REGISTERED NURSES’ EXPERIENCES OF
MALARIA PREVENTION IN THE REPUBLIC OF THE CONGO

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ABSTRACT

Background
In the Republic of the Congo, malaria is a major cause of death, in particular among children. Therefore, malaria prevention is of high priority. Registered nurses have an important role in illness prevention in sub-Saharan Africa, especially through education of the population. To improve malaria prevention, it is important to understand how registered nurses experience the preventive work.

Objective
The objective of this study was to examine the experiences of registered nurses working with malaria prevention in the Republic of the Congo.

Method
A qualitative method was used. Semi-structured interviews with six registered nurses in the Republic of the Congo were conducted. Qualitative content analysis was used to analyse the interviews.

Findings
Three categories were identified in the analysis: preventive interventions are necessary, possibilities in malaria prevention and difficulties in malaria prevention. The registered nurses experienced that preventive interventions, such as different methods of avoiding mosquito bites, are necessary because malaria affects the entire population in Congo. The registered nurses experienced educating and informing the patients as a possibility in malaria prevention and a lack of resources as a difficulty.

Conclusion
The registered nurses experienced education and information as an effective way to communicate preventive interventions against malaria. However, the registered nurses sometimes experienced incomprehension among the patients, which could be improved by adapting the information to the individual. A difficulty that the registered nurses experienced was a lack of resources on many levels. An increased access to resources would lead to improvements in malaria prevention.

Keywords: Education, Malaria prevention, Nurse’s experiences. Republic of the Congo
# TABLE OF CONTENTS

## BACKGROUND
- The Concept of Health 1
- Malaria 2
- The Health System in Congo 3
- Malaria Prevention 4
- Problem Statement 6

## OBJECTIVE 7

## METHOD
- Design 7
- Sample Selection 7
- Data Collection 8
- Data Analysis 9
- Ethical Considerations 10

## FINDINGS
- Preventive Interventions are Necessary 12
- Possibilities in Malaria Prevention 14
- Difficulties in Malaria Prevention 16

## DISCUSSION
- Discussion of Findings 18
- Discussion of Method 19
- Conclusion 21

## ACKNOWLEDGEMENTS 22

## REFERENCES 23

## APPENDIX A–C
BACKGROUND

Malaria causes approximately 1.3 percent of all deaths in the world, which makes malaria one of the largest causes of death globally (Institute for Health Metrics and Evaluation, 2017). More than 90 percent of all malaria-related deaths occur in sub-Saharan Africa and children and pregnant women are the most affected (World Health Organization, 2016). And yet, malaria is a disease that is preventable and curable by relatively simple means (Storm, 2008). The key to prevent malaria is to increase the knowledge among those at risk of getting the disease. Registered nurses (RNs) play an important role in the education of patients and their families (Corley, Thornton & Glass, 2016). In this study, the focus is to gain insight into how RNs work to prevent malaria in the Republic of the Congo (hereinafter referred to as Congo). Firstly, there will be an explanation of some of the key concepts used in the essay. Then, malaria will be shortly explained and why the disease is an issue, followed by some information about the health system in Congo. Further on, there will be an overview of research about malaria prevention.

The Concept of Health

There is no worldwide agreement on the definition of health. The concept has developed over time and today there are two dominating perspectives on health: the biomedical perspective and the humanistic perspective. Willman (2014) describes that health, in the biomedical perspective, is regarded as the absence of disease. The human’s body and mind are two separated elements and the body is regarded as a machine that can be mended. In the humanistic perspective, a holistic view of the human is used. The human’s body, mind and spirit are one and health is considered to be the human’s own experience of health and meaningfulness. The biomedical and the humanistic perspectives complement each other, and they are both important in the comprehension of the concept of health (Willman, 2014). The World Health Organization (WHO) also emphasizes that health is more than the biomedical point of view. WHO defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, n.d.).

Health as a state of physical, mental and social well-being is closely related to quality of life. Plummer and Molzahn (2009) have implemented a concept analysis of quality of life in contemporary nursing theory literature. In their article, they define the concept of quality of life as “an intangible, subjective perception of one’s lived experience” (Plummer & Molzahn, 2009, p. 140). Their conclusion is that quality of life, as a wider concept of human conditions, could replace health as a key concept in the discipline of nursing. Quality of life is in itself the goal of nursing (Plummer & Molzahn, 2009). Plummer’s and Molzahn’s (2009) point of view contributes to the understanding of the concept of health from a nursing perspective.

Health Promotion and Illness Prevention

Even though health promotion and illness prevention are closely related, the concepts have different meanings. The aim of health promotion is to promote a healthier lifestyle and as a consequence, reduce the risk of illness (Lundberg, Jong, Kristiansen & Jong, 2017). The concept of health, regarded as a person’s own experience of health and ability to develop himself, is the foundation of health promotion. Health promotion focuses on strengthening a person’s abilities and resources (Willman, 2014). In contrast, the potential diseases and injuries are in focus in illness prevention and preventive interventions are aimed at
preventing the emergence of specific diseases or injuries. Primary prevention, the first level of illness prevention, is the measures taken before a disease has occurred (Hedelin, Jormfeldt & Svedberg, 2014). Secondary prevention is aimed at discovering early signs of a disease and preventing the disease to develop further and tertiary prevention is aimed at preventing relapses of a disease (Isacsson, n.d.). According to the International Council of Nurses (ICN), there are four fundamental responsibilities for RNs: “to promote health, to prevent illness, to restore health and to alleviate suffering” (ICN, 2012, p. 1). Hence, health promotion and illness prevention are areas of great importance in nursing practice. This is a point of view supported also by Jadelhack (2012), who emphasizes not only the importance of health promotion in nursing practice but also the cost-effectiveness of changing the focus from cure to promotion. The RN’s four fundamental responsibilities are closely connected to the RN’s professional responsibility (ICN, 2012).

The Registered Nurse’s Professional Responsibility

ICN (2012) has described the RN’s professional responsibility as first and foremost the responsibility to attend to people in need of nursing care. Additionally, the RN is responsible for providing the patients and their families with accurate, appropriate and sufficient information (ICN, 2012). Two research studies about receiving information from the perspective of patients’ relatives show that it is crucial for healthcare professionals not only to give relevant information but also to consider when the information should be given (Douglas, Redley & Ottmann, 2017; Higgins, Joyce, Parker, Fitzgerald & McMillan, 2007). Douglas et al. (2017) found that parents to children with intellectual disabilities experience that sometimes they lack information and sometimes they are overwhelmed by too much information. All relatives in the studies of Douglas et al. (2017) and Higgins et al. (2007) pointed out that they wish healthcare professionals to give the right information at the right time. Accordingly, it is the RN’s responsibility to determine how much information that should be given and when it should be given (Douglas et al., 2017; Higgins et al., 2007).

In addition to the RN’s responsibilities to provide nursing care and information, the RN is, together with the society, responsible for promoting efforts that meet the health and social needs of the people, in particular, the needs of vulnerable population groups (ICN, 2012). Health promotion and illness prevention are essential parts of these efforts and thus, significant areas in the RN’s professional responsibility. Rodrigo, Cais and Monforte-Royo (2017) have conducted a research study to examine the nurse’s professional role in Spain. The findings show that the RNs find it difficult to obtain professional autonomy, which is explained as a professional’s actions according to principles and rules that are specific to that profession. However, the study also shows that the RNs regard their efforts of establishing a relationship with the patient as essential in their nurse’s role (Rodrigo et al., 2017). In conclusion, the RN’s professional responsibilities to attend to people in need of nursing care and to provide them with accurate information are crucial parts of the nurse-patient relationship.

Malaria

Malaria is an infectious disease caused by malaria parasites that are transferred to humans by female Anopheles mosquitoes. There are five different types of parasites that cause malaria in humans. Plasmodium falciparum is the most common parasite in sub-Saharan Africa and it is also the one that causes most malaria-related deaths. The first symptoms
that usually occur when infected with malaria are fever, chills and headache. These symptoms appear 10-15 days after being bitten by the infected mosquito and they may be difficult to recognize as malaria (WHO, 2016). Other symptoms that also may occur are diarrhoea, vomiting and jaundice (Augustincic Polec et al., 2015). People that live in areas where malaria is common may develop a kind of immunity, which means that they can still get infected with malaria, but they may not be affected by the disease and may not have any symptoms at all (WHO, 2016).

Diagnosis and Treatment

To decrease the malaria infection and prevent death, early diagnosis and treatment are of great importance. Early diagnosis and treatment also contribute to a decrease in malaria transmission (WHO, 2016). There are two main diagnostic tests to confirm malaria; rapid diagnostic test (RDT) or microscopy examination. RDTs discover specific antigens that are produced by malaria parasites and that are present in the blood of infected persons. In the microscopy examination, a blood sample is visually examined to find malaria parasites. The most common microscopy examination is called the thick blood smear test.

Artemisinin-based combination therapy (ACT) is the best available treatment of simple cases of malaria, especially for the Plasmodium falciparum parasite (WHO, 2016).

Affected Population Groups

Approximately 40 percent of the world’s population is at risk of malaria. The most affected population group in all countries with a transmission of malaria is children under five years of age. Young children have not yet developed any kind of immunity and therefore, they are at higher risk of getting ill and die (Augustincic Polec et al., 2015; WHO, 2016). Another population group on which malaria has a great impact is pregnant women. Malaria increases the risk of miscarriages, severe anaemia and maternal deaths. Another possible consequence of malaria in pregnant women is that the new-born child may have a low birth weight, which increases the risk of infant illness and death (Desai et al., 2007). According to WHO (2016), there were approximately 429,000 people that died globally because of malaria in 2015; 70 percent of them were children. In general, this means that every two minutes a child dies because of malaria (WHO, 2016).

Sustainable Development Goals

The Sustainable Development Goals (SDGs) are 17 goals that were agreed on by 193 world leaders with the United Nations in the lead in 2015. Each of the 17 goals has specific targets with the overall aim of ending poverty, inequality and climate change by 2030. The third goal of the SDGs is to “ensure healthy lives and promote well-being for all at all ages” (Project Everyone and the Global Goals Campaign, 2015). Targets in this goal include reducing the incidence of malaria, AIDS, tuberculosis and other communicable diseases. Thus, the reduction of malaria is a goal of high priority on the political world agenda (Project Everyone and the Global Goals Campaign, 2015).

The Health System in Congo

Congo is a former French colony situated in Central Africa and one of the official languages is French. The country has a population of almost five million people and approximately 47 percent of the population lives below the poverty line (Central
Intelligence Agency, 2017). The health system in Congo is still under recovery and reconstruction after the civil wars in 1993, 1997-1999 and 2002. The hospitals and health clinics are in varying conditions; many are substandard, especially in the countryside. Also, health workers decrease in number as the present health workforce is ageing and too few new health workers are trained and employed. Per 10,000 population, Congo has approximately 0.3 physicians and 1.9 nurses and midwives, compared to approximately 38 physicians and 119 nurses and midwives in Sweden. Another issue is that the health workers are mainly located in Brazzaville, the capital of Congo, which leaves the countryside with an insufficient number of qualified healthcare professionals. As an example, 66 percent of the physicians in the country work in Brazzaville where 37 percent of the population lives (WHO Global Health Workforce Alliance, 2017).

Another problem in Congo is that the country is currently in a financial crisis and struggles to pay salaries to employees of the state, including health workers in public hospitals. Here follows an example of the situation to illustrate the crisis; the first of August 2017, the health workers in the largest public hospital in Congo went on strike because of months of unpaid salaries (Congo: Grève dans le plus grand hôpital du pays sur fond de dette publique, 2017, 3 August). In November 2017, at the time this study was conducted in Brazzaville, the health workers in the hospital were still on strike. This meant that they had been on strike for more than three months, which made the already barely accessible healthcare even more inaccessible.

The Malaria Situation in Congo

Of all malaria-related deaths in the world, 92 percent occur in sub-Saharan Africa (WHO, 2016). In Congo, malaria is the cause of approximately seven percent of all deaths in the country. This makes malaria one of the major causes of death, together with AIDS, ischemic heart disease and diarrheal diseases. Among children under five years of age, malaria is the primary cause of death; 18 percent of all deaths are caused by malaria (Institute for Health Metrics and Evaluation, 2017). The Ministry of Health and Population in Congo has together with WHO developed a national strategic plan in the fight against malaria, containing recommendations on how to prevent, diagnose and treat the disease. Congolese National Centre of Statistics and Economic Studies conducted a survey in 2012, which showed that only 43 percent of the households in Congo owned a mosquito net as a protection against mosquito bites and that 81 percent of all children were sleeping under a mosquito net (Centre National de la Statistique et des Études Économiques, 2012). In 2006 Congo introduced ACT as the first-hand treatment of simple cases of malaria, due to an increasing resistance in malaria parasites to the earlier first-hand treatment Chloroquine. In a research study by Koukouikila-Koussounda et al. (2017), it is shown that the introduction of ACT has resulted in a lower prevalence of Chloroquine-resistant parasites in Congo, allowing for a more effective use of Chloroquine in more complicated cases of malaria (Koukouikila-Koussounda et al., 2017). Thus, even though Congo is heading in the right direction in some areas, the country is still facing many challenges in the fight against malaria.

Malaria Prevention

Malaria is a preventable disease and prevention is preferable to cure. There is no “commercially available malaria vaccine at the present time” according to WHO (2016), hence, other means of prevention to reduce malaria infections have to be used. Insecticide-
treated mosquito nets (ITNs) and indoor residual spraying are two effective ways of preventing malaria. ITNs are used over beds while sleeping to protect against mosquito bites and indoor residual spraying is the process of spraying insecticides inside dwelling houses to kill or repel the mosquitoes (Lengeler, 2004; Pluess, Tanser, Lengeler & Sharp, 2010). Augustincic Polec et al. (2015) have conducted a review of research studies to find factors that affect ownership and appropriate use of ITNs. To provide ITNs for free is effective to increase the ownership of ITNs. A few research studies in the review had a theory suggesting that people who buy ITNs will have a higher probability of using them appropriately, a theory that was falsified. People that receive ITNs for free have a just as high probability of using them appropriately (Augustincic Polec et al., 2015).

Another finding in the review by Augustincic Polec et al. (2015), is that education for promoting ITN use has a positive effect; with educational interventions, more people use ITNs. Shwetha and Alvares (2013) have also investigated the effect of malaria education. In their study, it is shown that knowledge about malaria prevention can be increased by relatively simple means. The authors evaluated the knowledge of high school students on malaria and malaria prevention before using a planned teaching programme about malaria and after the teaching programme was used. The knowledge was increased significantly after the teaching programme. Also, the study shows that the knowledge was not dependent on the background of the students, such as religion, education of father or education of mother, which means that all students, regardless of socio-economic background, could benefit from education about malaria prevention (Shwetha & Alvares, 2013). In another study, Nishimwe and Kerr (2012) assessed the effect of malaria education that was provided to pregnant women in Rwanda. The findings of the study show that a majority of the pregnant women implement preventive interventions against malaria, including sleeping under a mosquito net. The authors concluded that education improves the pregnant women’s knowledge about malaria and supports them to choose effective methods to prevent malaria (Nishimwe & Kerr, 2012).

The Registered Nurse’s Role in Prevention

As already mentioned, educating and informing patients and their families are a part of the RN’s responsibility (ICN, 2012). In a research review by Corley et al. (2016), the impact of nurses and community health workers on neglected tropical diseases in sub-Saharan Africa was investigated. The conclusion of the review is that to achieve successful disease prevention and control, a meaningful and profound engagement with communities on a local level is needed. Also, the role of nurses and community health workers has to be extended, so that more people are reached, and a change is possible (Corley et al., 2016). Teryila, Haruna, Kabiru and Hamina (2014) have been exploring the nurse’s role in malaria prevention. In their study, a questionnaire was given to 300 pregnant women in a hospital in Nigeria to assess their knowledge and practice of malaria prevention. The findings show that a majority of the pregnant women have a good knowledge of preventive interventions against malaria, but only a few of the women actually practise these preventive interventions. The authors’ conclusion is that nurses working with pregnant women in this area should put more emphasis on health education with a positive attitude towards preventive interventions against malaria (Teryila et al., 2014). Storm (2008) discussed in her article the impact of malaria on pregnant women and children and how traditional midwives could be a resource in the education of unreached population groups. Storm (2008) argues that traditional midwives in rural areas already play a major role as educators and with the right support and encouragement, they could save lives in their
communities through the education of mothers, children and families (Storm, 2008). Hence, nurses and midwives have an important role to play in malaria prevention and the reduction of malaria, especially in sub-Saharan African countries with small resources (Corley et al., 2016; Storm, 2008; Teryila et al., 2014).

Problem Statement

Malaria is a main health issue in the world and a reduction of the disease is a high priority goal on the political world agenda (Project Everyone and the Global Goals Campaign, 2015). This is especially important given the fact that those most affected are already vulnerable groups, including children under five years of age and pregnant women (WHO, 2016). In Congo, malaria is a major cause of death, in particular among children (Institute for Health Metrics and Evaluation, 2017). Malaria prevention is preferable to cure and RNs play an important role in health promotion and illness prevention (Jadelhack, 2012). According to Lengeler (2004) and Pluess et al. (2010), ITNs and indoor residual spraying are two effective methods of preventing malaria. To educate the population is essential to increase the use of these preventive methods (Augustincic Polec et al., 2015; Nishimwe & Kerr, 2012; Shwetha & Alvares, 2013). Corley et al. (2016), Storm (2008) and Teryila et al. (2014) pointed out that nurses and midwives are particularly significant in preventive work in sub-Saharan African countries with small resources. Even though Congo’s health resources are small (WHO Global Health Workforce Alliance, 2017), RNs in the country have the potential to prevent malaria through preventive work. Research to date has not yet examined RNs’ experiences of malaria prevention in Congo, which makes it an important area to explore.
OBJECTIVE

The objective of this study was to examine the experiences of registered nurses working with malaria prevention in the Republic of the Congo.

METHOD

Design

With the aim to respond to the objective of this study, a qualitative approach was used. Qualitative research is usually conducted within the constructivist paradigm. This paradigm is described by Polit and Beck (2012) as a worldview that regards reality to be subjective and constructed by individuals. In qualitative research, the aim is to understand the experiences of the participants and therefore, it is of great importance to listen to their voices and interpretations (Polit & Beck, 2012). Since the objective of this study was to examine the experiences of RNs, a qualitative method was well suited.

Information in the study was collected through semi-structured interviews with the participants. In semi-structured interviews, an interview guide with questions has been prepared in advance. The prepared interview guide is a support when conducting the interviews to make sure that the researcher receives all the information required for the study. At the same time, semi-structured interviews give the participants the opportunity to speak freely and detailed within the subject that is studied (Polit & Beck, 2012). Semi-structured interviews was the data collection method that best suited this study. The method was conducted to receive structured interviews and to obtain information relevant to the objective of the study.

Sample Selection

Sample Size

The sample size in qualitative research is based on the information needed, that is, enough in-depth data to show the patterns and the dimensions of the studied phenomenon. In a study aimed to understand the lived experiences of the participants, the sample is usually ten or fewer participants (Polit & Beck, 2012). In this study, six RNs in Congo were interviewed to receive data about their experiences of malaria prevention.

Sample Criteria

The nurses participating in this study were selected according to criteria that would correspond to the objective of the study. The aim was to receive a variety of experiences as wide as possible (Henricson & Billhult, 2017). Since professions in the healthcare may differ depending on the country, it was important that the participating nurses were registered according to the regulations in Congo so that there would be no uncertainty who was considered a nurse or not. To be able to respond to the objective of the study, a criterion for participation was to have worked with malaria prevention. Another was to have had at least two years of nursing experience; this to ensure that the participant had a broader and deeper experience to share. The last criterion was that the participant should
be able to communicate in French since this was the language that would be used in the
interview sessions.

Description of Participants

The participants in this study were Congolese RNs of both sexes; five women and one
man. They were between 29 and 49 years old and had been working as RNs between four
and twenty years. All six of them were working at three different health clinics. The three
health clinics were smaller private clinics and two of them were run by churches. They
were located in different parts of the city of Brazzaville, which is the capital of Congo and
the largest urban area in the country (Central Intelligence Agency, 2017).

Data Collection

To get in touch with participants according to the sample criteria, a convenience sampling
was used at first. A convenience sampling, sometimes referred to as a volunteer sampling,
is when participants identify themselves to volunteer in a study (Polit & Beck, 2012). The
chief of a health clinic in Brazzaville was contacted and was give


ted and oral
information about the study. The chief introduced me to the RNs working at the health
clinic and they were also given written and oral information and were then asked if they
wanted to participate. To find more RNs with experiences relev


tant to the study, snowball
sampling was used, which is to ask early participants to refer to other possible participants
(Polit & Beck, 2012). In this way, contact information to RNs working at two other health
clinics in other parts of Brazzaville was received. Signed permission to carry through the
study was obtained from the chiefs of all three health clinics before the interviews were
conducted (see Appendix A).

Interview Guide

According to Polit and Beck (2012), an interview guide is a guide with topics and
questions that are prepared before the interviews take place. The questions should be broad
and open so that the participants get encouraged to speak freely about the subject under
study. Also, the words used in the questions should be well-known to the participants (Polit
& Beck, 2012). An interview guide with open questions arranged into four different topics
was prepared for this study (see Appendix B). The topics and the questions were prepared
with the aim to cover different aspects of the objective of the study. Firstly, the interview
guide was written in English and then, translated into French. To make sure that the French
words used in the questions were well-known, two French-speaking persons were asked to
evaluate the translation and according to their points of view, some linguistic adjustments
were made.

Pilot Interview

A pilot interview was conducted to verify that the questions in the interview guide would
encourage the participant to share experiences that would respond to the objective of the
study (Polit & Beck, 2012). An RN at one of the health clinics was asked to participate and
the interview took place at the health clinic. The interview was audio-recorded and notes
about eventual adjustments to the interview guide were taken. The pilot interview was
transcribed and analysed and then an adjustment was made to the interview guide; to
clarify one of the topics, two of the questions were changed. No other adjustments were
made after the pilot interview. A total of six interviews were included in the study’s findings and the pilot interview was one of the six since the data obtained from the interview was relevant to the objective of the study.

Interview Sessions

All of the interviews were conducted in the city of Brazzaville in the RNs’ workplace during working hours. The interviews took place in a secluded part of the health clinics to ensure not being disturbed (Polit & Beck, 2012). To create a relaxing atmosphere, the interview sessions were initiated by small talk, followed by oral and written information about the study. During the interviews, the interview guide was used, and follow-up questions were asked when necessary. The interviews were audio-recorded and additional notes were taken while interviewing. The interviews lasted between 15 and 35 minutes.

Transcription of Data

According to Polit and Beck (2012), the transcription of audio-recorded material is a critical step in the data processing and it is of great importance that the transcriptions are precise and accurate. The audio-recorded interviews were transcribed word by word and immediately translated from French into English. Pauses and incomplete sentences, that are common in oral speech, were marked with three dots. As a final step, the audio-recordings were listened to once again while reading the transcriptions to ensure their accuracy (Polit & Beck, 2012).

Data Analysis

The analysis of the data started immediately after the first interview since it is not necessary to wait for all data to be collected in qualitative studies (Polit & Beck, 2012). The method used to analyse the data was qualitative content analysis with an inductive approach, which means to observe the collected data as unbiased as possible and without the aid of a predetermined theory. Qualitative content analysis intends to describe variations in the interviews by identifying similarities and differences. In the transcribed interviews there is a manifest content, which is the obvious content in the text. The content is described and divided into subcategories and categories (Lundman & Hällgren Graneheim, 2012). Qualitative content analysis was a well-suited analysis method for this study since the objective was to examine experiences of malaria prevention found in the interviews of RNs.

Firstly, the transcribed interviews were read through several times and the main content was underlined. Then, meaning units were identified and highlighted. A meaning unit is a paragraph or a sentence in the transcribed interview that contains a message that the participant wants to convey (Lundman & Hällgren Graneheim, 2012). The meaning units were coded and after the analysis of a few interviews, the codes could be divided into subcategories. More codes and subcategories were added when necessary during the work of analysis. When all the interviews had been analysed, seven subcategories had been identified. The subcategories were divided into three categories, which were considered to represent the content on a higher level. Examples of meaning units, codes and subcategories divided into the three categories are shown in Table 1.
Table 1. Examples of Meaning Units, Codes, Subcategories and Categories

<table>
<thead>
<tr>
<th>Meaning Unit</th>
<th>Code</th>
<th>Subcategory</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We ask [the mother] to always put the children under a mosquito net when they are going to sleep, if it’s during the day, if it’s during the night, you always have to protect the children.”</td>
<td>Sleep under an impregnated mosquito net</td>
<td>To avoid mosquito bites</td>
<td>Preventive interventions are necessary</td>
</tr>
<tr>
<td>“We always have to continue to educate the population and inform the population and above all, explain the consequences of malaria so that the people will not ignore the treatments.”</td>
<td>Information and advice</td>
<td>The importance of education and information</td>
<td>Possibilities in malaria prevention</td>
</tr>
<tr>
<td>“There are also products that are missing to carry through preventive work. Sometimes, there is a deficiency of products.”</td>
<td>Deficiency of products</td>
<td>Lack of resources</td>
<td>Difficulties in malaria prevention</td>
</tr>
</tbody>
</table>

Ethical Considerations

It is of great importance to make ethical considerations in research studies, especially when humans are involved. According to the Swedish Research Council (2011), ethical considerations are about finding a balance between different legitimate interests, such as discovering new knowledge on the one hand and protecting individuals from harm and respecting their integrity on the other hand. The researcher should give clear information to the participants in a study to respect their integrity and their dignity (Swedish Research Council, 2011). In this study, all participants, as well as the chiefs of the health clinics, received oral and written information about the study’s purpose and method (see Appendices A and C). Before the interviews, the participants were informed that participation was voluntary and that they could withdraw from the study at any time without further explanation.

In the Declaration of Helsinki, the World Medical Association (2013) underlines the importance of obtaining informed consent from all participants. Informed consent means that an individual agrees to participate in a study after being well informed of the possible consequences (World Medical Association, 2013). The participants in this study gave their written informed consent (see Appendix C) before the interviews took place. The interviews were treated confidentially, and the audio-recordings were deleted after transcription and analysis. If the participant did not want to be audio-recorded, he or she was offered to be interviewed while more detailed notes would be taken. The transcribed interviews were stored on a password-protected computer. No names or other personal details of the participants were included in the final essay in order to maintain the confidentiality and the anonymity (Swedish Research Council, 2011). Also, the
psychosocial well-being of the participants was of high priority and their will was always respected.

My intentions in this study have been to openly report the study’s basic premises, methods and findings. Efforts have been made to be open and honest and to not distort the findings (Swedish Research Council, 2011). If there were any uncertainties in the translation of the interviews from French into English that might affect the findings, a dictionary was always used. In rare cases, if there were a word or a phrase that could not be translated even with the help of a dictionary, a French-speaking person was asked for assistance.
FINDINGS

Three categories and seven subcategories were identified in the analysis of the interviews. The categories and the subcategories are presented in Table 2.

Table 2. Categories and Subcategories

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive interventions are necessary</td>
<td>Population groups at risk</td>
</tr>
<tr>
<td></td>
<td>To avoid mosquito bites</td>
</tr>
<tr>
<td></td>
<td>Diagnosis and treatment</td>
</tr>
<tr>
<td>Possibilities in malaria prevention</td>
<td>The importance of education and information</td>
</tr>
<tr>
<td></td>
<td>To organise and collaborate</td>
</tr>
<tr>
<td>Difficulties in malaria prevention</td>
<td>Lack of resources</td>
</tr>
<tr>
<td></td>
<td>To not be understood</td>
</tr>
</tbody>
</table>

Preventive Interventions are Necessary

Population Groups at Risk

The RNs emphasized the necessity of preventive interventions since it is more effective to prevent malaria than to cure the disease. The RNs also explained that preventive interventions are for all because malaria concerns the entire population. It is a public disease that is present everywhere in the city of Brazzaville as well as in the whole country.

“To not have had malaria, that is a rare case. That is very rare. […] Because we are really in an endemic zone.”

The RNs experienced that those who are most exposed to malaria are already vulnerable groups in the society. All six of the RNs brought up children as the most exposed group to malaria and five of the RNs also pointed out pregnant women. A few of the RNs described that new-born babies also are at risk since it is possible for a pregnant woman to transmit malaria to the baby before birth. Furthermore, one RN mentioned poor individuals as a group at higher risk of getting infected with malaria.

“And then the poor children, from poor families… Not only the children but individuals of all ages, from the very poor social class. […] Those are also the people that usually are exposed to the malaria infection.”

To Avoid Mosquito Bites

The six RNs had experiences of informing the patients about various preventive interventions to avoid mosquito bites, which was the main method to prevent malaria. The most common preventive intervention that all six RNs brought up was to sleep under an insecticide-treated mosquito net (ITN). According to five of the RNs, it was also the most
effective preventive intervention to avoid mosquito bites. The RNs emphasized that it should always be used while sleeping by individuals of all ages.

“We ask [the mother] to always put the children under a mosquito net when they are going to sleep, if it’s during the day, if it’s during the night, you always have to protect the children.”

Another important preventive intervention that all the RNs referred to was to clean up the surrounding environment around the house. This included two essential interventions: to remove herbs and stagnant water close to the house since herbs and stagnant water were described as attractions to the mosquitoes.

“If there are herbs you have to get rid of them, if there are water ponds you have to cover them. Because it’s in the water ponds that [the mosquitoes] multiply.”

In contrast to the five other RNs, one RN considered a clean surrounding environment around the house to be a more effective intervention to avoid mosquito bites than to sleep under an ITN.

“You have to keep the surrounding environment clean. Because if the surroundings are messy, that is… Water ponds, empty tins that have been used… You are in the middle of the mosquitoes. Even if you sleep under an impregnated mosquito net there will always be mosquitoes there so the best prevention is to disinfect the surrounding environment.”

To spray the house with insecticides before sleeping was an intervention that was brought up by some of the RNs. Furthermore, two other preventive interventions that could be used in one’s home were mentioned: to use an air conditioner because mosquitoes do not prefer the coolness and to cover or close doors and windows in the nightfall to keep the mosquitoes out.

The two last preventive interventions to avoid mosquito bites that were referred to was to wear long-sleeved clothes that cover arms and legs and to use mosquito repellent on the body. However, the few RNs that mentioned them explained that the interventions were not used that often; long-sleeved clothes due to the heat and mosquito repellents due to scepticism towards using chemical products on the body.

Diagnosis and Treatment

Some of the RNs explained how they observed signs and asked for symptoms and medical history when a new patient arrived with a suspected case of malaria. To find out if it was malaria or not, the RNs stressed the importance of carrying through a diagnostic test. The RNs recommended their patients to do a microscopy examination, the so-called thick blood smear test. In addition to detecting an eventual malaria infection, this test could also determine the severity of the malaria infection, which decided what treatment that should be given.

“For me, a case of malaria that I can treat well, it’s a case of malaria that is confirmed by an examination.”
If the result of the thick blood smear test was negative, that meant no malaria infection, the RNs recommended their patients to take a preventive medicine called Fansidar. The RNs explained that this medicine was used as a preventive course of treatment to avoid an outbreak of malaria. It could be used by individuals of all ages, also by children from two years of age. One RN described how it was given also to pregnant women for preventive purposes.

“When 20 weeks [of pregnancy] have passed, we give [Fansidar] and in the 24th week, we give the second dosage and in the 28th week, we give the third dosage. We can give it all the way until the 32nd week if it’s necessary. So, we give three times to a pregnant woman. That is if the woman does not have malaria, we just do the prevention.”

For individuals with a positive result of the thick blood smear test, a curable treatment was given. Some of the RNs pointed out that tablets, the so-called artemisinin-based combination therapy (ACT), were sufficient as a treatment for a simple case of malaria. If it was a complicated case of malaria, an infusion with other types of medicines might be needed. Two of the RNs from two different health clinics described that if the malaria infection got too complicated and if there was a risk that it developed into a neurological problem the RNs would refer the patient to a larger hospital.

If a patient that was treated for malaria came back to the health clinic with a relapsing case of malaria, one of the RNs pointed out that it should be considered whether it was a resistant type of malaria. In that case, the treatment had to be changed. The two RNs that had worked the longest mentioned a medicine that was now reserved only for complicated cases of malaria in order to decrease the resistance. The RNs had experiences of a time when this medicine was used as both a preventive treatment and as a curable treatment of simple cases of malaria before the recommendations were changed.

### Possibilities in Malaria Prevention

#### The Importance of Education and Information

All six RNs underlined the importance of education and information in their work with malaria prevention. The RNs experienced that the most common way to educate the patients was by giving advice. They advised the patients how to protect themselves from being infected with malaria and to always use these preventive interventions.

“When it comes to prevention, if someone comes to us […] we will give him trustworthy information about preventive interventions so that he can prevent malaria.”

Some of the RNs highlighted the same keywords that they followed in their preventive work of educating and informing the patients. The keywords were “information, education, communication”, abbreviated “IEC”.

“Yes, we educate. That is what we call ‘IEC’. To educate the patients, to inform them about the prevention, about the disease and the risks…”
The RNs emphasized that they educated all people that came to the health clinic, if they were children, men, women, pregnant or not, all of them were educated about malaria prevention. Some of the RNs pointed out mothers with children as a group that was particularly important to educate. Also, a few of the RNs explained that the education and information given did not vary depending on if the patient had had malaria before or not; the same information was given to both groups. Some of the RNs pointed out that it was unusual to meet a patient who had never had malaria before, therefore, the question was not relevant.

“The work for someone that has already had malaria, we have to insist that they use preventive interventions to not get malaria again. And for someone that has never had malaria, it’s still to give information about the preventive interventions.”

One RN had experiences of educating and informing patients in groups on a regular basis. The RN meant that there were advantages of educating in groups, one of them being a better understanding among the patients since they could support each other. Other RNs explained that they did not educate in groups other than on special occasions. However, the general view of the RNs was that they always had to continue to educate the patients, no matter what situation or why they had come to the health clinic.

To Organise and Collaborate

A majority of the RNs described how they organised their work with malaria following a standardized procedure manual. First and foremost, the manual contained recommendations on treatments of different cases of malaria, but it also concerned recommendations on malaria prevention. The RNs that had experiences of the manual were working at three different health clinics. A few of the RNs, that were working at the same health clinic, said that they did not know anything about any kind of manual or document concerning malaria.

“It’s a document from WHO that they have imposed on us, how to treat cases of malaria, if it’s the simple form or the severe form. There is a document that we have mounted on the wall and we follow it.”

There were a few of the RNs that brought up screening of people as a systematic way to find malaria infections. One of the RNs explained that they sometimes had an event at the health clinic when they invited people to come and make examinations, such as the thick blood smear test, for free. Another RN described that there was a routine at their health clinic to sometimes make the thick blood smear test on all patients who came there, even if a patient had come to the health clinic because of another disease.

RNs from all three health clinics had experiences of collaborating with the Congolese state and with organisations in different ways. A few of the RNs explained that the Congolese state sometimes organised seminary days in collaboration with the health clinic, when people could come and learn more about, for example, malaria and malaria prevention. Occasionally, there were also campaigns organised by the Congolese state together with WHO in which ITNs were distributed to people for free with the help of health clinics and hospitals. A majority of the RNs brought up ITN distribution campaigns to be of great importance in malaria prevention. Some of the RNs said that the ITNs were distributed to all people and some that they were distributed only to mothers, children and pregnant
women. A few of the RNs described that the campaigns were organised with the help of a local politician; the chief of the district.

“We bring in the chief of the district, that speaks in a megaphone: ‘this day on this date at this time, send the mothers of children from zero to five years old to that hospital to get a mosquito net’. […] It’s the chief of the district that will inform the population in the district.”

One RN recounted that the health clinic had a special collaboration with WHO and UNICEF, which involved visits of people from the organisations to the health clinic. On their visits, the people supervised the health workers at the health clinic on how to work with different health issues, such as malaria. Another RN had been working for a non-governmental organisation in which they distributed ITNs and educated people about healthy and unhealthy living habits. The RN also described how she collaborated with another profession in the organisation.

“Usually, I also worked with the psychologist. We took advantage of working together to educate the children.”

There was one RN that said that she did not know anything about collaborations with people outside the health clinic, but that they had a good collaboration between the colleagues at the health clinic. One RN pointed out that collaboration with the church was important and that the church was a good place to spread information to a lot of people. Another RN experienced that higher politicians did not care at all about the work performed at small health clinics, even though she thought that the collaboration with politicians at a local level was good.

**Difficulties in Malaria Prevention**

**Lack of Resources**

A majority of the RNs experienced a lack of resources at the health clinic as a difficulty they had to deal with in their work with malaria prevention. At the time of the interviews, none of the three health clinics had ITNs to distribute. One of the RNs underlined that this was a big problem and that the possibility to distribute ITNs should be permanent and not occasionally, as it was now. She explained that when patients came and asked for ITNs and the health clinic did not have it, the patients got discouraged and the risk that they would not protect themselves from mosquito bites increased. Other RNs mentioned that sometimes, medicines were missing at the health clinic and sometimes, material in general.

“The difficulty is that sometimes, medicines are missing. We can’t act correctly, even if we want to save someone. Sometimes, we are limited because medicines are missing.”

Some RNs had experiences that a lack of resources could be a personal difficulty also for the individual patient. A few of the RNs explained that some people were limited and could not afford to buy, for example, ITNs themselves. Then, if the health clinic did not have ITNs to distribute for free, the RNs found it difficult to solve the situation.
One of the RNs recounted that it was difficult to find the time for all the work duties; the workload was overwhelming. There was not enough time for the RN to do all the work she wanted to do, and she had to reduce the number of occasions for educating the patients in groups to have time for the other work duties. The RN explained that this meant that she spent less time educating the patients about malaria prevention.

“The one who does the curable consultations - that’s me, the one who does the prenatal consultations - that’s me, the one who does the family planning - that’s me, all that… And the vaccinations, it’s only I who do that. So, I have tried to reduce the number of days for that [educating the patients in groups].”

To Not Be Understood

Some of the RNs experienced that patients did not always understand and apply the knowledge that the RNs shared with them. Sometimes, it was difficult to educate and inform the patients when there was incomprehension. One RN explained that the difficulty was to know whether the patient had understood the education and applied it at home and the RN thought that the only way to find out was to make a home visit, which was not possible with the existing resources at the health clinic.

Another difficulty that some of the RNs mentioned was the patient’s neglect. The RNs meant that some patients received information about malaria prevention and treatment, but that they just neglected it. A few of the RNs had experiences of how dangerous this could be. As one RN pointed out, if someone neglected the malaria symptoms and did not go to a health clinic to make an examination or to get a treatment, death might follow. Because malaria is a disease that kills if it remains undiscovered or untreated.

“There are patients that don’t do what we advise them to do. And then, the education… They don’t take it seriously. Their health status… It harms them. When we ask them to do like this or like that, there are those that neglect it.”

A few of the RNs found it difficult to deal with patients’ self-diagnosis and self-treatment. The RNs had experiences of patients coming to the health clinic that had already been ill for a while. They had made their own diagnosis of malaria and might have bought and treated themselves with medicines of poor quality. One of the RNs pointed out that a lot of people imagined that fever automatically meant malaria, even though fever was nothing but a sign. The RNs underlined the importance of advising the patients to always go to a health clinic to have the diagnosis confirmed when signs of malaria appeared so that the patient could get a proper treatment.

“I say [to the patient]: ‘make an appointment at the hospital, go and get a consultation.’ That’s it. To make an examination so that it will be confirmed.”
DISCUSSION

Discussion of Findings

One of the RNs’ work duties in Congo was to identify population groups at risk of getting infected with malaria to be able to use preventive interventions where they are needed. The interviewed RNs underlined that all people in Congo are at risk of receiving malaria, but that certain groups are at higher risk. According to statistics from the Institute for Health Metrics and Evaluation (2017), malaria is the primary cause of death for children under five years of age. The RNs experienced that malaria is a large problem for children above all and they purposefully worked with mothers to improve the malaria prevention in this group. Furthermore, the RNs pointed out more vulnerable groups that are at higher risk, including pregnant women and poor individuals. In the RN’s professional responsibility, it is included to promote efforts that support the health of the population and in particular, the health of vulnerable population groups (ICN, 2012). By identifying the vulnerable groups at higher risk of getting infected with malaria in the Congolese society, the RNs are able to direct their preventive efforts towards those who need it the most.

The RNs interviewed in this study experienced that educating and informing patients was a major part of their preventive work against malaria. They described how they educated all the patients of both sexes and different ages about how to protect themselves from malaria. According to ICN (2012), one of the RN’s professional responsibilities is to provide patients and their families with accurate and sufficient information. Additionally, research studies (Douglas et al., 2017; Higgins et al., 2007) show that information from healthcare professionals should be given at the right time. The interviewed RNs educated and informed the patients in different ways, most commonly by giving advice. By advising the patients, the RNs could reach all patients, individually or in groups, although it was not certain that the information would be adapted to the individual. The RNs also pointed out that they informed the patients about malaria prevention in all situations, which resulted in that patients who were at the health clinic for reasons other than malaria might still receive information about malaria prevention. A possible explanation for the difficulty to be understood by the patients that the RNs experienced is that too little or too much information was given at the wrong time. However, the RNs wanted to use every opportunity they could to inform the patients since they all worked at smaller health clinics with many meetings with different patients. The preventive work that the RNs performed through education and information was first and foremost primary prevention, which means measures taken before a disease has occurred (Hedelin et al., 2014). Nonetheless, education and information can be a part of secondary and tertiary prevention as well since these prevention levels include preventing development and relapses of a disease (Isacsson, n.d.). When the RNs described how they educated patients that had already had malaria before, the education was done on a tertiary prevention level. Most importantly, the RNs experienced that education and information was an effective way to communicate preventive interventions against malaria. It was primarily through education and information that the RNs had the opportunity to improve the malaria prevention among the Congolese population.

The interviewed RNs had a broad knowledge of many different preventive interventions that they informed their patients about. A majority of the RNs thought that sleeping under an ITN was the most effective intervention to avoid mosquito bites. In 2004 a research review was made, investigating the effectiveness of ITNs. The findings of the review show
that ITNs are very effective when it comes to reducing malaria incidence and deaths (Lengeler, 2004). Hence, it is already known for quite some time that ITNs are effective and this is something that the RNs interviewed in this study knew very well. The RNs recommended patients of all ages to always use ITNs while sleeping. Furthermore, a majority of the RNs had experiences of ITN distribution campaigns organised in collaboration with the Congolese state and WHO and they considered the campaigns to be of great importance. Augustinic Polec et al. (2015) found in their research review that giving ITNs for free is an effective way to increase the ownership of ITNs and that people who receive ITNs for free are using them to the same extent as people who buy their ITNs. Despite the fact that ITN distribution campaigns are organised in Congo, it does not seem to be enough. According to a survey made by the Congolese National Centre of Statistics and Economic Studies in 2012, not even half of the population in Congo were protected by mosquito nets (Centre National de la Statistique et des Études Économiques, 2012). Even though some years have passed since the survey was carried through, the statistics from the Institute for Health Metrics and Evaluation (2017) indicate that a lot of people in Congo do not protect themselves enough since malaria is still a huge problem in the country. The interviewed RNs expressed that it was problematic when there were no ITNs to distribute and that the distribution should be permanent. Still, when there were ITNs available, the RNs strongly recommended them as an important preventive intervention.

The RNs interviewed in this study experienced a lack of resources as an obstacle in their work with malaria prevention. As already mentioned, ITNs were often missing, and so were also medicines and other material. Research shows that indoor residual spraying is another effective intervention to avoid mosquito bites (Pluess et al., 2010). Despite this, the intervention was mentioned by only a few of the interviewed RNs. Perhaps a lack of resources was a reason why this method seemed to be used so rarely. Additionally, the RNs explained, some individuals were limited and could not afford to buy material necessary to prevent malaria. According to Central Intelligence Agency (2017), approximately 47 percent of the population in Congo, that is almost 2,350,000 people, lives below the poverty line. Poverty makes the RNs’ preventive work difficult. Poverty may be a reason why some of the patients diagnose and treat themselves without an assessment from a healthcare professional. To make a consultation at a health clinic costs money and medicine of good quality is expensive, which may explain why people go to the market instead to buy cheap medicine. A few of the interviewed RNs experienced that the number of health workers was not sufficient. They felt limited and could not do everything they wanted, such as educating a group of patients or following up a patient through a home visit. Congo lacks all kinds of healthcare professionals according to WHO Global Health Workforce Alliance (2017). This results in RNs struggling to find the time for all the work duties and the preventive work against malaria may be suffering. A lack of resources on many levels makes malaria prevention difficult for the RNs in Congo. An increased access to resources would improve the malaria prevention, for example, through greater access to preventive methods, such as ITNs and indoor residual spraying, and more RNs working with malaria prevention.

**Discussion of Method**

It is the objective of the study that determines what method that should be used (Henricson & Billhult, 2017). In this study, a qualitative method with semi-structured interviews was used. The advantage of a qualitative study is that a deeper understanding of the studied phenomenon can be achieved (Henricson & Billhult, 2017). The objective of this study
was to gain a deeper understanding of RNs’ experiences of malaria prevention and a qualitative method was the best way to achieve this. In a qualitative study, only a few participants are included and not a large number of participants, which is common in a quantitative study. To include a large number of participants in a quantitative study contributes to an increased generalisability. Quantitative studies thus increase the ability to apply the findings to other groups and surroundings (Polit & Beck, 2012). Hence, a smaller generalisability may be a limitation of qualitative studies. However, the aim of this study was not to get as great generalisability as possible but to receive a deep understanding of the subject that was studied, something that was achieved with qualitative semi-structured interviews. A literature review could also have generated an understanding of the subject since the aim of a literature review is to provide an updated depiction of current research. A challenge with this method though is to find a sufficient number of current research articles (Rosén, 2017). As the number of research articles on the subject under study was essentially non-existent, a literature review was precluded. Therefore, despite the limitations of a qualitative method, it was still the method that best suited this study.

The two sampling methods used to get participants for the study were convenience sampling and snowball sampling. A convenience sampling is when participants receive information about a study and then they identify themselves as volunteers. Sampling by convenience was a good way to start the sampling process since it is a method that is easy and efficient (Polit & Beck, 2012). Three participants at one health clinic were identified this way. However, a disadvantage of this method is that it may not generate participants that can provide rich descriptions of the subject, something that is essential in qualitative interview studies (Polit & Beck, 2012). Accordingly, snowball sampling was also used. With this method, three more participants were found at two other health clinics. This was useful in two ways; to find enough participants for the study since the number of RNs volunteering in the first clinic was insufficient and to explore new dimensions from RNs in other clinics to deepen the study since these participants would contribute with a greater variety and new perspectives. There is a risk that snowball sampling may generate participants who have very similar experiences (Polit & Beck, 2012). In this study, however, the participants worked at health clinics in different parts of the city of Brazzaville and they were considered to have diverse and varied experiences.

One of the sample criteria in this study was that the participants had to be able to communicate in French since this was the language that was used in the interview sessions. As French is an official language in Congo (Central Intelligence Agency, 2017), this was not a problem; all those who were contacted spoke French. However, French is not my native language, which may have affected the study in different ways. The questions in the interview guide that were translated from English into French may have been unclear or incomprehensible. There should be well-known words used in the questions (Polit & Beck, 2012), and to ensure this, French-speaking persons were asked to evaluate the translation. Therefore, my assessment is that the questions used were neither unclear nor incomprehensible. If the participants speak a language other than the interviewer, an interpreter may be used during the interview sessions. In this way, nuances in the language may be perceived and relevant supplementary questions may be asked (Polit & Beck, 2012). It was considered whether to use an interpreter in this study, but the conclusion reached was that it was not needed. The interviewer in the study (I) was deemed to have sufficient knowledge in French to obtain a good understanding in the interview sessions. If there were a word or a phrase the interviewer did not understand, the interviewer asked the participant for clarification during the interview session. In addition, it was considered an
advantage that the interviewer did not share the same culture as the participants since the interviewer’s preunderstanding and preconceptions were different than someone of the same culture. Confirmability means the extent to which a study’s findings are derived from the participants’ narratives and not from the researcher’s bias (Polit & Beck, 2012). By having a different culture than the participants, the researcher in this study was able to be more open and curious about things that differed from the researcher’s own culture. Thus, the researcher’s bias was decreased, and the study’s confirmability was increased, which made the study more trustworthy.

**Conclusion**

The RNs interviewed in this study had a profound knowledge of malaria prevention that they used in their preventive work. They had experiences of working with vulnerable groups and were directing their preventive efforts where they were needed. The RNs experienced that educating and informing the population was an effective way to work with malaria prevention. However, the RNs sometimes experienced incomprehension among the patients and to be better understood, the RNs could adapt the information to the individual even more. The RNs were working on a primary, secondary and tertiary prevention level, for example, by informing groups that had not had malaria and that had already had malaria before. A difficulty that the RNs experienced was a lack of resources on many levels, such as a lack of material, medicines and healthcare professionals. This and a widespread poverty in Congo complicate the RNs’ work with malaria prevention. An increased access to resources would lead to improvements in the RNs’ preventive work and to more people being able to prevent malaria.

**Further Research**

Considering that this subject is very unexplored, further research on RNs’ perceptions of malaria prevention is required. Especially because prevention is crucial in the reduction of malaria incidence and RNs have such an important role in illness prevention. To increase the knowledge about malaria prevention in different settings, research is needed in urban as well as rural settings. In addition, quantitative research is needed to find out how RNs’ preventive work affects the population on a larger scale.

**Clinical Relevance**

The aim of this study was to receive a better comprehension of how RNs work to prevent malaria in the Republic of the Congo. The findings show that education and information played an important role in the RNs’ preventive work. The knowledge of how RNs educate and inform the patients is essential in all preventive work, whether it concerns malaria or not. Furthermore, this study has increased the insight into RNs’ work with malaria prevention in particular, which is especially useful in sub-Saharan African countries. However, the extent of the study was small and further research is required to apply the knowledge into practice.
ACKNOWLEDGEMENTS

I would like to express my appreciation to all those who have supported me in different ways throughout the study. The journey to Congo was made possible by my friend, Christer Daelander, who helped me make an initial contact and answered all my questions and by my contact person, Julien Kodia, who gave me a warm welcome and explained all the things I did not understand in the city of Brazzaville. Special thanks to all participants in the study, that gladly shared their experiences and knowledge with me.

I would like to thank my supervisor Margareta Westerbotn and examiner Ami Bylund, who always believed in me and encouraged me to keep on writing. I am particularly grateful for the Mbakissa family, that made me a part of their family and made me experience the warmth and richness of the Congolese culture. Last but not least, I would like to thank my family and friends in Sweden who supported me through the joy and the hardships.

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REFERENCES


APPENDIX A

Brazzaville 2017-11-01

To the Head of the Clinic,

________________________

Medical Social Evangelical Clinic of _________

My name is Tilda Jönsson and I am a nursing student at Sophiahemmet University in Stockholm, Sweden. I am in my final year of my nursing studies and I am going to carry through a bachelor’s degree study covering 15 university credits. The subject that will be studied concerns the prevention of malaria (please see the next page for a summary of the content and the structure of the study). I am very interested in carrying through the study at the Medical Social Evangelical Clinic of _________.

If You approve that the study is carried out at the Medical Social Evangelical Clinic of _________, I would be grateful for Your signature of this document. If You are hesitant to the implementation of the study at the clinic, I would be grateful if You could inform me of this. If You have any additional questions about the study, please contact me or my teacher at Sophiahemmet University in Sweden.

Yours sincerely,

________________________

Signature

Tilda Jönsson
Phone number: *
Email address: *

My Teacher at Sophiahemmet University in Sweden
Margareta Westerbotn
Phone number: *
Email address: *

*Not included in the published version.
Summary of the Content and the Structure of the Study

**Working Title:** Nurses’ experiences of malaria prevention in the Republic of the Congo.

Malaria is an infectious disease caused by malaria parasites that are transferred to humans by mosquitoes. Malaria causes approximately 1.3 percent of all deaths globally. More than 90 percent of all people that die of malaria live in sub-Saharan Africa, making malaria one of the largest cause of death in this part of the world. In the Republic of the Congo, malaria is the fourth largest cause of death. There is no commercially available malaria vaccine at the present time, according to the World Health Organization. To reduce malaria infections, other means of prevention have to be used. The key to prevent malaria infections is to increase the knowledge among those at risk of getting the disease. Nurses play an important role in the education of patients and their families. In my study, I will focus on increasing the knowledge of how nurses work to prevent malaria. The objective of the study is to examine the experiences of registered nurses working with malaria prevention in the Republic of the Congo.

The study will be carried out by collecting information through interviews with nurses in Brazzaville. The interviews will take place sometime between the 7th of November and the 1st of December 2017. The interviews will be recorded with a digital voice recorder and then analysed to find a result for the study. The interviews will be treated confidentially and the recordings will be deleted after they have been analysed. It is voluntary to participate in the interviews and the participants may withdraw from the study at any time. The participants will not receive any payment for the interviews. The study will be finalised in the form of an essay in the middle of January 2018. No names will be included in the final essay, due to ethical considerations and to maintain the confidentiality.

I hereby approve that Tilda Jönsson is allowed to carry through the study “Nurses’ experiences of malaria prevention in the Republic of the Congo” at the clinic during the months of November and December 2017.

__________________________________

City, Date

__________________________________

Signature, Head of the Clinic

__________________________________

Clarification of the Signature
Au Directeur de la Clinique,

________________________

Centre Médico-Social Evangélique de __________

Je m'appelle Tilda Jönsson et je suis étudiante en sciences infirmières à l’Université Sophiahemmet de Stockholm en Suède. Je suis en dernière année de mes études en sciences infirmières et je vais exécuter une recherche universitaire pour écrire un mémoire à 15 crédits universitaires, soit 10 semaines d’études. Le sujet qui sera étudié concerne la prévention du paludisme (veuillez consulter la page suivante pour un résumé du contenu et de la structure de l’étude). Je suis très intéressé à réaliser l’étude au Centre Médico-Social Evangélique de __________.

Si vous approuvez que l’étude soit réalisée au Centre Médico-Social Evangélique de __________, je vous serais reconnaissant de votre signature de ce document. Si vous hésitez à réaliser l’étude à la clinique, je vous serais reconnaissant de m’avoir informé de cela. Si vous avez des questions supplémentaires sur l’étude, contactez-moi ou ma professeur à l’Université Sophiahemmet en Suède.

Cordialement,

________________________

Signature

Tilda Jönsson
Numéro de téléphone: *
Adresse e-mail: *

Professeur à l’Université Sophiahemmet en Suède
Margareta Westerbotn
Numéro de téléphone: *
Adresse e-mail: *

*Non inclus dans la version publiée.
Résumé du contenu et de la structure de l’étude

Titre de l’étude: Expériences des infirmières travaillant avec la prévention du paludisme en République du Congo

Le paludisme est une maladie infectieuse causée par les parasites du paludisme qui sont transmis aux humains par les moustiques. Le paludisme cause environ 1,3 pour cent de tous les décès dans le monde. Plus de 90 pour cent des personnes qui meurent du paludisme vives en Afrique subsaharienne, ce qui fait du paludisme l’une des principales causes de mortalité dans cette partie du monde. En République du Congo, le paludisme est la quatrième cause de mortalité. Actuellement, il n’existe aucun vaccin antipaludique disponible à la vente, selon l’Organisation mondiale de la santé (OMS). Pour réduire les infections paludiques, d’autres moyens de prévention doivent être utilisés. La clé pour prévenir les infections paludiques est d’accroître les connaissances parmi les personnes à risques de contracter la maladie. Les infirmières jouent un rôle important dans l’éducation des patients et de leurs familles. Dans mon étude, je vais me concentrer sur l’augmentation des connaissances sur la façon dont les infirmières travaillent pour prévenir le paludisme. L’objectif de l’étude est d’examiner les expériences des infirmières travaillant avec la prévention du paludisme en République du Congo.

L’étude sera réalisée en interviewant avec des infirmières à Brazzaville. Les interviews auront lieu entre le 8 novembre et le 1er décembre 2017. Les interviews seront enregistrées avec un enregistrateur vocal et ensuite analysées pour trouver un résultat pour l’étude. Les interviews seront traitées confidentiellement et les enregistrements seront supprimés après avoir été analysés. Il est volontaire de participer aux interviews et les participants peuvent se retirer de l’étude à tout moment. Les participants ne recevront aucun versement pour les interviews. L’étude sera finalisée sous la forme d’un essai en janvier 2018. Aucun nom des participants ne sera inclus dans l’essai final en raison de considérations éthiques et de maintenir la confidentialité.

J’approuve par la présente que Tilda Jönsson est autorisée à réaliser l’étude “Expériences des infirmières travaillant avec la prévention du paludisme en République du Congo” à la clinique durant les mois de novembre et décembre 2017.

__________________________
Lieu, Date

__________________________
Signature, Directeur de la clinique

__________________________
Clarification de la signature
APPENDIX B

INTERVIEW GUIDE

Background

● In what year were you born?
● For how long have you been working as a nurse? And at this clinic?
● According to you, which individuals or groups are at most risk of getting infected with malaria in the city of Brazzaville?

Measures

● Could you describe how you work with malaria prevention?
● Could you tell me what kind of preventive measures against malaria you use in your work?
● Which preventive measure do you use most frequently?
● According to you, which preventive measure is the most effective?

Education and Information

● In your work as a nurse, do you educate and inform individuals about malaria prevention? If so, how?
● Could you tell me how you work with individuals who have had malaria before? How do you work with individuals who have never had malaria before?

Structure and Organisation

● Is there a procedure manual for malaria prevention that you follow? If so, how do you use it? By whom is the manual written?
● Could you describe how you work with malaria prevention in groups or communities, if you do? Which groups or communities?
● Could you tell me how you collaborate with others in your work with malaria prevention? For example, colleagues in the healthcare, outside the healthcare, politicians, organisations, etc.
● Could you describe the limitations or difficulties in your work with malaria prevention?
● Is there anything more you want to tell me about this subject?

Examples of Follow-Up Questions

● Could you tell me more about…?
● Could you explain…?
● What do you think about…?
GUIDE D’INTERVIEW

La contexte

● Vous êtes né en quelle année ?
● Depuis combien de temps travaillez-vous comme infirmière ? Et dans ce centre ?
● Selon vous, quels sont les personnes ou groupes les plus à risque d’être infectés par le paludisme dans la ville de Brazzaville ?

Des mesures

● Pouvez-vous décrire comment vous travaillez pour la prévention du paludisme ?
● Pouvez-vous me dire quelle sorte des mesures préventives contre le paludisme vous utilisez dans votre travail ?
● Quelle mesure préventive utilisez-vous le plus souvent ?
● Selon vous, quelle mesure préventive est la plus efficace ?

L’éducation et de l’information

● Dans votre travail d’infirmière, est-ce que vous éduquez et informez les personnes à propos de la prévention du paludisme ? Si oui, comment vous le faites ?
● Pouvez-vous me dire comment vous travaillez avec les personnes qui ont déjà eu le paludisme auparavant ? Comment travaillez-vous avec les personnes qui n’ont jamais eu le paludisme auparavant ?

Structure et organisation

● Est-ce que il y’a un manuel de procédures pour la prévention du paludisme que vous suivez ? Si oui, comment l’utilisez-vous ? Ce manuel est écrit par qui ?
● Pouvez-vous décrire comment vous travaillez pour la prévention du paludisme dans des groupes ou des communautés, si vous le faites ? Quels groupes ou communautés ?
● Pouvez-vous me dire comment vous collaborez avec d’autres personnes dans votre travail de prévention du paludisme ? Par exemple, les collègues dans les services de santé, et en dehors des services de santé, des politiciens, des organisations, etc.
● Pouvez-vous décrire les limitations ou les difficultés dans votre travail de prévention du paludisme ?
● Est-ce que il y’a quelque chose de plus que vous voulez me dire à ce sujet ?

Des exemples de questions de suivi

● Pouvez-vous me dire plus à le sujet de…?
● Pouvez-vous expliquer…?
● Qu’est-ce que vous pensez de…?
Information to participants

My name is Tilda Jönsson and I am a nursing student at Sophiahemmet University in Stockholm, Sweden. I am in my final year of my nursing studies and I am going to carry through a bachelor’s degree study covering 15 university credits. The subject that will be studied concerns the prevention of malaria. I am very interested in carrying through interviews with nurses, that are chosen according to the following criteria:

- someone who has a basic nursing education and is a registered nurse,
- who has at least two years of nursing experience,
- who, in one way or another, has worked with malaria prevention,
- who speaks a basic level of French.

Working Title of the Study:
Nurses’ experiences of malaria prevention in the Republic of the Congo.

Malaria is an infectious disease caused by malaria parasites that are transferred to humans by mosquitoes. Malaria causes approximately 1.3 percent of all deaths globally. More than 90 percent of all people that die of malaria live in sub-Saharan Africa, making malaria one of the largest cause of death in this part of the world. In the Republic of the Congo, malaria is the fourth largest cause of death. There is no commercially available malaria vaccine at the present time, according to the World Health Organization. To reduce malaria infections, other means of prevention have to be used. The key to prevent malaria infections is to increase the knowledge among those at risk of getting the disease. Nurses play an important role in the education of patients and their families. In my study, I will focus on increasing the knowledge of how nurses work to prevent malaria. The objective of the study is to examine the experiences of registered nurses working with malaria prevention in the Republic of the Congo.

The study will be carried out by collecting information through interviews with nurses in Brazzaville. The interviews will take place sometime between the 7th of November and the 1st of December 2017. The interviews will be recorded with a digital voice recorder and then analysed to find a result for the study. The interviews will be treated confidentially and the recordings will be deleted after they have been analysed. It is voluntary to participate in the interviews and the participants may withdraw from the study at any time. The participants will not receive any payment for the interviews. The study will be finalised in the form of an essay in the middle of January 2018. No names will be included in the final essay, due to ethical considerations and to maintain the confidentiality.

Yours sincerely,

Tilda Jönsson
Phone number: *
Email address: *
Informed consent

I hereby confirm that I have received information about the purpose of the study and its implementation and that I have understood the information. I give my consent to participate in the study. I understand that my participation is voluntary, which means that I can withdraw from the study at any time without further explanation.

__________________________
Date

__________________________
Signature

__________________________
Clarification of the Signature

The purpose and the implementation of the study have been explained by me, the undersigned, consent has been obtained and the participant has received a copy of “Information to participants”.

__________________________
Date

__________________________
Signature

__________________________
Clarification of the Signature

*Not included in the published version.
Information aux participants

Je m’appelle Tilda Jönsson et je suis étudiante en sciences infirmières à l’Université Sophiahemmet de Stockholm en Suède. Je suis en dernière année de mes études en sciences infirmières et je vais exécuter une recherche universitaire pour écrire un mémoire à 15 crédits universitaires, soit 10 semaines d’études. Le sujet qui sera étudié concerne la prévention du paludisme. Je suis très intéressé à réaliser des interviews avec des infirmières choisies selon les critères suivants:

- qui a une formation en soins infirmiers et un diplôme d’État d’infirmier,
- qui a au moins 2 ans d’expérience en soins infirmiers,
- qui, d’une manière ou d’une autre, a travaillé avec la prévention du paludisme,
- qui parle un niveau basique de français.

Titre de l’étude: Expériences des infirmières travaillant avec la prévention du paludisme en République du Congo

Le paludisme est une maladie infectieuse causée par les parasites du paludisme qui sont transmis aux humains par les moustiques. Le paludisme cause environ 1,3 pour cent de tous les décès dans le monde. Plus de 90 pour cent des personnes qui meurent du paludisme vivent en Afrique subsaharienne, ce qui fait du paludisme l’une des principales causes de mortalité dans cette partie du monde. En République du Congo, le paludisme est la quatrième cause de mortalité. Actuellement, il n’existe aucun vaccin antipaludique disponible à la vente, selon l’Organisation mondiale de la santé (OMS). Pour réduire les infections paludiques, d’autres moyens de prévention doivent être utilisés. La clé pour prévenir les infections paludiques est d’accroître les connaissances parmi les personnes à risques de contracter la maladie. Les infirmières jouent un rôle important dans l’éducation des patients et de leurs familles. Dans mon étude, je vais me concentrer sur l’augmentation des connaissances sur la façon dont les infirmières travaillent pour prévenir le paludisme. L’objectif de l’étude est d’examiner les expériences des infirmières travaillant avec la prévention du paludisme en République du Congo.

L’étude sera réalisée en interviewant avec des infirmières à Brazzaville. Les interviews auront lieu entre le 8 novembre et le 1er décembre 2017. Les interviews seront enregistrées avec un enregistreur vocal et ensuite analysées pour trouver un résultat pour l’étude. Les interviews seront traitées confidentiellement et les enregistrements seront supprimés après avoir été analysés. Il est volontaire de participer aux interviews et les participants peuvent se retirer de l’étude à tout moment. Les participants ne recevront aucun versement pour les interviews. L’étude sera finalisée sous la forme d’un essai en janvier 2018. Aucun nom des participants ne sera inclus dans l’essai final en raison de considérations éthiques et de maintenir la confidentialité.

Cordialement,

Tilda Jönsson
Numéro de téléphone: *
Adresse e-mail: *
Professeur à l’Université Sophiahemmet en Suède
Margareta Westerbotn
Numéro de téléphone: *
Adresse e-mail: *

Consentement éclairé

Je confirme par la présente que j’ai reçue des informations sur l’objectif de l’étude et sur sa mise en œuvre et que j’ai bien compris l’information. Je consens à participer à l’étude. Je comprends que ma participation est volontaire, ce qui signifie que je peux me retirer de l’étude à tout moment sans autre explication.

__________________________
Date

__________________________
Signature

__________________________
Clarification de la signature

L’objectif et la mise en œuvre de l’étude ont été expliqués par moi, le soussigné, le consentement a été obtenu et le participant a reçu une copie de “Information aux participants”.

__________________________
Date

__________________________
Signature

__________________________
Clarification de la signature

*Non inclus dans la version publiée.