropriate treatment, programmes should ensure prompt and early diagnosis to allow effective treatment within 24 to 48 hours of the onset of malaria symptoms to prevent complications associated with malaria (WHO, 2015).

In Nigeria malaria also utilizes a massive economic and social burden on families, communities, and the country, causing yearly loss of about 132 billion Naira for treatment and prevention as well as hours of absent from work (Jimoh et al., 2007).

Caregivers mind set should be changed towards HSB of their under five children. Study have shown the prevalence of inappropriate HSB, inappropriate HSB among caregivers of under-five children in Nigeria is still high, whereby 51.1% of caregivers were not likely to seek treatment for their children within 24 hours of onset of malaria symptoms. Among the 51.1% of caregivers, 21.4 % of the caregivers delayed more than 24 hours before they sought treatment because of financial problems, 14.4 % delayed treatment because of negative belief and culture influences, 7 % of the caregivers waited for the child’s father to return home, while 5.7 % of the caregivers delayed more than 24 hours because of distance to health facility (Chukwuocha et al., 2014).

Another study conducted in Nigeria using nationwide data among caregivers of under-five children with fever, result showed that HSB for fever among caregivers of under-five children was poor throughout Nigeria, where only 31% of caregivers sought care from health facilities (Abdulkadir & Abdulkadir, 2016). This is far below the set targets of the national malaria program of 80% by 2013 (NMCP 2009-2013). The researchers pointed out that to improve HSB; there is a need to improve literacy by providing targeted education to special groups including the uneducated people, and also to empower mothers to make decisions concerning health care (Abdulkadir & Abdulkadir, 2016).

HSB studies among caregivers of children under the age of five years have been conducted in various states in Nigeria and other parts of the world. These involved several locations including Bauchi and Cross river (Odu et al., 2015), national cross-sectional survey (Abdulkadir & Abdulkadir, 2016), study was conducted in Northern Nigeria (Millar et al., 2014), another study was conducted in North- Central Nigeria Abdulkadid et al., 2015). Whereas Chukwuocha, et al. (2014) conducted a study in South-Eastern part of Nigeria, in Imo State, a study conducted in Anambra State South-Eastern Nigeria by (Lovelyn, et al. 2016), Orimadegun & Ilesanmi (2015) conducted a study in Ise-Orun, Ekiti State Nigeria.. HSB studies among caregivers of children under the age of five years conducted in other parts of the world were malaria cases are high includes, Najnin, Bennett & Luby, (2011) conducted a study in Bangladesh which 59% of the study population sought care from the trained healthcare providers. A study conducted in Ethiopia by Hwang et al. (2010) only 36.5% sought any kind of treatment from public and private health facilities or hospitals, health extension workers, pharmacies, shops, and traditional healers. Study conducted in
Myanmar by Thandar, Kyaw, Jimba & Yasuoka (2015), the most frequented place of treatment for caregivers was the midwife in primary health service provider (31.9%). However studies in Nigeria the most frequent place of treatment for the caregivers was drug shops. There has not been a study to determine the factors associated with HSB among caregivers of under-five children with malaria in Imo state Nigeria, hence this study is planned to be conducted in Imo state Nigeria. There is a need for a study in this area to obtain accurate and reliable baseline data to provide guidelines on HSB among caregivers of under-five children with malaria in the region in order to reduce inappropriate HSB in the region especially among the caregivers of children under the age of five year.

1.3 Significance of study

This study will serve as additional information on the HSB of caregiver’s of children under-five years specifically to the Imo state population. Findings from this study would improve HSB; prevent delay in seeking treatment of malaria and the consequences. It is vital that children under the age of five years, pregnant women and others have access to prompt treatment within 24 hours of the onset of symptoms, to prevent the progression of malaria illness, which could be rapid and progress to severe malaria and death. The findings and recommendations of the study would contribute to the body of knowledge in research. It will help the Imo state administration to plan and implement effective programs to help patients seek appropriate treatment in the region. Moreover, this study will make an animated contribution to research in this field and will result in considerable advantages for both the patients themselves and the community as a whole.

1.4 Research questions

i. What are the Health Seeking Behavior practices for malaria treatment among caregivers of children under five years with fever in Imo State Nigeria?

ii. What are the socio-demographic characteristics of caregivers (age, educational level, occupation, household income, marital status, ethnicity, number of household members, and place of residence), characteristics of the child (age and sex of the child), knowledge of malaria (symptoms of malaria, vulnerable groups of malaria, causes of malaria, knowledge on preventive measures and diagnosis of malaria), preventive measures, access to health facility (distance and transport) and decision making among caregivers of children under five years with fever in Imo State Nigeria?

iii. Is there an association between socio-demographic factors of caregivers, characteristic of child, knowledge of malaria, preventive measures of malaria, access to health facility distance and transport and decision making among caregivers of children under five years who had fever during the two weeks prior to the study and appropriate HSB in Imo State Nigeria?
1.5 **Objectives**

1.5.1 **General objective**

The general objective of this study is to determine the HSB practices for malaria treatment and its associated factors among caregivers of children under-five years in Imo State Nigeria.

1.5.2 **Specific objectives**

i. To describe the HSB practices among caregivers of children under-five years who had fever two weeks prior to the study in Imo State Nigeria.

ii. To determine the socio-demographic factors of caregivers (age, educational level, occupation, household income, marital status, ethnicity, number of household members, and place of residence), characteristics of child (age and sex of the child), knowledge of malaria (symptoms of malaria, vulnerable groups of malaria, causes of malaria, knowledge on preventive measures and diagnosis of malaria), preventive measures, access to health facility (distance and transport) and decision making among caregivers of children under five years with fever in Imo State Nigeria.

iii. To determine the association between health seeking behavior and:
   a. Socio-demographic of caregiver
   b. Child characteristics
   c. Knowledge on malaria
   d. Preventive practices
   e. Access to health facility (distance and transport)
   f. Decision making

iv. To determine the predictors of HSB among caregivers of children under-five years who had fever two weeks prior to the study in Imo South Nigeria.

1.6 **Research hypotheses**

There is significant relationship between health seeking behavior and:

a. Socio-demographic of caregiver
b. Child characteristics
c. Knowledge on malaria
d. Preventive practices
e. Access to health facility
f. Decision making
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