

THESIS

The Experience Of Nurses Working In Public Health Centres
In Implementing Dengue Prevention Strategies
In The Indonesian Community



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of ADELAIDE

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A Proposal submitted for the Master of Nursing Degree

The University of Adelaide

South Australia

November

2015

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SIGNED STATEMENTS

I certify that This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the School of Nursing Library, being available for loan and photocopying.

Adelaide, 6 December 2015

Mira Utami Ningsih

ACKNOWLEDGEMENTS

First and above all, I praise Allah the Almighty for providing me this opportunity and granting me the capability to write this thesis. I would like to thank my loving husband, Yudha, and my beloved son, Iqbal, who were always be my reason to keep motivated during my studies. To my father and mother, my in laws, brothers and sisters who physically, emotionally and spiritually support me, I would not be able to achieve this without you all.

My deepest gratitude to my two supervisors Associate Professor Judy Magarey and Dr. Philippa Rasmussen whose support was unwavering. I would never successfully face such challenging times without your patient and guidance. I would also like to thank the research librarian, Maureen Bell, who provided me with technological and intellectual support through the literature search. My sincere gratitude to the head of Mataram and Taliwang Health Centres and the nurses who have been very supportive and encouraging.

Finally, this thesis could not be finished with the support and companionship from my colleagues Enny, Sharin, Eri, Mohammed, Rina, my Adelaide family, Richard and Sue, and other colleagues and friends.

Adelaide, 12 November 2015

ABSTRACT

Dengue disease is a mosquito-borne disease that remains a major problem for public health in numerous subtropical and tropical countries including Indonesia. Dengue prevention in Indonesia has been undertaken since 1968 involving public health nurses and the community. However, prevention remains a huge challenge for nurses and other health professionals. This study explored and interpreted the experience of public health nurses in implementing dengue prevention strategies in the Indonesian community to inform practice.

This study employed the interpretive hermeneutic phenomenological approach based on the work of Heidegger. Data were collected through interviews with five nurses working in two public health centres (PHCs) who had been involved in a dengue prevention team in Mataram Regency, West Nusa Tenggara Province. Data were analysed using Colaizzi's (1978) strategy for phenomenological data analysis.

Five themes representing the nurses' lived experiences emerged from this study. 'Relentless work' represents the demanding nature of prevention work. 'Collaboration and collective work' represents the need of nurses to work in collaboration with all people in community. 'Cadres are the hands of the nurses' represents the cadres' role and the relationship between them and nurses. 'The flowers will die' reveals the community response and their attitude towards dengue prevention. 'Access' reveals the difficulties faced by nurses in accessing individuals or households in the community.

Findings contribute to knowledge of nurses' roles in dengue prevention and highlight the need for continuous effort and adoption of strategies to improve community knowledge, awareness and participation. It is clear that nurses need to be equipped with good communication and diplomacy skills and be prepared to deal with community resistance.

CHAPTER ONE – INTRODUCTION

This study was designed to explore the lived experience of nurses working in Public Health Centres (PHC) implementing dengue prevention strategy in the Indonesian community. The idea of exploring this topic emerged from the researcher's interest in nurses' roles in dengue haemorrhagic fever (DHF) control in the community and from discussion with nurses working in PHC in a dengue endemic area. The exploration of the nurses' experience in dengue prevention program was considered essential because it provides opportunity for participants to rethink their experience, so they can understand, recognise and signify their own roles better. Furthermore, for public health nurses in general, it is anticipated that this exploration will provide them with the opportunity to interpret the data and explore the lessons that can be learnt from the experience and contributed to public health nursing.

Statement of Problem

Dengue disease is a mosquito borne disease caused by dengue virus (DENV) in the genus *Flavivirus* (Lindenbach 2007). The principal mosquito vector for dengue disease is *Aedes aegypti* that spreads four serotypes of dengue virus namely DENV-1-4, (Gubler 2014). These four serotypes can cause mild to severe and fatal disease in patients that include dengue disease (DD), dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS) (Gubler et al. 2014).

Every year, almost 50 million people suffered from dengue and the approximate number of people who live in dengue endemic countries reached 2.5 billion (World Health Organization 2009). This make it the most prevalent vector-borne disease and a main problem for public health in numerous subtropical and tropical countries (Shepard, Undurraga & Halasa 2013). Some 500,000 DHF patients required hospitalisation annually, and about 12,500 die (Beatty, Letson & Margolis 2009; World Health Organization 2011). With the spread of dengue from urban to rural areas worldwide, the increasing infection rates of dengue among people who previously have never been exposed may reach up to 90% (World Health Organization 2012).

Most at risk population for dengue are living in the Western Pacific and South-East Asian regions (World Health Organization 2012). In the Western Pacific region,

despite a decrease in cases after a huge epidemic in 1998, recently the incidence of dengue has increased with the most affected countries being Lao People's Democratic Republic, Singapore, Philippines and Malaysia (World Health Organization 2009; Yuzo & Tamano 2011). In 2009, Indonesia, Thailand, Sri Lanka, Myanmar and Timor-Leste were the five South-East Asian countries with the highest incidence of dengue because they are located in the equatorial zone with a tropical monsoon climate ideal for the spread of *Aedes aegypti*, the principal mosquito vector which circulates various serotypes of dengue virus (World Health Organization 2009).

With an increase in dengue cases, the economic burden of dengue in endemic countries in South East Asia reached US\$950 million annually in 2010 (Shepard, Undurraga & Halasa 2013). Three main components of this burden include illness costs, surveillance costs and prevention programs and other costs (Mavalankar et al. 2009; Roberts, CH, Mongkolsapaya & Sreaton 2013). Illness costs of dengue are directly associated with the disease, such as costs of hospitalisation, diagnostic tests, drugs and treatment for disability and complications. Prevention costs include cost for vector control, dengue surveillance, community participation in dengue prevention and other prevention programs (Shepard, Halasa & Undurraga 2014). Other costs that place more economic burden of dengue in endemic countries mainly result from work-time loss and loss of productivity (Shepard, Halasa & Undurraga 2014).

Indonesia was reported as the second most highly endemic country for dengue during the period of 2001-2010 and dengue has become a major public health problem in this nation with case fatality rates of 1%-5% (World Health Organization 2009, 2012). One dengue prone province in Indonesia is West Nusa Tenggara (WNT). This contagious disease remains a major problem in WNT because of rapid spread, risk of mortality and all districts in this province being affected by dengue (The Health Office of West Nusa Tenggara Province 2013). Among ten regencies in WNT Province, Mataram is the regency with the highest incidence of DHF in the last five years with the case fatality rate reaching 0.22% (The Health Office of West Nusa Tenggara Province 2013). Recent reports of the Health Agency of WNT province, identify that in 2012 there was a total of 827 cases of DHF, most were found in Mataram Regency (458 cases) and three cases of mortality due to dengue (The Health Office of West Nusa Tenggara Province 2013).

Indonesia continues to implement various dengue prevention strategies such as periodical larvae monitoring and counselling to prevent mortality and reduce annual incidence of DHF that has increased over the past 45 years, from 1968 to 2013 (Karyanti et al. 2014). The dengue prevention program in Indonesia has been applied by public health nurses who work in community health centres with community participation (Kusriastuti et al. 2004). Prevention remains a huge challenge for PHC nurses involved in the program. In implementing the prevention program, PHC nurses undertake different roles, such as program coordinators or leaders, educators and facilitators. They work in collaboration with community group leaders, regional leaders or decision makers and all people in the community with different characteristics in terms of educational and economic levels and culture. PHC nurses have the responsibility to reach the target of zero mortality caused by DHF, decrease in DHF cases and prevent outbreaks. Therefore, in implementing dengue prevention programs PHC nurses work in a team not only with other health professionals, but also with all people to make the program effective. Their experience of working in dengue prevention programs is assumed to be challenging because they have to work with numerous parties or groups in a community and have high goals that should be achieved.

Purpose of Study

The purpose of this interpretive phenomenological study was to explore public health nurses' experiences of implementing dengue prevention strategies in the Indonesian community to understand the meaning of this experience, which can help us to recognise the value added from the experience and highlight nurses' roles in dengue prevention. This purpose was accomplished through interviews with nurses working in a Public Health Centre (PHC) who have been involved in a dengue prevention program.

Objectives of Study

The objectives of the study were to:

1. explore and describe the lived experience of nurses working in PHC who have been a involved in dengue prevention program.
2. develop comprehension and interpretation of nurses experiences and

3. reveal the lessons that can be learnt from the lived experience of nurses implementing a dengue prevention program.

Statement of the Research Question

The research question arose from evidence that the incidence of DHF in Indonesia has increased over the last 45 years from 0.05 per 100,000 population in 1968 to 35-40 per 100,000 populations in 2013 (Karyanti et al. 2014) and that nurses working in public health centres are at the forefront of health promotion and dengue prevention. PHC nurses working on dengue prevention programs in the community have a great responsibility to make the prevention program effective and ensure a decrease in dengue cases. In implementing the prevention program, PHC nurses work in collaboration with other health professionals and various parties in the community including all people in community, community group leaders, regional leaders or policy and decision makers (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011). PHC nurses play the following different roles in collaboration with these parties; as educators, program coordinators, leaders and facilitators. It was hypothesised that their experience is worth exploring and that there are lessons that can be learned from nurses' experiences in a dengue prevention program. Therefore, the research question is as follows:

“What is the experience of nurses working in PHC in applying dengue prevention strategies in the Indonesian community?”

Significance of the Study

Public health nurses in Indonesia are at the forefront of health promotion and disease prevention including dengue prevention. In line with efforts to increase community participation in maintaining health, public health nurses implement dengue prevention strategies in collaboration with various community groups and community leaders (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011). Their experience in dengue prevention is worth exploring because it may potentially lead to an understanding of issues in dengue prevention. Moreover, this research potentially provides an opportunity to interpret and explore the information to draw lessons we can learn from nurse experiences and value we can add to public health nursing. Furthermore, exploring

nurses' experiences will be beneficial for nurses in understanding, recognising and signifying their own roles and value in dengue prevention in the community.

Assumptions

Heideggerian phenomenology was employed in this study with the following underlying assumptions:

- Nurses working in PHC involved in a dengue prevention program have had special roles and unique experiences.
- Nurse experiences in dengue prevention will provide valuable lessons that can be learned by public health nurses generally and be applied to clinical practice
- Nurse experiences in dengue prevention represent the roles of public health nurses in disease prevention and the value that can be added to their roles.
- Nurses will accurately remember their feelings and experiences related to involvement in dengue prevention programs.

Summary of the Thesis

This study is an interpretive phenomenological study that explores the lived experience of PHC nurses involved in dengue prevention program in the community at Mataram Regency in West Nusa Tenggara Province, Indonesia. Participants in this study were interviewed and asked to speak about their unique stories and experiences regarding involvement in a dengue prevention program. Data was analysed to identify key themes. Data analysis of this study is reported in chapter five. The interpretation or the study findings are presented in the last chapter of this thesis along with a profound discussion about the study findings.

CHAPTER TWO – LITERATURE REVIEW

Introduction

This chapter provides synthesis of results and conclusions from various literature related to the study topic in order to identify gaps in knowledge. The concept of dengue fever; dengue prevention and control; and nurses' experiences in dengue are highlighted. The results of previous studies related to dengue and its prevention are discussed and used as the knowledge base for this study.

A literature search was conducted to identify published and unpublished research relevant to the topic of this study. Using three main databases in nursing, namely Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus and PubMed, an initial search was undertaken to find suitable keywords and index terms. These keywords were used to identify the most relevant articles to the study topic. An extensive search was then undertaken utilising the identified keywords and terms in PubMed, Scopus, CINAHL and MEDLINE. To identify a wide variety of publications including unpublished studies, search in grey literature that included The University of Adelaide Digital Thesis and Google Scholar was also conducted.

Dengue Fever

The emergence and re-emergence of various infectious diseases, such as dengue fever, have been correlated with different factors including human migration, outdoor recreational activities and climate change (Patz et al. 2008). Dengue cases and its subcategories, including dengue fever (DF), dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS), are caused by four subtypes of dengue virus: dengue virus-1 (DENV-1), DENV-2, DENV-3 and DENV-4 (Lashley & Durham 2007). A person who has been infected with dengue may still be infected up to four times, because there is no cross-protective immunity generated among the four types of dengue virus (Decker 2012). In fact, an individual infected by a different serotype to the serotype of first exposure has greater risk for severe dengue (Simmons & Farrar 2009) Therefore, the presentations of the illness are potentially different and may vary from DF to DHF and DSS.

In the late 18th century, a dengue-like syndrome of illness was first documented and it is believed that the disease first spread through shipment routes from Asia to South

America (Decker 2012). An international effort to control dengue through mosquito control was started by the World Health Organisation (WHO) in 1949 which significantly decreased the number of dengue cases, but the number of cases began to increase around 1970 (Link 2007). Currently, more than 100 countries have endemic dengue with about one hundred million cases annually (San Martín et al. 2010).

Most at risk population for dengue are living in the Western Pacific and South-East Asian regions (World Health Organization 2012). The annual economic burden of dengue in endemic countries in Southeast Asian reached approximately US\$950 million in 2010 (Shepard, Undurraga & Halasa 2013). In 2009, Indonesia was included in the five South-East Asian countries with the highest incidence of dengue due to their equatorial zone with tropical monsoon climate which is ideal for the spread of *Aedes aegypti*, the principal mosquito vector that circulates different serotypes of dengue virus (World Health Organization 2009).

Over the past 45 years, from 1968 to 2013, the annual incidence of DHF in Indonesia increased (Karyanti et al. 2014). Almost all provinces in Indonesia have been affected by dengue. Data of DHF incidence in Indonesian provinces from 2010 to 2013 showed that Bali and DKI Jakarta are the provinces with the highest rate of DHF (Karyanti et al. 2014). In West Nusa Tenggara (WNT) Province, Mataram is the regency with the highest incidence of DHF in the last five years with the case fatality rate reaching 0.22% (The Health Office of West Nusa Tenggara Province 2013). A recent report of Health Agency of WNT province stated that in 2012 there was a total of 827 cases of DHF and most were found in Mataram Regency (458 cases) and three cases of mortality due to dengue (The Health Office of West Nusa Tenggara Province 2013).

Various factors have contributed to the transmission of dengue disease including population growth, human migration, increase in global tourism and commerce, inadequate water, poor sanitation, poor waste management systems, inadequate vector-control policy and climatic factors (Gubler et al. 2014; Guzman, A & Istúriz 2010; Hales et al. 2002; Hii et al. 2009; Jacobs 2000; Jury 2008; Promprou, Jaroensutasinee & Jaroensutasinee 2005; Simmons & Farrar 2009). An increase in human migration and tourism as a result of the development of modern transportation enables dengue virus and mosquitoes to quickly move to new regions around the

world (Gubler et al. 2014). Modern transportation that includes ‘transportation of cargo: using automobiles and truck the tyres of which have been shown to be carriers for *Aedes albopictus*’, which is one of the mosquito vectors of dengue virus (Gubler et.al 2014, p. 90). In the period of 1990 to 2005, the percentage of febrile travellers who returned from tropical regions being diagnosed with dengue increased from 2% to 16% (Wilder-Smith & Schwartz 2005). Currently, febrile illness among travellers returning from Southeast Asia is more often caused by dengue than malaria (Freedman et al. 2006; Gubler et al. 2014).

A comparative study conducted by Promprou, Jaroensutasinee and Jaroensutasinee (2005) on the effect of climate on DHF incidence in Southern Thailand found that rainy days and rainfall were two main factors in the spread of DHF and a warmer temperature was significantly related to DHF transmission. A more recent comparative study conducted by Jury (2008) on the influence of climate variables on dengue epidemics showed similar results. This study investigated the influence of rainfall, temperature and wind speed on dengue cases in a tropical country, Puerto Rico, over the period of 1979 – 2005 and found that rainfall influenced seasonal increase in dengue cases annually and an increase in temperature influenced variability of dengue cases (Jury 2008).

Aedes aegypti is included in the group of mosquitoes that commonly lay their eggs in water containers with firm sides (Ritchie 2014). *Aedes aegypti* and *Aedes albopictus* are two dengue vectors present in Indonesia, but *Aedes aegypti* is the main vector. In rural areas, mosquito-breeding sites are mainly found in medium or large water storage containers and most houses in Indonesia have a cement water container in the bathroom and a smaller container in the water closet (Kusriastuti et al. 2004). Almost all kinds of water containers inside or outside houses are potential mosquito breeding sites. In Indonesia earthen jars, plastic containers, cement tanks and drums are common breeding sites either inside or outside houses (Ishak et al. 1997). This is because most houses do not have tap water, so they use these different kinds of containers to collect water. It has been long known that vacant land, abandoned factories and neglected houses are potential mosquitos breeding sites; ground water, used tyres and used catch-basins usually present in these places can be mosquito-breeding sites (Ho et al. 2013)

Dengue Prevention and Control

Changes in social and cultural environment and the complexity of factors involved in dengue transmission have changed the epidemiology of dengue overtime which indicates the need for an integrating surveillance system and vector control strategies to improve dengue prevention (Dantés & Willoquet 2009). Dengue prevention usually depends on vector control and deterrence of human-vector contact (World Health Organization 2009). The WHO has promoted integrated vector management (IVM), including vector control, considering five key elements: ‘advocacy, social mobilisation and legislation; collaboration within the health sector and with other sectors; integrated approach to diseases control; evidence-based decision making; and capacity building’ (World Health Organisation 2009, p. 59).

In Indonesia, dengue prevention has been conducted and has considerably evolved since the first dengue case was reported in 1968 (Kusriastuti et al. 2004). Indonesian government is responsible for dengue prevention and control program through the Ministry of Health, the Directorate General for Communicable Diseases Control and Environmental Health. The national prevention program of dengue aims to prevent dengue and minimise the rates of morbidity and mortality at family and community levels (Kusriastuti & Sutomo 2005). Indonesia has adopted a dengue prevention approach promoted by the WHO, but not all recommended strategies can be followed in the Indonesian national system. Dengue prevention control is closely related to surveillance systems and several changes in WHO dengue classifications have been made, to which the Indonesian surveillance system have not been adapted (Karyanti et al. 2014). For example, the haemagglutination inhibition test recommended by WHO for dengue diagnosis is not available in Indonesia, thus, the Indonesia surveillance system replaces this test with rapid diagnostic tests for serologic IgM and IgG dengue which were available in the field (Karyanti et al. 2014)

The dengue prevention program that includes dengue surveillance, vector control management and health promotion and education is conducted by public health centres under the coordination of Health Provincial Department and local leaders (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011). Staff of public health centres involved in dengue prevention work in collaboration with community leaders and cadres

(Kusriastuti & Sutomo 2005). Cadres are local people in the community chosen to handle health issues in the community and they work in very close relationship with primary health services (The Ministry of Health The Republic of Indonesia 2005).

Prevention of dengue is conducted through dengue case and vector surveillance, disease management, changing behaviour and capacity building. Vector surveillance is essential to identify insecticide susceptibility levels, risk factors of dengue transmission, main larvae habitats and the distribution and density of dengue vector (Kusriastuti & Sutomo 2005). Public health centres, through a dengue prevention team, conduct larval monitoring every three months to map vector distribution and use this map as evidence to provide health promotion and counselling to people in the community (Kusriastuti & Sutomo 2005).

Interventions for behavioural change are important to mobilise community participation in vector control and maintain a larval free environment. Regarding community participation in vector control, the Ministry of Health of Indonesia has promoted a program which is called '*3M Plus*'. This program includes covering water containers, cleaning water containers, burying discarded containers and using insecticide to combat mosquitos (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011; Kusriastuti & Sutomo 2005).

Nurses' Experiences in Dengue Prevention and Control

There have been numerous quantitative and qualitative studies conducted on dengue prevention with most being quantitative. Quantitative research on dengue has generally examined the role of primary health care workers in the prevention; the attitude, knowledge and practice of healthcare providers; and the knowledge and awareness of the community in dengue prevention (Ang, Rohani & Look 2010; Anima et al. 2008; Bota et al. 2014; Ho et al. 2013) Qualitative studies have concentrated on dengue prevention including different community beliefs and perceptions about dengue prevention, the experience of people with dengue and cultural dimensions inhibiting the prevention (López, Cordero & Estrada 2012; Pérez-Guerra et al. 2009; Wong & AbuBakar 2013; Zuhriyah, Fitri & Al Rasyid 2013). However, there has been no qualitative study on the experience of nurses in implementing dengue prevention strategies in the community.

Some studies have focused on society perceptions of dengue prevention (Ang, Rohani & Look 2010; Toledo-romaní et al. 2006; Wong & AbuBakar 2013; Zuhriyah, Fitri & Al Rasyid 2013). One study indicated the different perceptions of dengue prevention between genders (Zuhriyah, Fitri & Al Rasyid 2013) and other studies focused on the perception of dengue prevention among people in the community and amongst specific age groups (Ang, Rohani & Look 2010; Wong & AbuBakar 2013). A study, conducted by Toledo-Romaní et al. (2006), investigated the perceptions about dengue prevention from a societal viewpoint and from the health professionals' point of view.

Toledo-Romaní et al. (2006) conducted a qualitative study of perceptions about community participation in dengue prevention in Cuba from the viewpoints of health professionals, community leaders and people in community. They collected data through interviews with the health professionals, community leaders and 200 people living in the community. Toledo-Romaní et al. (2006) found that health professionals perceived that difficulties in dengue prevention were related to a lack of community knowledge and participation; the community leaders considered that people in the community had poor motivation to participate in the prevention; and people in the community considered that the responsibility in preventing dengue lies with the health professionals.

Zuhriyah, Fitri and Al Rasyid (2013) conducted a qualitative study on the perspectives of males and females regarding DHF prevention in urban areas in Malang, East Java. Data was collected through interviews with public health centre staff, focus group discussions with community leaders and observation, and was analysed using triangulation method (Zuhriyah, Fitri & Al Rasyid 2013). Results showed different opinions between males and females regarding methods used to prevent dengue, although they had similar opinions regarding DHF. The female perspective was that draining, covering and burying are more effective and efficient ways to prevent dengue, while males preferred to use fogging as a preventive measure. Males also had a greater expectation regarding the roles of public health centre nurses in terms of dengue prevention (Zuhriyah, Fitri & Al Rasyid 2013). This study also found that common problems related to DHF in the community were a lack of people participating in dengue prevention and the presence of empty houses or neglected lands with lots of garbage (Zuhriyah, Fitri & Al Rasyid 2013).

Another qualitative study on dengue prevention from a societal viewpoint was conducted by Wong and AbuBakar (2013). This study explored the meaning of dengue fever and dengue prevention for people who live in a dengue endemic area in Malaysia and their treatment-seeking behaviour. They collected data through semi structured focus group discussion with 84 people. Wong and AbuBakar (2013) found that some participants view dengue as a fatal disease, which is difficult to cure, although they did not know how dengue can cause death, while some others discerned that dengue is easily curable. Regarding dengue prevention methods, this study found that most participants prefer non-chemical or natural techniques to eradicate and repel mosquitoes. However, the findings also showed that most participants did not continuously change stagnant water in flowerpots and other mosquitos breeding sites. In terms of peoples' knowledge, participants with previous experience of dengue had relatively more knowledge than those who never had dengue (Wong & AbuBakar 2013).

The majority of articles found, as a result of the literature search, investigated dengue prevention from the viewpoints of the community living in dengue endemic regions and very few studies examined the issue of dengue prevention from the nurses' or the health professionals' point of view.

A cognitive anthropological study on cultural dimensions which hinder or help the prevention of dengue in Mexico was conducted by López, Cordero and Estrada (2012). This study investigated the issue of dengue prevention from the point of view of health professionals by purposively selecting respondents from health care professionals in Mexico and asking them to talk about a written list of terms related to the word dengue (Torres-López, Soltero-Avelar & Herrera-Pérez 2012). This study found three dimensions that hinder dengue prevention, including inadequate and confusing information about dengue, peoples' reliance on public organisations for prevention and over reliance on fumigation as a safety measure (Torres-López, Soltero-Avelar & Herrera-Pérez 2012). The prevention of dengue is focused on cleaning and the use of chemical fumigation to eradicate mosquitoes (Torres-López, Soltero-Avelar & Herrera-Pérez 2012).

Generally, there are two main groups of actors involved in dengue prevention: people in the community at risk of contracting the disease and health professionals with

professional responsibility to help the community prevent the disease. These two groups work in collaboration in disease prevention and control (Giltenane, Kelly & Dowling 2015). To gain a comprehensive understanding of issues regarding dengue prevention, studies focus on these two groups are very important to provide a balanced perspective of the issues. Numerous research projects have focused on community participation in dengue prevention, in either qualitative or quantitative research, but there is still limited research focused on the nurse or the public health nurse perspective or viewpoints. As indicated by Joyce (2015), an understanding of how nurses experience their roles and the value that can be learnt from this experience is largely absent from the literature. This indicates the need to conduct a study on the lived experience of nurses in implementing dengue prevention strategies in the community.

Conclusion

This chapter provided a review of previous studies related to the study topic showing that there has been no previous study on the lived experience of nurses implementing dengue prevention strategies in the community. As mentioned above, the majority of previous studies focused on dengue prevention examined the issue of the prevention from the perspective of actors involved in dengue prevention other than nurses. There has been limited study undertaken investigating health professionals' perceptions about community participation in dengue prevention, but the literature does not convey the experience, memories and feelings of the health professionals implementing dengue prevention. This study is therefore intended to address this gap in knowledge.

CHAPTER THREE – METHODOLOGY

Introduction

This qualitative study employed an interpretive phenomenology approach to explore nurses' experience of applying dengue prevention strategies in the community. The phenomenological approach allows the researcher to uncover meaning or identify the impact of a phenomenon and provide a comprehensive description useful to develop a thorough understanding (Whitehead 2013). The focus of phenomenology is on defining meanings of peoples' entity and how the meanings guide the decisions they make, rather than merely describing categories of peoples' experience (Flood 2010). An interpretive approach allows the researcher to explore and understand the meaning of a phenomenon, rather than just explain the phenomenon itself (Mackey 2005). This approach enables the researcher to study participants in an uncontrolled natural setting and utilise embedded knowledge in the experience (Mackey 2005).

Methodology and philosophical basis is very important in a qualitative study to guide the researcher to determine an appropriate approach to data analysis (Mackey 2005). In line with the study aims and the research question, the phenomenological approach employed in this study was based on the philosophical structure established by Heidegger. The Heideggerian hermeneutic phenomenological approach was considered suitable for this study because of its focus on the situation of an individual related to the lived experience and towards the understanding of a person's existence in their world (Whitehead 2013).

Heidegger proposed that people cannot be detached from the world and their existence means that they always have interactions and relationships with their surroundings, which later develop the presence of the phenomena in the human lived experience (Converse 2012; James & Chapman 2009; Mackey 2005). This idea is in line with the assumption that nurses' experience of implementing dengue prevention program is formed and shared through interactions and relationships between nurses and the community. This method, therefore, enables the nurses' experiences in the prevention of dengue to be explored and lead to understanding about the meaning of the phenomena and comprehensive knowledge about the value of the experience. Further discussion around this methodology and its relationship to this study is presented in the following sections.

Phenomenology

The word phenomenology originated from the Greek *phaino* meaning ‘to bring into the light, to place in brightness, and to show itself in itself...’ (Moustakas 1994, p.26). The word phenomenon comes from the Greek *phaenesthai* which has a close meaning to ‘to flare up, to show itself or to appear...’ (Moustakas 1994, p.26). Currently phenomenology is defined as an approach to examine the in-depth meaning of a phenomenon, beyond what appears to be seen or heard (Fleming, Gaidys & Robb 2003 ; Pringle, Hendry & McLafferty 2011).

Hints of the philosophical origins of phenomenology can be found through the prehistoric platonic symbol of the cave (Converse 2012). The ancient symbols showed that people understand the reflection of phenomena of genuine reality as true reality, although the phenomena of the reality and reality itself are two separate things (Converse 2012). A German philosopher, Immanuel Kant, stated that ‘phenomenon is something that appears in the human mind – the thing as it exists in reality is separate and not perceptible by human senses...’ (Converse 2012, p. 29).

In contrast to traditional empirical methods, phenomenology emphasises that the world or the reality that is lived by an individual is not separate from the individual (Lavery 2008; Valle, King & Halling 1989). The intention of a phenomenological investigation is to comprehensively portray a person’s lived experience of a certain phenomenon and emphasise that the person who can speak about it is only those who have experienced the phenomena and thus, reveal the meaning of the experience (Roberts, T 2013; Todres, L & Holloway 2004).

Instead of seeking to generate empirical data, the phenomenological approach aims to uncover the richness, depth and distinctiveness of a person’s lived experience (van Manen 1997). Phenomenology focuses on consciousness and the essence of conscious experience, including individual perceptions, feelings and judgements (Balls 2009; Connelly 2010). Therefore, it can be summarised that the phenomenology is a research approach that aims to truthfully interpret the lived experience of a person in relation to particular phenomena under study (Balls 2009).

The purpose of this research was to explore and interpret the lived experience of nurses working in a public health centre who have been involved in a dengue

prevention program. Phenomenology as a research approach employed in this study provided the opportunity for the researcher to understand nurses' experience of the particular phenomena by studying the experiences of the nurses facilitating dengue fever prevention programs. Thus, providing a comprehensive understanding of the phenomena promoting more meaningful care.

Foundation and Development

The history of phenomenology development is long and complex potentially making it challenging for some researchers to understand (Converse 2012). Phenomenology developed as a philosophy before World War I in Germany and since then has become very common in modern philosophy (Dowling 2007). In the 19th century, a psychologist, Franz Brentano, developed the notion of descriptive phenomenology and stated that 'intentionality is the principle that every mental act is related to some object, it refers to the internal experience of being conscious of something...' (Dowling 2007, p. 132). This principle of intentionality was later adopted by Husserl, who is considered to be the founder of phenomenology, as the basic concept to comprehend and categorise conscious acts and experiential mental process (Converse 2012; Dowling 2007).

In its evolution, phenomenology provides a methodological structure used to assist the researcher to explore human experience as part of a person's world (Converse 2012; Crotty 1996; Lavery 2008; Mackey 2005). The movement of phenomenology started in 1913 by Edmund Husserl (Converse 2012). However, a strong impetus of this movement emerged in the '70s with an increasing number of questions in the human realm that could not be answered through empirical approaches that involve measurement, control and prediction, as these questions required an emphasis on the meaning and description (Converse 2012; Klein & Westcott 1994; Lavery 2008). Lavery (2008), portrayed this as a 'crisis of value' where the conventional systems of logic and power cannot be utilised to resolve the crisis. This description could be assumed as a critique of traditional empirical research methodology that inclines towards the separation of individuals from reality, and further gave rise to phenomenology as a research method (Koch 1995; Lavery 2008).

There are two main phenomenological approaches that can guide researchers in conducting phenomenological study: descriptive phenomenology developed by

Husserl and interpretive phenomenology developed by Heidegger, one of Husserl's students who improved on Husserl's work (Connelly 2010; Wojnar & Swanson 2007). It is very important for an investigator to select the most appropriate method to address the research question and the researcher's perspective. This selection could be difficult, although it might be obvious to a researcher when a phenomenology is well matched to the topic of study (Wojnar & Swanson 2007). Description of the assumptions and philosophical basis of the two approaches are discussed in the following paragraphs.

Husserlian Phenomenology

Edmund Husserl (1859 – 1938) was a German philosopher and mathematician who laid a foundation for phenomenology as a philosophy and a descriptive approach, that later made him considered as the founder of phenomenology (Converse 2012; Lavery 2008; Tymieniecka 2014; Wojnar & Swanson 2007). Initially, Edmund Husserl focused on mathematics, but his interest was in philosophy and psychology predisposed his choice to study philosophy from Franz Brentano and interested in pure phenomenology (Lavery 2008). His critique to psychology stated that as a science, psychology made a mistake by trying to apply natural sciences methods to human topics, because human reaction to external stimuli is the result of their response to their own perception of the meaning of these stimuli, instead of a simple automatic reaction to the stimuli (Lavery 2008; McConnell-Henry, Chapman & Francis 2009). Thus, it is important to researchers obtaining a comprehension of human motivation and using scientific approach to uncover the fundamental elements of people's lived experience (Flood 2010).

Husserl focussed mainly on the study of 'phenomena as they appeared through consciousness...' and perceived consciousness as a co-compounded dialogue between an individual and the world (Lavery 2008, p. 22). Husserl saw that the initial point to build a person's knowledge of reality was conscious awareness and a description of certain realities could be developed by intentionally guiding a person's focus (Lavery 2008; McConnell-Henry, Chapman & Francis 2009). Koch (1995) stated that Husserl regarded intentionality and substances as the key to understanding phenomenology. Lavery (2008) described this process as substances that enable one to identify an

object as a particular type of entity or experience that is distinct from others (Lavery 2008).

Husserl considered experience as the essential source of knowledge (Dowling 2007; McConnell-Henry, Chapman & Francis 2009). His view was that the only way to reveal the meaning of lived experience is through one-to-one contact between the investigator and the investigated object involving interaction, listening and observation to make the reality appear more sophisticated than initial understanding (Wojnar & Swanson 2007).

According to Husserl, the purpose of phenomenology is to rigorously study an object and their appearance free from bias, so as to attain an essential comprehension of the experience and the human consciousness (Dowling 2007). He claimed that ‘the ‘lifeworld’ (lebenswelt) is understood as what individuals experience pre-reflectively, without resorting to interpretations. Lived experience involves the immediate, pre-reflective consciousness of life...’ (Dowling 2007, p. 132). Therefore, a phenomenon should be understood from within and described as its original form that immediately appears to our consciousness before any explanations can be imposed (Dowling 2007). This point is the key to develop an understanding of Husserlian phenomenology.

The term ‘natural’ is used by Husserl to refer something that is original, naïve and without previous theoretical or critical impression (van Manen 1990). In order to perceive the natural description of phenomena, *epoche* is required (Moustakas 1994). *Epoche* means ‘to refrain from judgement or stay away from the everyday, commonplace way of perceiving things...’ (Dowling 2007, p. 132). Husserl proposed that:

One needed to bracket out the outer world as well as individual biases in order to successfully achieve contact with essences. This is a process of suspending one’s judgement or bracketing particular beliefs about the phenomena in order to see it clearly (Lavery 2008, p. 23).

This concept proposed by Husserl is described as phenomenological reduction or bracketing. Bracketing means that researchers are required to yield all prior personal knowledge about the phenomena under study to prevent influence of personal biases and pre-conceptions and to maintain scientific rigour (Flood 2010). According to

Valle et al. (1989) literally the term 'reduction' in phenomenological reduction means that the world as it is perceived in the knowledge and judgment of a person is reduced to a virtuously phenomenal realm (Dowling 2007). This definition includes the phenomenologist to perceive the phenomenon free from prejudice as much as possible so that the phenomenologist can describe and understand the phenomenon accurately as it presents itself (Dowling 2007).

According to Polkinghorne (1983) as cited by Dowling (2007), there are two steps of the bracketing process in phenomenological reduction based on Husserl's work. Dowling (2007, p. 132) described the first step as 'free (imaginative) variation, which leads the researcher to a description of the essential structures (essence) of the phenomena, without which it would not exist...' The essence is the essential structure of a thing that makes it like it is and could not be what it is without this structure (van Manen 1990). The second step is to focus on the existing experience itself and define how the specific experience is assembled (intentional analysis) (Dowling 2007).

In line with the purpose of this study, the phenomenological approach can be used to illuminate the experience of nurses working in PHC implementing dengue prevention strategies in the community. However, Husserlian phenomenology that includes bracketing in his approach does not allow the researcher to involve prior knowledge and opinion in understanding and interpreting the meaning of the particular phenomena. Although the researcher is currently working in a hospital and has never worked in PHC or been involved in dengue prevention team the researcher has prior experience working with the community and providing counselling about dengue prevention to DHF patients and their families within the hospital environment. This makes it difficult for the researcher to suspend prior knowledge and experience in this study. Therefore, Husserlian phenomenology approach was considered unsuitable for this study.

Heideggerian Phenomenology

One of Husserl's students, Martin Heidegger, proposed an alternative approach of phenomenology that arose from his critique of Husserl's work. Martin Heidegger (1889 – 1976) is also a Germany philosopher concerned with the human experience as it is lived (Dowling 2007; McConnell-Henry, Chapman & Francis 2009). However,

unlike the philosophy of Husserl that is strongly focused on epistemology, Heidegger's philosophy is more focused on an ontological approach (Mackey 2005). Heidegger confronted the concept of pure phenomenology constructed by Husserl claiming that it is impossible to present a pure description about experience without interpretation either in the manner in which it was articulated, recorded or restated (Heidegger, Stambaugh & Schmidt 2010; Mackey 2005).

Heidegger claimed that consciousness is not distinct from the world where humans exist and proposed an existential modification to the interpretation of essential structures as fundamental classifications of human experience, rather than merely as a logical consciousness (Dowling 2007; Lavery 2008). Heidegger initiated interpretation as a model and method of phenomenology to reveal understanding of the meaning of 'being' as 'hermeneutic', defining it as a process of interpretation rather than description (Mackey 2005, p.181). Heidegger's view was that it is not the essence of the particular phenomena that should be unfolded, but the being of the phenomena that refers to the meaning of the phenomena (van Manen 1990). According to van Manen (1990) the term 'being-in-the-world' was used by Heidegger to assign the way human beings exist, act or are involved in the world (Dowling 2007, p.133).

Heidegger (1962) claimed that a researcher is temporally aware of being-in-the-world and in time of the participant experience and the research question (Mackey 2005; McConnell-Henry, Chapman & Francis 2009). Thus, it can be assumed from Heidegger's concept that the researcher is open and upfront with their viewpoint (McConnell-Henry, Chapman & Francis 2009, p. 9). In contrast to the concept proposed by Husserl about intentionality that separates humans from the world, Heidegger promoted the term 'dasein' which is defined as 'the entity that allows humans to wonder about their own existence and question the meaning of their being-in-the-world...' (McConnell-Henry, Chapman & Francis 2009, p. 9). Furthermore, Heidegger views can be described as follows:

Understanding is never without presuppositions. We do not, and cannot, understand anything from a purely objective position. We always understand from within the context of our disposition and involvement in the world (McConnell-Henry, Chapman & Francis 2009, p. 9).

In relation to this study, Heideggerian phenomenology allows the researcher to build a

profound understanding of the participants' world by 'being-in-the-world' of nurses' working in PHC who are involved in dengue prevention through listening to their narratives and fusing the researcher's prior knowledge and experience to interpret the embedded meaning of the phenomena. This phenomenological approach was considered suitable for the purpose of this study, because the exploration of the participants' experience results in the essence of phenomena, rather than just a description of the phenomena. This process of interpreting the meaning of phenomena is known as hermeneutics.

Hermeneutic Phenomenology

Osborne (1994) as cited by Flood (2010, p. 4) described hermeneutic phenomenology as an approach to 'investigate and describe a phenomenon as experienced in life through phenomenological reflection and writing, developing description of the phenomenon that leads to an understanding of the meaning of the experience...' Heidegger claims that the process of understanding phenomena is a complementary action and offered the theory of 'hermeneutic circle' to demonstrate this exchange (Dowling 2007). Heidegger argued that a researcher could only conduct a hermeneutic investigation by having certain prior knowledge or fore-structure to ensure validity of research question (McConnell-Henry, Chapman & Francis 2009). Moving back and forth in questioning and re-assessing the text is a circular process of growing ideas about the meaning of phenomena and is termed hermeneutic circles (McConnell-Henry, Chapman & Francis 2009).

The hermeneutic circle can also be described as circular movement from the entire part to the fragments, combining all contributions from the process of deconstruction the whole, then reconstructing all the parts to get shared understanding (McConnell-Henry, Chapman & Francis 2009). In this study, the hermeneutic circle was utilised to build understanding about participants' experience by moving between experience of each participant and viewing the experience of participants as a whole story as well as including the researcher's own insights when interpreting the meaning of phenomena. Gadamer (1976) explains this process as fusion of horizon in which the horizon refers to the background of numerous perceptions, ideas, assumptions and experience that are flexible and changeable (Dowling 2007; Flood 2010; McConnell-Henry, Chapman & Francis 2009). Therefore, building understanding of others is influenced

by one's personal horizon and 'the art of interpretation is always bounded by the separate, intersecting horizons of researchers and participants...' (Flood 2010, p. 10).

Hermeneutics is 'the study of the interpretation of texts to obtain a valid and common understanding of their meaning that is assisted by entering the hermeneutic circle...' (Flood 2010, p. 12). Interpretation theory proposed by Ricoeur (1971) specified three steps to enter the hermeneutic circle namely: 'naïve reading, structural analysis and comprehensive understanding or interpreted whole' (Flood 2010, p.12). The three steps for entering hermeneutic circles are discussed below.

Naïve reading

In naïve reading the researcher reads the transcripts several times to determine the embedded meanings. The term 'naïve' refers to the process when a researcher remains open to the text, to let the text speak and have a dialogue with the text in order to grasp immediate understanding of its meanings (Dreyer & Pedersen 2009; Lindseth & Norberg 2004).

Structural analysis

In the structural analysis step the researcher interprets the meanings of the text obtained from the initial naïve reading step. According to Ricoeur (1973), 'what has to be interpreted in a text is what it says and what it speaks about' (Dreyer & Pedersen 2009, p. 68). This shows that the activity of interpretation involves the protrusion of the researcher's own prejudice into the text as the fusion and horizons. Firstly, a researcher interprets what was said in the text, and then interprets what construct the theme said in the text and finally, the researcher makes an interpretation of themes that relate to both what was said by the text and the theme constructed of what the text speaks about (Dreyer & Pedersen 2009). In these interpretations analysis moves back and forth from the parts to the whole and between explanation and apprehension in a hermeneutic circle. This process results in development of subthemes and main themes.

Comprehensive understanding (interpreted whole)

To develop comprehensive understanding the main themes and sub-themes are summarised and emulated on the whole context of the study, including the research question. In this step, the text is read again as a whole with an open mind and

critically reflects the pre-understanding to revise, expand and strengthen the researcher's consciousness of meaning embedded in the experience (Lindseth & Norberg 2004).

Phenomenology in Nursing

Since the 1970s, phenomenology has been accepted in nursing research and utilised by many nursing researchers in their endeavour to investigate and understand patients' experiences (Anderson 1991; Crotty 1996; Paley 1998; Todres, Leslie & Wheeler 2001). Many nursing researchers have realised that interpretive approaches are more likely to unveil the complexity and diversity of nursing knowledge compared to a positivist approach (Mackey 2005; Taylor 1993). This is because interpretive phenomenology enables the researcher to understand rather than just explain a particular human phenomenon in a naturally uncontrolled setting (Mackey 2005). Interpretations made by the researcher could help nurses to utilise the knowledge embedded in the phenomenon and develop strategies for better practice.

Phenomenology has been considered as a valid methodology in nursing science as it offers a means to study and understand a human phenomenon or the lived experience of patients and nurses (Flood 2010). Compared to quantitative studies, a phenomenology study provides a more appropriate concept for the nature of research questions in clinical nursing practice (Beck 1994). Phenomenology and clinical nursing practice may be considered parallel as both focus on observing, interviewing, interacting and trying to understand peoples' experiences (Beck 1994). Various activities commonly performed in clinical nursing practice, such as assessing patients through observation and interviews to develop understanding to the meaning of patients' experience with medical treatment and their illness, are a close fit with the phenomenological approach. Thus, phenomenology is considered a suitable approach for understanding the patients' experience.

Despite an increasing number of nursing studies utilising a phenomenology approach, there is now a growing concern regarding the nurse researcher embracing a phenomenological approach without laying the philosophical foundation underpinning the methodology, whereas, inappropriate adoption of a phenomenological approach towards a specific research question can lead to misuse

of methodological philosophies (Mackey 2005). A number of dilemmas and difficulties faced by nurse researchers in utilising phenomenology as a research approach include misunderstandings about the approach, ambiguities in guidelines about applying phenomenology and lack of clarity on different methodology terms (Dowling 2004; Pringle, Hendry & McLafferty 2011). In this research, description of the congruity between the research question with research methodology and philosophies underpinning it was provided through explaining the reason why interpretive phenomenology is suitable for this study and how to apply this approach.

Rigour in Qualitative Research

Rigour in qualitative research remains an important issue discussed in recent literature (De Witt & Ploeg 2006; Koch 2006; Tuckett 2005). Rigorous qualitative research is described as research considered to be truthful and accurate by those who have not been involved in the study (Sanders 2003). In interpretive phenomenology enquiry, researchers aim to understand the depth and richness of the meaning of specific phenomena; hence they are expected to show they have followed a rigorous process throughout the study (De Witt & Ploeg 2006). Thus, the researcher needs to remain truthful and focus on the phenomena and its interpretation.

Maintaining rigour in research is important to ensure accuracy of research findings and integrity of conclusions or assumptions made because insignificant findings or findings which are incorrect can lead to wasted effort and time as well as implementation of unsafe practice (Long & Johnson 2000). Traditionally, evaluation of studies has focussed on assessment of reliability and validity which appears to be inapplicable for qualitative enquiry (Long & Johnson 2000). Many scholars use the term '*dependability*' as a more appropriate concept than reliability for qualitative research (Hall & Stevens 1991; Koch 2006; Robson 2011; Sandelowski 1986), while '*credibility*' was adopted as an alternative validity (Guba & Lincoln 1989).

Hammersley (1992) indicates that there is considerable misperception among researchers of the criteria for rigorous research and how to evaluate the criteria in qualitative research (Long and Johnson 2000). Further, Long and Johnson (2000) elaborate the common means to evaluate the criteria of reliability, which include audit trail and triangulation. Audit trail, first recommended by Sandelowski (1986),

includes detailed description of all data sources, data collection techniques, assumptions and decisions made, meanings formulated and interpreted and influence on the researcher. Triangulation commonly refers to ‘the employment of multiple data sources, data collection methods, or investigators’ (Long and Johnson 2000, p. 34). The evaluation for the criteria of validity or credibility in qualitative research could include self-description and reflective journal keeping, respondent validation, prolonged involvement, persistent observation, peer debriefing and triangulation (Long and Johnson 2000, p. 33).

Conclusion

Phenomenology is utilised in nursing research to investigate the meaning of human lived experience and to understand the perspective of participants in their own environment. An overview of phenomenology, its development and its application to was discussed in this chapter. The congruity of Heidegger philosophy and interpretive hermeneutic approach with the research question has been provided to justify the reason of employing this approach as a philosophical methodology underpinning this research.

CHAPTER FOUR – METHODS

Introduction

This chapter details the methods employed in this research to represent the experience of nurses working in Public Health Centres implementing dengue prevention strategies in the Indonesian community. In a phenomenological study, there is no generally accepted method for data analysis, but van Mannen (1990, p.28) states that ‘a certain mode of inquiry is implied in the notion of method...’ This statement acknowledges the presence of possible methodical steps in exploring essential meanings of the phenomena. This chapter provides description of the study setting, participants and data collection techniques. Finally, the systematic steps followed in data analysis, ethical considerations and rigour are discussed.

Study Design

In this research the data collection method was semi-structured interviews. The interviews were conducted to encourage discussion about the experiences of participants in implementing dengue prevention strategies. The participants’ ability to remember and recall experiences of implementing dengue prevention strategies in the Indonesian community was important to the success of this research. The interpretive hermeneutic methodology based on the work of Heidegger was utilised to understand the unique experience of participants. A stepwise process of data analysis modified from Colaizzi’s (1978) strategy for phenomenological data analysis was conducted to illuminate the participants’ lived experience.

Although the Colaizzi’s (1978) method is commonly selected by researchers who employ Husserl’s phenomenology, this method is also considered to be appropriate for Heideggerian phenomenological research (Fleming, Gaidys & Robb 2003; Hodges, Keeley & Grier 2001; Perreault, Fothergill-Bourbonnais & Fiset 2004; Rashotte, Fothergill-Bourbonnais & Chamberlain 1997; Thornton & White 1999). The steps of Colaizzi’s method involve the researcher formulating meaning, integrating findings into an exhausted description and comparing it against the participants’ experience which indicates that ‘interpretation is acknowledged rather than just description’ (Dowling 2007, p. 135). As presented by Thornton and White

(1999, p. 268), Colaizzi's (1978) strategy for phenomenological data analysis includes the following steps:

1. *The texts, or protocols were read several times to achieve understanding.*
2. *Significant statements were extracted after identification of phrases that were directly concerned with the phenomenon, plus identification of any repetitions.*
3. *Meanings were formulated from the significant statements, using creative insight to move from what participants said to what they meant. Hidden meanings were also sought without moving away from the original data.*
4. *Meanings identified were grouped into clusters of themes, allowing for emergence of themes common to all protocol. Validation was achieved by referring themes back to the original protocols to identify anything missing, or themes extra to the protocols. No discrepancies were found. There was some overlapping, or interweaving, but no contradictions. Data not fitting into themes were entered into a miscellaneous section.*
5. *A comprehensive description of the study findings was extracted from the results.*
6. *An exhaustive statement of study findings was then formulated*
7. *A final validation step was performed by returning the protocols to the participants. This allowed them to identify any discrepancies, confidentiality was reinforced, and subjects were able to have any sensitive data removed.*

Study Setting

The setting for this research was Public Health Centres (PHCs) in Mataram Regency, West Nusa Tenggara Province, Indonesia. An Indonesian PHC is a health care facility that organises health efforts for the public within a district; it puts emphasis on health promotion and disease prevention to achieve the highest status of public health in its working area (The Ministry of Health The Republic of Indonesia 2014). There are two types of PHCs: PHCs that do not provide services for hospitalisation (non-hospitalisation) and PHCs that are given additional resources to carry out service for hospitalisation, in accordance with the needs of the health service.

There are eleven PHCs in Mataram Regency. Every PHC is responsible to provide health services and support for the development of public health for one or two districts. This research was conducted in two PHCs, namely Taliwang PHC and Mataram PHC. Mataram PHC is a non-hospitalisation PHC, while Taliwang PHC is a PHC that provides hospitalisation service. These two PHCs were selected because their working boundaries include urban and rural areas where dengue cases are mostly found and because their location was easily accessed.

Participants

Participants in this research were nurses working in the PHCs who had been involved in dengue prevention programs. They were responsible and had been involved in disease prevention including dengue prevention within the working region of the PHC. The participants were purposively recruited based on the following inclusion and exclusion criteria:

Inclusion criteria

Nurses working in the PHC who:

- Had been involved in at least one period of dengue prevention program.
The dengue prevention program is conducted by a PHC in one or two time periods in a year. The program is usually conducted during the rainy season, when the risk of dengue fever increases due to changing seasons. This inclusion criterion allowed the researcher to determine differences in experiences between nurses who have only been involved in one period and nurses who have involved in more than one period of the dengue prevention program.
- Had been involved in at least one period of dengue prevention program in the last two years (from 2014-2015).
This criterion was assigned with the consideration that nurses involved in dengue prevention program in the last two years are likely to be able to recall and recount their experience.
- Were willing and able to be interviewed to share their experiences

Exclusion criteria

Nurses working in the PHC who:

- Had no experience in dengue prevention
- State that they could not recall their experience
- Did not want to participate and did not sign the consent form

Recruitment Strategies

The researcher met with the heads of PHCs, and then showed the letter of permission (Appendix 1) to collect data from Environmental and Research Agency (ERA) and briefly explained to them about the research. Further, the researcher provided information sheets (Appendix 3) attached to letters of invitation (Appendix 2) and consent forms (Appendix 4), which were translated into Indonesian by the researcher. This translation was checked by an academic colleague who speaks both English and Indonesian. The translated letters and information sheets were given to the heads of PHCs to be distributed to their staff. Hence, the initial contact with potential participants was conducted by the heads of PHC instead of the researcher. When the heads of PHCs met with the potential participants, they explained that their personal details such as name, email address and phone number had not been provided to the researcher. Potential participants who were interested in participating directly contacted the researcher by phone and some of them asked to directly meet with the researcher in the PHC.

The researcher provided further information about the research to the potential participants who had contacted her. Further, every potential participant who agreed to participate was provided with a consent form to be signed. After they signed the consent forms, the researcher obtained their personal details including names, personal phone number and email address. The researcher and the participants then made an appointment to conduct an interview.

Initially, seven nurses agreed to participate in this study, but one nurse had to go to another province to attend training and another nurse cancelled participation. Although a small number of participants were included, it was considered sufficient for this study because essentially, the focus was on the richness and the depth of data collected, not the number of participants. Unlike quantitative studies, in qualitative studies the sample size used is commonly small because qualitative research aims to find meaning and not generalise hypothesis statements (Crouch & McKenzie 2006; Mason 2010). For a homogeneous group of participants, five to eight participants commonly appear as sufficient (Holloway & Wheeler 2010).

The researcher did not identify new concepts to develop themes or subthemes important for the research topic when conducting the fifth interview, which means

that data saturation was achieved. Data saturation refers to a state in data collection when there is no new issue or additional data shed to develop a concept or category (Francis et al. 2010; Mason 2010). The concept of data saturation is essential as it indicates whether the sample size in an interview study is adequate for content validity (Francis et al. 2010). According to Lopez and Whitehead (2013), in qualitative research it is essential to manage a sample size that is adequate to ensure richness of data and to reach data saturation and avoid too large sample size that makes it difficult to obtain in-depth meaning of the particular phenomenon being investigated. Therefore, the five participants included in this research were considered to be the best people to describe their experience and show the depth of the meaning of the phenomenon being studied.

Ethical Considerations

Prior to this study, ethics approval was obtained from the Human Research Ethics Committee of the University of Adelaide (Appendix 6) and permission to conduct research was granted by the Environmental and Research Agency of West Nusa Tenggara Province, Indonesia (Appendix 7). The two bodies considered ethical issues related to this study, including voluntary and autonomy, anonymity, confidentiality and beneficence, to ensure that no harm was imposed on study participants and the researcher. Participants were informed and reminded that their participation was voluntary and that they have full autonomy to sign the consent form without any coercion after being given comprehensive information about the study.

In a study that collects data through interview, participants may feel discomfort if certain questions induce anxiety, sadness, fear or guilt (Wood & Schneider 2013). This research is low risk research and it was not anticipated that there would be risks of discomfort to participants posed by the interview. However, participants were reminded that they were free to decide not to answer any particular question and would be given the option to cease the interview if they experienced distress and the researcher would advise the participants to talk to the PHC manager. Participants were assured that they would be allowed to withdraw from participation in the study at any time if their participation was likely to cause harm to them. They were reminded that their withdrawal from this study would not affect their relationship with other PHC nurses and their careers in PHC at the present time or in the future.

Participants were informed that the researcher would take all measures to ensure privacy and confidentiality. The interviews were conducted in a private room in a PHC and no personal details such as the names, personal phone number and email address of participants were recorded. Participants were given pseudonyms. Interview recordings were stored in a password protected digital file on the researcher's laptop while in Indonesia and only the researcher and supervisors have access to the file. Recordings were transcribed and translated into English by the researcher. A translator was employed to translate the English transcript back into Indonesian and check the original Indonesian transcript alignment with the back translation after signing a confidentiality agreement to maintain privacy.

Signed consent forms were stored in an enclosed envelop in a locked cabinet of the researcher's room while in Indonesia and was stored in a locked cabinet of the supervisor's office at the University of Adelaide in Australia while this study was being completed. On the completion of this study, the signed consent forms were scanned and stored with digital transcripts of the interview in a password protected digital file in Health Sciences/Nursing server up to a period of five years, while the original consent forms, the recording and the transcripts were destroyed.

Data Collection

Data in qualitative studies is commonly collected through an interview to provide evidence for the investigated experience (Polkinghorne 2005). The researcher plays a central role to guide the interview to encourage participants to be engaged and remember their experience. As stated by Sorrel and Redmond (1995), the researcher is the key instrument to be able to integrate what participants say to their expression, which is observed throughout the interview by using a good interview technique.

Interviews with study participants were conducted in Indonesian in a room that is usually used as counselling room in the health centres. Interviews were recorded using two digital recorders to prepare spare equipment just in case of an equipment error or failure. The researcher asked the participants open-ended questions to encourage discussion about their experiences implementing dengue prevention strategies. Questions such as 'you have been involved in dengue prevention for more than eleven years, what is it like to be involved in dengue prevention?' were asked. Some important words used by participants were then utilised to reveal the

interrelationship of information they presented. The researcher used probing questions such as ‘you previously mentioned monitoring, developing and involving cadres in the prevention program, could you please explain more about your experience doing this?’ to restate what a participant had said and encourage them to talk more about their experience.

In addition to audiotaping the interviews, the researcher also made written notes. By using field notes, the researcher gets direction to seek further clarification from the participants in order to gain comprehensive expression of their experience (Groenewald 2004). In the field notes, the researcher recorded the stories of participants, important or significant information and emotions of participants including their voice tone, facial expression and body language.

The researcher transcribed all audiotape records of the interview and asked the participants if they wanted to read the Indonesian transcript and the field notes. This helped to ensure the trustworthiness of the data. All participants were happy with the transcripts and the field notes. The researcher translated the Indonesian transcripts into English. In order to ensure the integrity of the data, after signing a confidentiality agreement a translator who speaks both languages translated the transcripts back into Indonesian and checked the original Indonesian transcript alignment with the back translation. The differences between the two translations were discussed by the researcher and the translator to decide the most suitable English translation for the transcription. The fact that the researcher understands the transcripts in both languages, also help ensure the integrity of the data and the credibility of the interpretation made from data analysis.

Data Analysis

In conducting qualitative data analysis researchers attempt to immerse themselves in the data as much and for as long as possible to assist them to accurately interpret the participants’ lived experience (Sorrell & Redmond 1995). In this study, the researcher data immersion was achieved by repeatedly listening to interview recordings promptly after each interview to become familiar with the data and gain an awareness of the participants’ experience. The researcher transcribed the interview recordings not long after each interview while the conversation was still fresh in the researcher’s memory to make it easier for the researcher to fill in the gaps for any unclear words.

Transcribing the interviews allowed the researcher to become more immersed into the data and gain more detail and further insight about the experience. Interview transcripts, both Indonesian transcripts and English transcripts, were read and reread several times by the researcher in order to ensure integrity of data and accurately acquire the sense of each transcript. Following this step, the researcher identified and highlighted significant statements of the participants. Colaizzi (1978) suggests that significant statements from the participants that form the exhaustive meaning of the participants' experience should be extracted. The researcher extracted the significant statements from the transcript and pasted them on to a separate sheet retaining the transcript page and line number.

The researcher attempted to understand and develop an insight of what the participants said and utilised this comprehension and insight along with prior knowledge to interpret what the participants meant. This step allowed the researcher to reveal the hidden meanings and formulate meanings from the significant statements. The significant statements and formulated meanings were returned to the research supervisors to crosscheck the extracted statements with the transcripts and decide on the final list together with the researcher. This step supported the clarity of the interpretive process conducted by the researcher and ensured the rigour throughout the process.

Formulated meanings from the significant statements were pooled into subthemes, which were further grouped into themes. This step also involved the researcher and supervisors to refer the themes back to original transcripts and identify overlapping or interweaving ideas and contradictions for validation purposes before final themes were decided. Descriptions of the themes were then developed and presented in narrative form along with exemplars of participant statements from which the themes emerged.

The final steps of Colaizzi's (1978) strategy for phenomenological data analysis is final validation by returning interpretation results to participants through further interview to identify and clarify discrepancies between the participant's experience and the researcher's interpretation. However, as it was geographically not possible for the researcher to re-interview participants, the researcher returned the transcripts to participants on the completion of data collection while still in Indonesia. Long and

Johnson (2000) suggests that to meet the requirements of reliability and stability, the researcher can check the results with participants on the completion of data collection or on completion of the whole study (Long & Johnson 2000). Robson (1993) describes peer checking as a continuous process (Long & Johnson 2000). Similarly, Holloway and Wheeler (1996) stated that supervisors have a key role in ensuring rigour in student research (Long & Johnson 2000). Therefore, final validation was conducted by returning the final results to the supervisors.

Rigour

The researcher made attempts to ensure and maintain rigour throughout the process of this study. Following ethics approval from the Human Research Ethics Committee the University of Adelaide, study participants were recruited through purposive sampling. Initial contact with the participants was conducted by the head of PHC who had received the study information and provided with information sheet to be distributed to their staff. The interviews were held in a closed room in the PHC using open-ended questions and audiotaped.

Data collected was transcribed and translated into English and then translated back into Indonesian to maintain the integrity of the data. To meet the requirement of reliability and trustworthiness of data, the researcher returned the transcripts to the participants on the completion of data collection. Finally, a continuous peer debriefing was conducted involving the researcher's supervisors to check the significant statements extracted, the formulated meaning, the subthemes and the final themes that emerged from this study. This is to ensure the trustworthiness or the credibility of the interpretation process undertaken by the researcher in revealing the essential meaning of participant experience.

Summary of The Chapter

This chapter described the methods employed to collect and analyse the data in the researcher's endeavour to reveal the richness and the depth of the meaning of participant experience in implementing dengue prevention strategy in the Indonesian community. This chapter also provided the description of the study settings and participants in this study. Finally, attempts made by the researcher to maintain various ethical issues and ensure the rigour throughout the study were detailed.

CHAPTER FIVE – ANALYSIS AND INTERPRETATION

Introduction

This chapter provides details of data analysis and interpretation of the experiences narrated by participants as part of the process of understanding the world of participants. The subthemes and themes, which emerged as a result of this process, are presented supported by excerpts from participant statements to assist the reader to comprehend how subthemes and themes emerged from the participant stories about their experience in implementing dengue prevention program in the community.

In phenomenological research, the researcher immerses oneself in the hermeneutic cycle. This is achieved by understanding the experience of each participant and viewing all participant experiences as a whole story to reach a shared understanding, whilst the researcher also engages with their own perceptions to interpret the meaning embedded in the experience (McConnell-Henry, Chapman & Francis 2009). This circular process allows the researcher to move back and forth from formulating the meaning of one participant's story to viewing this story as part of the whole story of all participants to feel the sense of the whole story and generate a strong interpretation.

Developing an understanding of a person's world is always effected by one's personal perspective, as stated by Flood (2010, p.10) 'the art of interpretation is always bounded by the separate, intersecting horizons of researchers and participants...' The researcher's previous insight and perception related to dengue prevention in the community was utilised to help to understand the meaning of participants' experiences and to check the formulated meaning against what they actually said. .

The researcher and participants set a mutually agreed time for the interviews to be conducted at each PHC where the participants work. The interviews were conducted on working days during the lunch break and lasted between 25 – 40 minutes. In order to maintain confidentiality, pseudonyms were given to all nurses who participated in this study. The following is brief description of each participant:

Didi

Didi was a friendly, middle-aged man who has been involved in the prevention and eradication of DHF for 15 years. He previously worked at the Provincial Health Department, West Nusa Tenggara Province before being transferred to Mataram PHC about ten years ago. He is currently involved in the dengue prevention team as a team coordinator. Didi was the first nurse to show interest in participating in this study. He was very enthusiastic to share his experience in implementing the dengue prevention program, especially when I told him that his experience could be used to highlight the nurses' roles and its value to disease prevention. His interview was the longest of the five participant interviews.

Putu

Putu was a modest middle-aged woman who has been involved in dengue prevention for about 11 years. At first, she was a coordinator for a disease control and environmental sanitation (P2PL) program that included the dengue prevention program. Currently, she is also a surveillance officer for dengue and is involved in the dengue prevention team as a program implementer. She had a lot of work and said she had limited time to participate in the interview. However, after she received further information about this study she could manage to be interviewed on the day she first met with the researcher. Throughout the interview, she looked very calm and was enthusiastic to tell her stories about dengue prevention.

Maya

Maya was a cheerful, modest woman in her forties who has been involved in dengue prevention for almost 13 years. She wore glasses and hijab (headscarf). She was a member of the dengue prevention team who usually undertook counselling with the community. She has worked at two different PHCs in different provinces and has a lot of experience implementing the dengue prevention program in various areas. She cannot drive a motorcycle or a car, so she always goes to visit the community with another team member. She looked excited about trying to describe her experience. She often seemed to think before she responded the interview questions. She looked very serious when trying to recall events that she considered important during her involvement in the dengue prevention program.

Rosa

Rosa was an energetic young single woman wearing hijab who has been involved in dengue prevention for more than five years. She was the youngest among the five participants. At the beginning of the interview she looked shy and uncertain. She said she might not have much experience to share, but as the interview progressed she relaxed and showed her enthusiasm when she started talking about her experience in dengue prevention. She always maintained eye contact throughout the interview and was very expressive about her feelings related to certain events she experienced.

Lina

Lina was a cheerful energetic tall woman in her forties. She was considered new in dengue prevention program. She had been involved in the program for only one year. She had just been assigned as a coordinator of dengue prevention program in the last year to replace the previous coordinator who was transferred to another PHC. Lina was very excited to participate in this study. She said she was more than happy to share her experience although her involvement in dengue prevention was relatively new. Lina was very friendly and she shared her experience openly

The process of trying to gain the sense of participants' stories and the meaning of their experience started when the researcher conducted the first interview. The researcher took notes of significant or important topics that need to be explored. Through listening to participants' stories, the researcher is temporarily 'being-in-the-world' of the participants and integrates prior knowledge to understand the participants' world. As claimed by Heidegger, a researcher temporarily assigns her consciousness being-in-the-world and in time of the participants (Mackey 2005; McConnell-Henry, Chapman & Francis 2009).

The researcher conducted further data analysis by reading interview transcripts repeatedly, highlighting the significant statements and formulating meaning. The researcher compared the formulated meanings of statements from each participant to the other participant stories to assist in defining, modifying and redefining the subthemes and themes that emerged from the dataset. After a series of distinct stages of the analytic process, a total of five themes emerged: relentless work, collaboration and collective work, cadres are the hands of nurses, the flowers will die and access.

Most of nurses who participated in this study had been involved in dengue prevention programs for more than ten years and were still working in the area at the time when this study was conducted. They clearly remembered and provided a narrative about their feelings, certain events and memories from the time they commenced involvement in dengue prevention programs in the community until the present time. The following is a description of each theme and the related statements from participants' stories used as exemplars to assist the reader understand how each theme emerged. The sequence of these five themes presented does not indicate that the earlier discussed theme is more important than the themes discussed later.

Theme 1: Relentless work

Nurses working in disease prevention programs in the community, such as dengue prevention, often face challenges resulting from different aspects of their work. In terms of dengue prevention, certain determinants, such as environmental (temperature, vegetation, sanitation etc.), biological risk factors (vector and host), behavioural and health services, largely determine the incidence of dengue fever (Dantés & Willoquet 2009). Despite dengue prevention and control programs dengue remains a threat for global public health (Guzman, MG et al. 2010).

In this study all participants implicitly illustrated how difficult it is to prevent and reduce the incidence of dengue in the community and their feelings related to this. The theme 'relentless work' represents how demanding the dengue prevention program is for nurses; it is hard work and requires continuous effort. This theme emerged from the following subthemes: *nurses' persistence; dengue is hard to fight; dengue requires continued efforts and the feeling of disappointment*. The following statements from participants are used as exemplars.

Didi described his efforts and persistence in persuading people to carry out prevention strategies:

We have done the counselling, distributing larvacides, doing fogging. We have done all those things. In this case, we never get bored because it is our duty and it would be too sad for the community because they still need it. I think I am more active, I talk a lot and always remind other PHC staff

outside the dengue prevention team. I am fussy about this (Didi: p.6, 127, 133, 141, 151).

Didi also described the results they obtained with the team, as follows:

In the health provincial department, we have some experts of dengue. But, it's just so so, and still we need improvement. In Mataram, the case has happened since 1986 or 1987, and it never stops. It's there and always there. Death cases caused by dengue still exist. Yes, it must be continuous, because this disease is related to the climate of our region. This is indeed; a relentless work and we cannot blame people for their various responses (Didi: p.8, 188, 202).

Rosa and Maya also express their persistence in counselling and reminding people about dengue prevention measures:

We never tire to remind people about 3M plus (Rosa: p.7, 149)

I believe that there will be a moment when they notice and will be aware about the information we gave them. That's why I keep doing the counselling. Every time we find a case, I come to the community and do counselling in the mosque (Maya: p.1, 21,25 and p.5, 174).

All participants were aware that dengue is hard to fight. It is a challenging work for them. Lina and Didi expressed how difficult and challenging the prevention program is:

I think that it is quite challenging work for me. I found many challenges in implementing dengue program, it feels difficult, and we have to work hard. When there are many cases and they put the news on the newspaper, I feel it really hard (Lina: p.1, 7 and p.5, 117, 119).

Yes, indeed, as we know, it is difficult to eradicate dengue (Didi: p.5, 126)

Having found that dengue prevention programs in the community are difficult and challenging, all participants were aware that if they want to make a difference, then they need to continue the work. Didi and Lina expressed how they undertook these efforts again and again:

...we should continue our efforts. If there are still larvae found, then I'll do the counselling program again (Didi: p.3, 49 and p.6 127).

We still have to remind them again and again about the prevention. We never stop remind them and motivate them (Lina: p.2, 32 and p.5, 104)

The following statements from Putu and Maya expressed feelings of disappointment related to the difficulties they face, their efforts and the results:

I feel sad because still we can find dengue cases (Maya: p.7, 173)

The areas affected by dengue fever from year to year are always increasing and almost all the areas covered by this health centre have been affected. So it's a bit sad. (Putu: p.2, 25,28)

Theme 2: Collaboration and Collective work

All participants in this study illustrated that they cannot undertake the prevention program alone and they need to work together with other parties including other health professionals, people in the community, community leaders, educational institutions in the community and cadres. All participants were aware that although implementing dengue prevention program is their duty or responsibility as health professionals, they cannot prevent or reduce the incidence of dengue without collectively working with people from all elements in the community. The theme collective work emerged from the following subthemes: *working with other health professionals, community participation and nurses' expectation related to people cooperation.*

Lina and Didi clearly expressed the need for collaboration in dengue prevention and that they cannot work alone:

Honestly, we cannot do it just by ourselves (Lina: p.4, 87)

...I cannot do this by myself. The problem of dengue haemorrhagic fever cannot be overcome only by the available health professionals involved in the prevention team without cross sectional collaboration and community participation. It is impossible if we have to do everything by ourselves, only us the prevention team. That's impossible (Didi: p.1, 4; p.2, 28; p.3, 53)

Maya and Didi also described that they worked together and tried to involve other health professionals who are not included in the prevention team to work together on dengue prevention:

Not only I give counselling to the community but also other health care providers working in this health centre. Thanks God, everybody is nice. They are willing to help me (Maya: p.5, 112 and p.7, 161).

...I reminded other PHC staff outside the dengue prevention team. I reminded them that all health professionals are counsellors, and they should know all things about the disease. So, I hope, when they visit Integrated Health Centre (IHC) they will share the information about the disease, do the counselling (Didi: p.6, 142-149)

All study participants were aware of the importance of community participation. They illustrated that people in the community should become active participants who have initiative with the potential to work in collaboration with the prevention team, instead of being passive participants who wait and rely on the prevention team to conduct the prevention measures. Lina described the importance of community participation as follows:

Basically, dengue prevention is not only the work of the prevention team or the cadres or the head of districts, but also the work of all people in the community; it is our homework (Lina: p.4, 78).

The following statements from Maya, Lina and Putu, describe that they work with the participation of different people in the community:

I gave some brochures to the caretaker of the mosque and I asked him to share the information by reading the brochures to remind other people in the community (Maya: p.7, 175)

We have the teachers and the school health officers working with us (Lina: p.4, 76)

In the community, we do the prevention with the community participation, with cadres and the head of the community (Putu: p.2, 33)

Didi illustrated his expectation that people in the community should be actively doing their part and working together with nurses in dengue prevention:

So the head of districts and the cadres, they are expected to be more active than us (Didi: p.2, 31)

It is like I have my own house and they have their own houses. It's not me who has to clean their houses. I hope they have willingness, initiative, to care about their own health. I think they should be like... oh there the prevention team from PHC come, let's do this and that together (Didi: p.3, 54 and p.7, 154).

Theme 3: Cadres are the Hands of the Nurses

Cadres are local people in the community chosen to handle health issues in the community and they work in very close relationship with primary health services (The Ministry of Health The Republic of Indonesia 2005). In this study, all participants indicated that cadres play an important role in working with nurses to prevent dengue. The phrase 'cadres are the hands of the nurses' was taken from the statements of one participant and used as a theme. The stories of participants portrayed the following subthemes: *we get the cadres involved in dengue prevention, nurse-cadres relationship and the personal qualities of cadres.*

All participants described that they have cadres involved in prevention activities and also expressed their feelings related to the cadres' involvement. Didi described how and in what part of the prevention cadres were involved:

...we do the monitoring with cadres. If it is positive that there are larvae, they immediately do the draining and the cleaning of water reservoir or bathtubs. The water reservoir will be drained by the cadres and the PHC staff (Didi: p.1, 17- 20 and p.2, 35)

Putu, Lina and Maya described that the cadres were always involved in every prevention activity done by the nurses, as follows:

With the cadres, we implement the mass dengue eradication program (Putu: p.3, 50)

We get the information from them if there are any cases... we do the periodic larvae monitoring every three months with the cadres... I always involve the cadres. We never do our jobs without the companionship of cadres... (Lina: p.3, 53, 59, 66; p.4, 84)

Once, I did the counselling in a mosque in the area. I came with cadres. They set up the sound system and microphone (Maya: p. 4, 83, 88)

Didi expressed his feelings related to cadres' involvement:

Thanks God, the cadres care about that and are willing to help us to prevent the disease. We feel grateful because we can get the cadres... involved in dengue prevention (Didi: p.2, 38; p.8, 198)

Some participants provided a description of the cadres' role that they considered very important. Putu and Rosa described the importance of cadres as follows:

The cadres play a great role. Cadres are the hands of the health centre. That's their roles. As the head of the district has said, cadres are the hands of health centre. They are ones given the authority in their areas (Putu: p.3, 58; p.5, 109)

Cadres can be considered our partner (Rosa: p.8, 183).

Furthermore, Putu illustrated their relationship and expressed feelings related to this relationship when she found that some cadres provided false reports:

If we work with them and we don't believe them that doesn't feel right. ...I am like, I believe them and I don't believe them. But we have to believe them, because we give responsibility to them (Putu: p.4, 76, 85).

She also added:

What they report, we considered that's the actual condition (Putu: p.4, 77).

Putu also expressed her understanding of things that were faced by cadres:

We know the cadres face many difficulties... I know they have done their job as good as they can (Putu: p.4, 95; p.6, 142)

Lina also described her cooperation with the cadres:

...they are people that we work with in the community. Overall, we have good collaboration, so far. (Lina: p.3, 53, 58)

Some participants described the importance of personal qualities of the cadres. Putu described the importance of the cadres' quality and how it influenced the success of the prevention strategies:

...not bad, the cases decreased... it means that it is effective, it's just that we also need to see the potential of the cadres. Are they convinced with their job? Of course we need to see the potentials of the cadres or the human resources. ...although their education is low, with high motivation, they can be successful (Putu: p.3, 65, 68, 74; p.6, 137).

Putu added:

They often said 'can one nurse from the PHC go with us?' Some cadres are unconfident they said 'when the health officers came to their houses, people opened their doors. But, when we, cadres, came to their houses, they did not open the doors' (Putu: p.4, 101; p.6, 129).

Putu also said:

Sometimes, there are cadres who only work behind their desks. They don't know whether what they report does not reflect the actual condition in the area. It's written in the report that all areas are clear from mosquitoes' larvae. The truth is there is a dengue case, and when we monitor the area, we found larvae (Putu: p.4, 78-83)

She also said what nurses did to help cadres in this situation:

We accept their reports, but with some notes and again we motivate them... I say 'you have worked hard, but maybe we need to improve this and that, we found some cases. We might have not done our maximum efforts' (Putu: p.4, 87, 88)

We do have the cadre tips program. Cadres whose area has the lowest case received presents and appreciation from us. ...we always motivate them. One of the ways is by giving rewards. ...although their education is low, with high motivation, they can be successful (Putu: p.6, 142; p.3, 56)

Theme 4: The flowers will die

All participants in this study described what they experienced through their direct interaction with people in the community when conducting dengue prevention strategies, such as counselling and larvae monitoring. The participants also illustrated the response or reaction of the community to the efforts made by the nurses for preventing dengue and to dengue cases occurred in their area. The phrase ‘the flowers will die’ was taken from the statements of one participant as a theme that emerged in this study as it represents how people respond to the advice given by the prevention team to prevent dengue and their attitude towards dengue prevention. This phrase also symbolically illustrates the community feelings, their concerns, their priorities, knowledge and behaviour either when there are cases of dengue or no cases of dengue in their area. The theme ‘the flowers will die’ emerged from the following subthemes: *lack of knowledge, peoples’ ignorance and peoples’ responses to dengue cases.*

Didi and Lina illustrated that people in the community have very limited knowledge about dengue prevention, which in turn influences their priorities:

Often, I find some of them have pots, pots with water in them. I said ‘Sir, there are mosquito larvae in your flowerpots, you have to clean them.’ They replied ‘but the flowers will die.’ I was like ‘do you love the flowers more than your life?’ (Didi: p.3, 60).

...the fact is they don’t really know. They do not know that mosquitoes can breed in the flowerpots, or at the dispenser or other places that seem to be uncommon for them. So, I think they lack knowledge and they do not care (Lina: p.2, 43, 46)

Maya described misperceptions about fogging caused by lack of knowledge:

They often ask me ‘why is fogging not done in our areas? If possible, fogging should be done in all areas, so that there are no mosquitoes anymore, no dengue.’ ... after I explained this... and then he was like ‘oh okay, I understand now’ (Maya: p.2, 29, 39, 43).

All participants in this study described that people ignore them and people do not care about what they were trying to deliver. Rosa and Didi described community's ignorance as follows:

...we visit them and give them counselling but some of them ignore us. ...there are some people who blame other people but they themselves do not care enough about what we suggest to them for prevention. ...they just do not care about what we discuss, they just ignore it (Rosa: p.2, 33, 43 and p.3, 52) Because sometimes people just take it for granted. ...but sometimes people respond apathetic (Didi: p.5, 119 and p.6, 152)

Participants also described responses to dengue cases. Didi described that people were afraid when their kids or family members get dengue fever because they have very limited knowledge about the disease and their awareness of dengue often arises when there are dengue cases:

...when they have dengue fever, and they asked me 'what is this disease? What has happened to my kid?' They were so afraid and said 'could you please help us?' ...and when they get the disease, that's when they realise how important it is to prevent the disease. ...when there's a case, they then try to find us at the PHC (Didi: p.4, 99; p.5, 119-121; p.6, 152).

Maya also described that when there were dengue cases most people became more concerned and wanted immediate fogging to rapidly eradicate dengue so there would be no cases. The following is Maya's statement:

In the meeting the head of community said '...there are many cases in Monjok, just do fogging, all houses... so that we don't have dengue cases anymore...' (Maya: p.3, 66, 68).

Lina conveyed similar experiences as Dini and Maya, stating:

The most principle thing for us is to give fast response to reduce public anxiety. Because we know people are really afraid if there are cases. And most of them lack knowledge; they always want fogging... (Lina: p.2, 34-38).

Theme 5: Access

All participants in this study shared their experience about accessing peoples' houses or accessing an individual or a family in the community. It was mentioned by all participants that one of activities undertaken in the prevention program is periodic larvae monitoring performed in every house. Thus, they need to have access to the houses to do the monitoring. However, the participants often had difficulty in accessing a house or a person in the community. The theme access includes any aspects related to these difficulties experienced by nurses, cadres and the head of district in accessing people in the community and nurses' impression related to these aspects. The theme access emerged from the following subthemes: *empty houses, accessing houses and people in urban area, accessing houses and people in the village and people restrict access to their house.*

Rosa described that she often could not access houses because there was no one home. She said that often there were only dogs in the house and she was afraid of dogs:

...when I do home visit and I cannot meet the owner... it turned out that no one was in the house. ...often, I cannot enter the house because I am afraid of the dogs. Because, most houses in the coverage areas of this PHC have dogs. No one in the house just dogs (Rosa: p.1, 7, 19; p.4, 78)

Similar to Rosa, Lina shared her experience when she came to empty houses, as follows:

...when I visit the community in working hours, often we cannot meet with the people because mostly they also go to work at that time. ...it is difficult for us to enter the houses because among those houses that we visited there are always empty houses, either because nobody is occupying the house or because the owners go to offices or schools (Lina: p.2, 21; p.5, 106)

Putu also talked about empty houses:

...we know the cadres face many difficulties especially when they deal with urban areas, areas in cities. There are many uninhabited houses, empty, closed houses (Putu: p.4, 95).

The majority of participants described their experience in accessing people in urban areas. Lina described the characteristics of people in urban areas that can be a hindrance for nurses to get into a house and meet the people:

It is difficult to enter houses or stores around shopping centres in an urban area. ...because the characteristic of people in urban area, they are busy and they take the issue of dengue for granted. This issue is not important (Lina: p.3, 51; p.2, 22)

Putu also described the characteristics of people in urban areas as:

...we know the cadres face many difficulties especially when they deal with urban areas, areas in cities ...most people in the city are so busy. When the cadres came to their houses, they think the cadres are going to ask them for donation (Putu: p.4,95, 98)

Rosa also talked about the hindrance in accessing people in urban areas:

...in the city the head of the district does not know the owner very well, and so we cannot ask the head of the district to help us... that's bad, we cannot meet the owner (Rosa: p.4, 82).

The coverage working area of a PHC includes not only urban areas, but also remote areas and villages. Lina shared their experience related to access in villages as follows:

I personally, feel more comfortable to visit people in villages where the people usually stay together in a place; their houses are close to each other (Lina: p.3, 47)

Lina also said:

...and usually we have to go to remote area with small alleys that cannot be accessed by car. It is hard to find the house. If only they gave us the address and the phone number, then it will be easier for us to find it (Lina: p.6, 125)

Similar to Lina, Rosa also said that lack of availability of a complete addresses made it difficult for her to find the house she was going to visit:

Usually it is hard to find the house that we want to visit because we don't have the full address and the contact number (Rosa: p.8, 186)

Some participants illustrated that some people restrict access to their house. They do not allow nurses or cadres to come and enter their house. Rosa described her experience as follows:

...when we came to visit people and they do not want to welcome us. Some families allow us to enter their houses but they do not allow us to do the larvae monitoring at their bathtubs or water reservoirs (Rosa: p.7, 154, 155)

Rosa added:

...we inform them that we will visit their house one day before. Maybe sometimes they do not want us to come in and do monitoring not merely because they don't want us to come, but because they may feel uncomfortable... Maybe the house is still messy when we came (Rosa: p.7, 162, 170)

Didi described that although the head of the community came with him some people rejected him:

...even we are not allowed to enter their house. ...although we came with the head of the community, still some people reject us (Didi: p.4, 92, 96).

Summary

This chapter provided a detailed description of data analysis and the hermeneutical interpretation conducted by the researcher to analyse the embedded meaning from the participants' stories about their experience in implementing dengue prevention programs in the Indonesian community. The subthemes and themes constructed from the text of all participants were the result of a continuous circular process in analysing and comparing related significant words, phrases, formulated meaning and the whole text of the five participants. The five themes that emerged in this study represent a new horizon of meaning of participants' experience.

Participants described the challenges and difficulties they face in implementing the dengue prevention program. They also illustrated that despite the efforts they have

undertaken, dengue cases still occur. This makes the dengue prevention program relentless work that requires nurses' persistence and continued efforts. All participants in this study described their awareness that dengue prevention is a collective work that cannot be implemented only by the prevention team from PHCs without cross sectional collaboration and participation from the community. In relation to collaboration, the participants also described their experience working with the cadres. They all realised that the cadres are the hands of nurses in the community who play important roles and can affect the results of certain prevention strategies.

In describing their experience of working with community, all participants illustrated the lack of knowledge of community about dengue and its prevention. The theme *'flowers will die'* emerged as the representation of a lack of knowledge, community's perceptions on dengue, responses to dengue cases and dengue prevention. The participants also illustrated their experiences in gaining access to the house or an individual in the community. The participants described certain issues related to accessing houses in the community and their feelings related to these issues.

CHAPTER SIX – DISCUSSION

This study employed an interpretive phenomenological methodology to address the research question: *What is the experience of nurses in implementing dengue prevention strategies in the Indonesian community?* The purpose of this study was to reveal the meaning of the nurses' experiences. In order to achieve this purpose, the researcher analysed interview transcripts to reveal significant words and phrases. The researcher then interpreted the meaning embedded in the significant words and phrases and formulated subthemes and themes. The interpretations that developed contribute new knowledge, new insight and valuable lessons about nurses' experiences in the prevention of dengue so as to enlighten other health care professionals on the issues raised.

This chapter briefly reviews and reiterates the research problem and describes the procedures followed in addressing the research problem. Discussion about the congruity and gaps between the findings of this study and the results of previous studies is provided to show how elements of the study findings contribute to what is already known and what is not yet known from the literature and the implications for clinical practice. Finally, this chapter outlines the limitations of this study and provides suggestions and recommendations for future research.

Restatement of the Research Problem

Dengue fever remains a major public health problem, especially in subtropical and tropical countries (Shepard, Undurraga & Halasa 2013; World Health Organization 2009). In the period 2001 to 2010, Indonesia was the second most dengue endemic country in the world, with case fatality rate reaching 1% to 5% (World Health Organization 2009, 2012). The annual incidence of dengue haemorrhagic fever (DHF) in Indonesia has increased over the past 45 years, from 1968 to 2013 (Karyanti et al. 2014). Almost all provinces in Indonesia were affected by dengue, including West Nusa Tenggara province (WNT). In 2012, 827 cases of dengue were recorded in WNT province and most of the cases occurred in Mataram Regency (The Health Office of West Nusa Tenggara Province 2013).

Dengue prevention strategies have been implemented in Indonesia since the first 58 dengue cases were reported in 1968 (Karyanti et al. 2014). The dengue prevention

program has decreased mortality rates from 41.3% in 1968 to only 0.87% in 2010, but has not been able to reduce morbidity rates. (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011). According to the Minister of Health decree number 581, year 1992, there are eight main programs in the National Program for DHF Prevention: epidemiological surveillance and outbreak response, vector eradication, case management, partnership, community engagement, training and research (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011). The eight main programs in the prevention of dengue are carried out by PHCs in Indonesia under the guidance of each provincial health department (Directorate General of Disease Control and Environmental Sanitation Ministry of Health The Republic of Indonesia 2011).

Carrying out dengue prevention programs in the community remains very challenging for the PHC nurses involved. PHC nurses have responsibility to attempt to reach the target of zero mortality caused by DHF, a decrease in DHF cases and prevention of outbreaks. Their experience of working in the dengue prevention program was considered to be worth exploring. However, as most qualitative and quantitative studies on dengue prevention had focused on community participation, there was very limited research on the public health nurses' perspectives or viewpoints. The results of this study are expected to fill this gap and the findings can assist the health professionals to develop a more comprehensive understanding and awareness about dengue prevention from the nurses' perspectives.

Description of Procedures

Hermeneutic phenomenology was the methodology underpinning the researcher's endeavour in exploring the experience of nurses working in PHC in implementing dengue prevention strategies in the community. The use of an interpretive Heideggerian phenomenological approach allowed the exploration of the meaning of a phenomenon rather than just explaining the phenomenon, so as to reveal the uniqueness of a particular experience and promote exhaustive comprehension that lead to more meaningful care (Mackey 2005; Whitehead 2013).

Major Findings

The following themes emerged from this study: *relentless work, collaboration and collective work, cadres are the hands of the nurses, the flowers will die* and *access*. The five themes that emerged are interrelated and form a new horizon of nurses' experiences in dengue prevention. These findings are compared and contrasted with the literature regarding dengue fever in this section.

All participants in this study expressed the view that dengue prevention in the community is relentless work. The theme *relentless work* represents how demanding and difficult the dengue prevention program is for nurses; it is hard work and requires persistence and continuous effort. They mentioned that dengue is difficult to eradicate and there are always cases, which increase during the rainy season from November until April. It has been shown in a number of studies on dengue and the effect of climatic factors that the increase in dengue transmission is related to higher temperature, rainfall and humidity (Hales et al. 2002; Hii et al. 2009; Jury 2008; Promprou, Jaroensutasinee & Jaroensutasinee 2005; Souza, Silva & Silva 2010).

The increase in dengue cases in rainy seasons reported by participants is similar to the study finding on the effect of climatic factors including rainfall, rainy days, relative humidity and temperatures on the incidence of DHF in Southern Thailand, conducted by Promprou, Jaroensutasinee and Jaroensutasinee (2005). This comparative study revealed that rainfall and rainy days were two main factors in the transmission of DHF and a warmer temperature was significantly related to DHF transmission (Promprou, Jaroensutasinee & Jaroensutasinee 2005).

A comparative study conducted by Jury (2008) on the influence of climate variables on dengue epidemics also showed similar results. This study investigated the influence of rainfall, temperature and wind speed on dengue cases in a tropical country, Puerto Rico in the period of 1979 to 2005 and found that rainfall was proven to influence the seasonal increase in dengue cases annually and an increase in temperature influenced the variability of dengue cases (Jury 2008). From the two studies mentioned it is known that incidence of dengue is likely to increase seasonally with the rainy season, however a relatively increased temperature in dry seasons can also increase the transmission of DHF, so that dengue may be endemic all year round.

Therefore, dengue prevention needs to be carried out by the prevention team continuously.

Besides climatic factors, dengue prevention in the community is demanding because people have different attitudes and various responses to prevention. The participants in this study indicated that people put the responsibility for control of dengue on the prevention team and that they feel pressure from society when there were dengue cases. This finding is similar to that of a qualitative study on the perception of community, health professionals and community leaders of community involvement in dengue prevention in Cuba conducted by Toledo-Romani et al. (2006) This study concluded that the community considers the responsibility for dengue fever prevention lies with health care providers (Toledo-romaní et al. 2006). Dantés (2007) in his dengue project conducted in Latin America and Caribbean Region, reported that society commonly believes that dengue prevention is only the responsibility of government (vector control programs and the prevention team) and that this belief weakens the sense of community responsibility and their actions to prevent dengue. This finding suggests the need to modify the prevention strategy to change peoples' understandings of how dengue prevention is best managed.

All participants were aware that they could not do the prevention work alone, rather they need to collaborate and work collectively with all groups of people living in the community and other health professionals in the prevention team. The participants suggested that nurses and other health professional should know and improve their knowledge about dengue and its prevention and share this knowledge to people who visit the health centre because all health professionals are community health educators.

This participant view is in line with Parnalli, Haque and Meyur (2013) in their study on the role of primary health care providers in dengue prevention and control in Bangladesh, who asserted that health professionals in the primary health service play a critical role in providing information about dengue prevention so they can help to prevent dengue transmission in the community. The idea of involving other nurses or health professionals outside of the prevention team is also in accordance with WHO guidelines for dengue prevention that state:

Contacts, liaison and cooperative activities should be promoted within the different divisions of the health sector. This cooperation with the dengue program is necessary since the prevention and control of dengue is not the responsibility of a single department (World Health Organisation 2009, p. 80).

Participants in this study also described their collaboration with community leaders (the heads of the districts), the cadres and educational institutions, such as schools and universities, located in the coverage area of the health centre. In their collaboration with people in the community and educational institutions, nurses appear to act more as educators than as partners for the community in tackling dengue. This is similar to findings described by Toledo-Romani et al. (2006) in their study on community participation in dengue prevention. They found that in their participation, the community only undertook activities proposed and taught by the prevention team instead of using their own initiative (Toledo-romaní et al. 2006). This indicates that people are not participating as partners of the prevention team. The community should have the ability to identify their own needs and take initiative when necessary. Therefore, the nurses need to adopt other strategies to improve collaboration because as Dantés and Willoquet (2009, p. S27) state ‘...interventions that rely on educational strategies only, have less impact on behaviour and entomologic indices.’

The description of participants regarding collaboration in dengue prevention suggests that they have not successfully established cooperation with certain sectors, such as government agencies including agencies in environment, education and public works sectors, as well as municipal authority, non-government organisations (NGO) and private sectors such as the industrial sector, hoteliers and commerce sectors. Whereas, cooperation with these sectors is essential to utilise various resources available in the management of dengue (World Health Organization 2009). For example, NGOs can help in organising activities at community levels on issues of dengue. Furthermore, considering that the working boundaries of the PHC includes areas with many hotels and stores, collaboration with the hoteliers and the shopkeepers to provide a clean-healthy environment and good sanitation can help prevent transmission of dengue among people who travel within that area.

Another important issue related to collaboration in dengue prevention is the role of the cadres. All participants considered that the cadres are the hands of the nurses and

play important roles in dengue prevention. The relationship between cadres and nurses can be considered unique because they work in partnership and need each other. Although nurses transfer certain tasks to cadres and provide guidance for them in doing their jobs, they are not their supervisors and when some did not do their job properly the nurses do not have the authority to judge the cadres. The cadres are people living within the community who work voluntarily with the primary health service in a very close relationship to handle health issues in the community. Therefore, they have responsibilities and their roles are very important, but they cannot be charged if they do not do their job properly even though they are expected to perform their jobs well.

The nurses seem to be aware of this, so they maintain their relationships with the cadres with understanding and trust. As stated by Keller, Strohschein and Schaffer (2011) that caring is fundamental for nursing practice, caring relationships are supported by personal integrity, understanding, honesty and trustworthiness. One participant described their trust and understanding of cadres when some provide reports that do not match the actual condition. Despite the fact that she did not believe the false report, she accepted this in order to maintain the relationship with the cadre and continue the work. The description given by the participants indicates that nurses need to use good communication skills and diplomacy so as to retain support from people in the community, such as the cadres. This finding also suggests that nurses need to be equipped with good communication and diplomacy skills. The provincial health department are expected to facilitate nurses involved in dengue prevention programs to acquire the necessary skills by providing training.

All participants in this study realised that cadres need to be kept motivated and need to be assisted to improve their personal qualities, such as confidence and motivation, as this promotes their success. One participant described that she and other prevention team members initiated a '*cadre tips program*' to show their appreciation to cadres whose area had the lowest case of dengue. This program is not part of the dengue program, but was proven to be effective to motivate the cadres and indirectly decrease the cases of dengue. A study on different opinions of males and females regarding dengue prevention in East Java, Indonesia conducted by Zuhriyah, Fitri and AlRasyid (2013) found that the female group expected the local health agency to consider the

welfare of cadres as a reward for their contribution to community health and also to motivate them. This finding supports the need to apply strategies to improve the cadres' capabilities.

It appears that all participants mostly interacted directly with people living in the community of their working area. Another important theme in this study is 'the flowers will die' that represents how people in the community respond to the advice given by the prevention team and their attitude towards dengue prevention. Some participants illustrated that people in the community have very limited knowledge about dengue prevention, which in turn influences their priorities, perceptions towards prevention activities, particularly fogging, and their response to the occurrence of dengue cases in their community.

Participants said that people lack knowledge about mosquito breeding; they do not know that they can breed in flowerpots, or in the drip container of a water dispenser or any other place where water lies. This lack of knowledge could influence their decisions related to vector control. Koenraadt et al. (2006) investigated the correlation between knowledge and practice of dengue prevention in Thailand and found that increasing peoples' knowledge about preventive measures can help improve their practice of dengue prevention. A recent qualitative study on the health beliefs and practices related to dengue fever in Malaysia conducted by Wong and AbuBakar (2013) found that peoples' knowledge about a disease and its behavioural risk factors could support peoples' involvement in the activities to protect them from the disease although in translating this knowledge into practice people are influenced by their health beliefs. Realising that knowledge is important and that people in the community lack knowledge seems to be one of the reasons why nurses continuously give counselling and health education about dengue and its prevention, especially in areas where there are dengue cases.

Almost all participants said that people usually request fogging to solve the dengue problem in their community. The participants also said that people mostly rely on fogging as a preventive measure, because they think that it can rapidly eradicate mosquitoes. This is in line with the finding of a cognitive anthropological study on cultural dimensions of dengue that help or hinder its prevention in Mexico conducted by López, Cordero and Estrada (2012). This study found that the prevention of

dengue focused on cleaning and use of chemical fumigation to eradicate mosquitoes and that people were overly reliant on fumigation as a safety measure (Torres-López, Soltero-Avelar & Herrera-Pérez 2012). Zuhriyah, Fitri and AlRasyid (2013) also found that males considered fogging a better and faster way to prevent dengue than other preventive measures. The participants said that people do not know that fogging only kills the mosquito but not the larvae, and after they explain this to the community, mostly people begin to understand and no longer request fogging.

Some participants discussed peoples' response or reactions to dengue prevention when their family contracted the disease or when there are dengue cases in their area. The participants said that people were afraid when their kids or family member contracted dengue fever and they sought information about the disease. This behaviour shows peoples' concern of dengue when there are cases, which means that peoples' experience of having a family member with dengue can raise their awareness of dengue.

This finding is similar to results of a study conducted by Itrat et al. (2008) on the knowledge, awareness and practices of people regarding dengue in Pakistan that having family history of dengue was one of determinant of their knowledge about dengue. This indicates improved information seeking behaviour among people who have had a family member infected with dengue as described by the participants in this study. The strategy of sharing case studies of people living in a particular community who have had dengue fever to improve awareness of dengue fever might need to be introduced.

However, a more recent study on the impact of dengue outbreak on community perceptions about dengue prevention revealed that an outbreak unpredictably led to the development of new myths, although certain relevant concepts of dengue were assimilated within the community (Nazareth et al. 2015). An example of a new myth which emerged after the outbreak is that the area is protected from another dengue outbreak (Nazareth et al. 2015), which may influence their perceptions and practice regarding prevention. Nurses involved in the dengue prevention team need to dispel such myths. Although a family may have had experience of having member with dengue fever, this may be overlooked if there are no further cases for a period of time. There is sometimes a belief that they will never get dengue fever again. In this case

the prevention team should provide information about the characteristics of the dengue virus. Dengue fever is caused by four serotypes of the dengue virus and a person who has been infected with dengue once may still be infected up to four times, because there is no cross-protective immunity generated among the four types of dengue virus (Decker 2012; Lashley & Durham 2007). In fact, ‘a second infection caused by a serotype different from an individual’s first exposure is associated with greater risk for severe disease’ (Simmons & Farrar 2009, p. 1).

Another important theme in this study was *access*. All participants described their experience in accessing peoples’ houses or an individual or a family in the community. Participants stated that they often face difficulties regarding access. Most participants said that empty houses are the main problem for the implementation of larvae monitoring or to give counselling to a family whose member had contracted dengue. Some houses were empty because they are unoccupied and potentially become breeding sites for mosquitoes. A cross-sectional survey in Taiwan on the knowledge, attitude and practice of dengue disease among health care providers conducted by Ho et al. (2013, p.20) found that almost all health care providers know that ‘vacant land, houses or abandoned factories are potential breeding sites for mosquito larvae in Taiwan.’ Zuhriah, Fitri and AlRasyid (2013) also found that the presence of empty houses and neglected lands with a lot of garbage is a common problem related to DHF prevention.

Some participants described difficulties in accessing people or houses in urban areas because there was no one at home as people were going to offices and schools during working hours, people are busy and think that the issue of dengue is not important, people think that cadres are going to ask them for donation, or people in urban areas do not usually interact with the people in their community so the head of district may have no contact with them making it more difficult for health workers to access their houses. The nurses may need other strategies to access the houses of people in urban areas, especially those close to shopping centres. Inter-sectoral collaboration with other government agencies could be beneficial to enable nurses or cadres to access the houses.

Unlike urban areas, some participants described that accessing people in villages is more comfortable and easier because they usually live together in a relatively small

areas and there is a lot of community interaction. However, the participants faced difficulties in finding a particular house or a family they were going to visit because there no full address or contact number is available. Nurses should establish strong cooperation with people in villages by appointing and training some people from the community as cadres that can help them to have access to all people in the community.

Limitations of the Study

This study was designed to provide an understanding of the experience of participants involved in the implementation of dengue prevention strategies in the community. This qualitative study emphasises the richness, depth and extensiveness of information gained from interviews with nurses working in two public health centres in Mataram Regency. Thus, the small numbers of nurses who participated in this study was considered sufficient for this research, but the results of this study might not be generalisable to other settings.

Implications for Clinical Practice

This study aimed to understand the lived experience of nurses working in public health centres in implementing dengue prevention strategies in the Indonesian community. It was expected that this study would provide comprehensive understanding and awareness about dengue prevention from the nurses' perspectives. The findings of this study have the following implications for practice: relentless work was an important theme identified in this study. The challenges of this work indicate that dengue prevention is a daunting job for nurses and requires them to be persistent and work continuously to prevent dengue.

- In terms of collaboration and collective work, nurses need to:
 - Work in collaboration with all people in the community and with other sectors including government agencies and private sectors. Strong collaboration with these sectors can make the work easier for nurses and help support nurses implementing the prevention strategies.
 - Develop inter-sectoral collaboration with other government agencies, such as municipal authorities and environmental agencies, to improve strategies for accessing houses and vacant land to conduct larvae monitoring.

- Collaborate with private sectors, such as NGOs, in disseminating information about dengue and its prevention to improve peoples' knowledge so as to improve their attitude and behaviour to dengue prevention.
 - Understand that nurses' characteristics, such as caring and understanding, are beneficial to build strong relationships and partnerships with the cadres.
 - Be equipped with good communication and diplomacy skills and be prepared to deal with community resistance. The provincial health department or other health agencies should facilitate nurses involved in dengue prevention programs to acquire these skills by providing training.
 - Lobby government health agencies to consider the welfare of cadres and develop strategies to attract more people to this role, so there will be more 'agents' of health among people living in the community.
 - Understand that personal qualities of the cadres are important and could indirectly affect the success of prevention strategy. Government health agencies should provide education for these cadres to improve their personal qualities including confidence, motivation and communication skills to interact with people.
- In terms of peoples' responses to dengue prevention and dengue cases:
- Nurses should provide comprehensive information about dengue, its characteristics and prevention to dispel any myths at the time of an outbreak.
 - The strategy of sharing case studies of people who have had dengue fever who live in a particular community could improve awareness of dengue fever.
 - Nurses need to adopt strategies for partnerships with the community and develop community initiatives in dengue prevention.

Recommendations for Further Research

The findings in this study could be utilised for further research into how to overcome the difficulties regarding access to people in the community. Research into the roles of cadres and how to improve the motivation and the quality of the cadres would be worthwhile for increasing their success. Studies into how to motivate more people to be cadres would also be beneficial to have more 'agents' of health among people living in the community.

Conclusion

This study investigated the lived experience of nurses involved in implementing dengue prevention strategies in the community using hermeneutic phenomenological methodology to obtain knowledge and comprehensive understanding of the particular experience. This study revealed many issues regarding dengue prevention from the nurses' perspectives. It became evident that nurses involved in implementation of dengue prevention strategies play important roles and dengue prevention is a challenging job that requires the nurses' endeavour and collaboration with all people.

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APPENDICES

Appendix 1: Letter of Permission to Conduct Research



PEMERINTAH PROVINSI NUSA TENGGARA BARAT
BADAN LINGKUNGAN HIDUP DAN PENELITIAN
(BLHP)

Jalan Majapahit Nomor 56, Telepon (0370) 621784, 628647, 632572, fax. 644782
M A T A R A M

83115

SURAT IZIN

Nomor : 050.7 / 1244 / III / BLHP / 2015
TENTANG

PENELITIAN

- Dasar : a. Peraturan Daerah Provinsi Nusa Tenggara Barat Nomor 8 Tahun 2008 Tentang Pembentukan, Kedudukan, Tugas, Fungsi, Susunan Organisasi Dan Tata Kerja Inspektorat, Bappeda Dan Lembaga Teknis Daerah Provinsi Nusa Tenggara Barat;
- b. Surat Deputy Head School Of Nursing The University Of Adelaide Australia Nomor: tanggal 17 Agustus 2015, Perihal Permohonan Ijin Penelitian.

MENGIZINKAN

- Kepada :
N a m a : **MIRA UTAMI NINGSIH**
NIM : 1656319
Alamat : Mataram.
Untuk : Melakukan penelitian dengan judul :
"The Experience Of Nurses Working In Public Health Centres In Implementing Dengeu Prevention Strategies In Community."
Lokasi : Puskesmas Wilayah Kota Mataram.
Waktu : Selama 1 (satu) bulan sejak Izin Penelitian ini diterbitkan.

Demikian Surat Izin Penelitian ini dibuat agar dapat dilaksanakan dengan penuh Tanggungjawab.

Dikeluarkan di Mataram
Pada tanggal, 24 Agustus 2015

**KEPALA BADAN LINGKUNGAN HIDUP
DAN PENELITIAN PROVINSI NTB**



Ir. Hery Erpan Rayes, MM
Pembina Utama Madya (IV/d)
NIP. 195807081986111004

TEMBUSAN disampaikan kepada Yth:

1. Gubernur NTB di Mataram (sebagai laporan);
2. Walikota Mataram di Mataram;
3. Deputy Head Of Faculty Of Health Sciences The University Of Adelaide Australia;
4. Ketua Jurusan/Program Study;
5. Dinas/Instansi Terkait;
6. Kepala Puskesmas Wilayah Kerja Se-Kota Mataram;
7. Arsip;

Appendix 2: Letter of invitation

Dear Sir or Madam, I am a postgraduate nursing student at School of Nursing, the University of Adelaide. I am conducting a study, which aims to explore the lived experience of public health nurses particularly their experience in implementing dengue fever prevention strategies in the community.

As you are a nurse working in a Public Health Centre and are involved in a dengue fever prevention program, I would be very grateful if you could participate in the study. Your participation is voluntary. I would be very interested in hearing about your experiences of working with dengue fever prevention. If you choose to participate you will be invited to attend a private interview with me. You will be asked to sign a consent form immediately prior to the commencement of the interview. If you do not wish to participate, your career in a Public Health Centre will not be affected in any way.

There are no immediate benefits to you as a nurse personally, but this study will help public health nurses in general to understand the experience of nurses and their value in the implementation of dengue prevention strategies in the community. The results of the study will be published but any information that could identify you as an individual will remain strictly confidential.

If you have any queries please contact Mira Utami Ningsih, Phone number +61450102610 or +6289522982694 and email a1656319@student.adelaide.edu.au. This study has been approved by Human Research Ethics Committee, the University of Adelaide.

Please accept in advance my thanks for your assistance. Mira Utami Ningsih

Appendix 3: Participant Information Sheet



PROJECT TITLE: The experience of nurses working in public health centres in implementing dengue prevention strategies in community.

HUMAN RESEARCH ETHICS COMMITTEE APPROVAL

NUMBER: H-2015-183

PRINCIPAL INVESTIGATOR: Mira Utami Ningsih

Dear Public health centre nurse

You are invited to participate in the research project described below.

What is the project about?

This research is about nurses' experiences in dengue prevention. The researcher aims explore and assist in understanding public health nurses' experiences of implementing dengue fever prevention strategies in community. It is anticipated the results will provide information regarding the value of the nurses' experiences and how we can learn to develop public health nursing.

Who is undertaking the project?

This project is being conducted by Mira Utami Ningsih. This research will form the basis for the degree of Master of Nursing Science at the University of Adelaide, South Australia, under the supervision of Associate Professor Judy Magarey and Dr. Philippa Rasmussen.

Why am I being invited to participate?

You are invited to participate in this research based on the inclusion and exclusion criteria listed below,

Inclusion criteria

You are a nurse working in Public Health Centre who:

- has been involved in at least one period of dengue prevention program in the last two years (from 2014-2015).
- are willing and able to be interviewed to share your experience

What will I be asked to do?

You will be interviewed privately about your experiences of being involved in dengue fever prevention program held by public health centres. The interview will be semi-structured and an initial question such as 'What is it like to be involved in dengue prevention program in community?' will used to start the interview. In addition,

certain questions, such as ‘Can you explain more of what you meant by (a particular topic)?’ and ‘Can you please give me more example of that (particular experience)’ might be used to clarify and elicit further detail. The interview will be audio recorded using a digital voice recorder and the recording will be transcribed.

How much times will the project take?

The interview will last for about an hour or until no new information is obtained. You will be given a copy of the transcript of the interview to confirm whether your words match what you actually wanted to say.

Are there any risks associated with participating in this project?

This project is low risk research. The only possible discomfort you may feel could be that the interview may induce anxiety or sadness. In order to reduce the risk you will be interviewed in a room that provides comfort and privacy. You will be treated with respect. You are free to decide not to answer any questions and you will be given the option of not continuing the interview if necessary.

What are the benefits of the research project?

There will be no immediate benefits to you as a participant. However, for public health nurses in general, the results of this study potentially will highlight their role and their value in dengue disease prevention.

Can I withdraw from the project?

Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study at any time. Your withdrawal from this project will not affect your relationship with other public health centre nurses or with patients. Your job or position in public health centre will not be affected by your withdrawal.

What will happen to my information?

No information will be linked to your identity. No information, which may identify you as an individual will be published or presented. Your real name will not be used; instead aliases will be used to identify all participants. The interview recording and its transcription will be stored securely in password protected digital file and no participant’s name will be recorded. No one but myself, my supervisors, a confidential translator and a confidential transcriber will have access to the files.

Who do I contact if I have questions about the project?

If you want to know further about this project or you have questions, please contact me, Mira Utami Ningsih, Phone number +61450102610 or +6289522982694, email: a1656319@student.adelaide.edu.au. You can also contact my supervisors: Associate Professor Judy Magarey, email: judy.magarey@adelaide.edu.au and Dr. Philippa Rasmussen, email: philippa.rasmussen@adelaide.edu.au

What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2015-xxx). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. Contact the Human Research Ethics Committee’s Secretariat on phone +61 8 8313 6028 or by email to hrec@adelaide.edu.au if you wish to speak

with an independent person regarding concerns or a complaint, the University's policy on research involving human participants, or your rights as a participant. Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

If I want to participate, what do I do?

Please contact me, Mira Utami Ningsih, by phone at +6289522982694 or +61450102610, or by email at a1656319@student.adelaide.edu.au. or ask me to come to the public health centre to meet you directly. I will provide you with further information and if you agree to participate, you will be given a consent form to sign and return it to me. After that, your personal details including name, contact detail and email address will be obtained and we will decide a mutually agreed time to hold an interview.

Yours sincerely,

Mira Utami Ningsih, S.Kep.,Ns.

Appendix 4: Consent Form



Human Research Ethics Committee (HREC)

(to be translated into Indonesian by the researcher)

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	The experience of nurses working in public health centres in implementing dengue prevention strategies in community.
Ethics Approval Number:	H-2015-183

2. My consent is given freely.
3. I agree to provide my personal details to the researcher for participants recruitment purposes and for the purposes of the research
4. Although I understand that the purpose of this research project is beneficial for nurses, it has also been explained that my involvement may not be of any benefit to me personally.
5. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.
6. I understand that I am free to withdraw from the project at any time and that this will not affect my career as nurses in public health centres, now or in the future.
7. I agree to the interview being audio recorded. Yes No
8. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Participant to complete:

Name: _____ Signature: _____ Date: _____

Researcher/Witness to complete:

I have described the nature of the research to _____
(print name of participant)

and in my opinion she/he understood the explanation.

Signature:

Position:

Date:

Appendix 5: Independent complaints procedure form

**The University of Adelaide
Human Research Ethics Committee (HREC)**



This document is for people who are participants in a research project.

CONTACTS FOR INFORMATION ON PROJECT AND INDEPENDENT COMPLAINTS PROCEDURE

The following study has been reviewed and approved by the University of Adelaide Human Research Ethics Committee:

Project Title:	The experience of nurses working in public health centers in implementing dengue prevention strategy in community.
Approval Number:	H-2015-183

The Human Research Ethics Committee monitors all the research projects, which it has approved. The committee considers it important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research.

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see

<http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Name:	Associate Professor Judy Magarey Deputy Head School of Nursing The University of Adelaide
Phone e-mail:	+61 8 8313 6055 judy.magarey@adelaide.edu.au
Name:	Dr. Philippa Rasmussen Master of Nursing Science Program Coordinator, The University of Adelaide
Phone e-mail:	+61 8 8313 3866 philippa.Rasmussen@adelaide.edu.au
Name:	Mira Utami Ningsih Postgraduate nursing student, The University of Adelaide
Phone e-mail:	+61450102610 or +6289522982694 a1656319@student.adelaide.edu.au

2. If you wish to discuss with an independent person matters related to:
- making a complaint, or
 - raising concerns on the conduct of the project, or
 - the University policy on research involving human participants, or
 - your rights as a participant, contact the Human Research Ethics Committee's Secretariat on phone (08) 8313 6028 or by email to hrec@adelaide.edu.au

Appendix 6: Interview Protocol

Topic of interview : Nurses experience in dengue prevention program.
Interviewee : (Pseudonyms)
Interviewer :
Date and Time :
Location :

- Introduction (5 minutes)

Thank you for agreeing to participate. I'm Mira Utami Ningsih, postgraduate student in School of Nursing the University of Adelaide. I am conducting a study about the experience of nurses working at Public Health Centre in implementing dengue prevention strategies in community. The research has been approved by the Human Research Ethics Committee at the University of Adelaide.

As a nurse working in public health centre who has been involved in dengue prevention program, I would like to talk with you about your experience when involved in dengue prevention in community. What we can learn from today's discussion will potentially highlight the role of nurses and their value in dengue disease prevention in community and raise greater awareness and attention to the aspect of promotion and prevention in the role of public health centre nurses.

To facilitate my note taking, I would like to audio tape our conversation today. This interview is a semi-structured interview, which is planned to last about one hour. You may stop at any time if you feel uncomfortable and you can choose whether you want to continue the discussion or not. I will treat your answers as confidential. I will not include your name or any other information that could identify you in any reports I write. Only researcher and her supervisor on this project will have access to the recording. The notes and the recording will be destroyed after we complete our study and publish the results. Do you have any question about the study?

- Question

The interview will commence with a broad question such as,

- Can you tell me a bit about your experience working as a nurse in dengue prevention program?

- The remaining question will be generated based on the responds from the nurse being interviewed.

- **Final thoughts (5 minutes)**

Those were all of the questions I want to ask. Do you have any final thoughts about your experience in dengue prevention that you would like to share?

Thank you for your time.

Appendix 7: Ethics Approval



RESEARCH BRANCH
OFFICE OF RESEARCH ETHICS, COMPLIANCE
AND INTEGRITY

LEVEL 7, 115 GRENFELL STREET
THE UNIVERSITY OF ADELAIDE
SA 5005 AUSTRALIA

TELEPHONE +61 8 8313 5137
FACSIMILE +61 8 8313 3700
EMAIL hrec@adelaide.edu.au

CRICOS Provider Number 00123M

14 August 2015

Associate Professor J Magarey
School of Nursing

Dear Associate Professor Magarey

ETHICS APPROVAL No: H-2015-183

PROJECT TITLE: The experience of nurses working in public health centres in implementing dengue prevention strategies in community

The ethics application for the above project has been reviewed by the Low Risk Human Research Ethics Review Group (Faculty of Health Sciences) and is deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research (2007)* involving no more than low risk for research participants. You are authorised to commence your research on **14 Aug 2015**.

Ethics approval is granted for three years and is subject to satisfactory annual reporting. The form titled *Annual Report on Project Status* is to be used when reporting annual progress and project completion and can be downloaded at <http://www.adelaide.edu.au/ethics/human/guidelines/reporting>. Prior to expiry, ethics approval may be extended for a further period.

Participants in the study are to be given a copy of the Information Sheet and the signed Consent Form to retain. It is also a condition of approval that you **immediately report** anything which might warrant review of ethical approval including:

- serious or unexpected adverse effects on participants,
- previously unforeseen events which might affect continued ethical acceptability of the project,
- proposed changes to the protocol; and
- the project is discontinued before the expected date of completion.

Please refer to the following ethics approval document for any additional conditions that may apply to this project.

Yours sincerely,

Sabine Schreiber
Secretary, Human Research Ethics Committee
Office of Research Ethics, Compliance and Integrity



RESEARCH BRANCH
OFFICE OF RESEARCH ETHICS, COMPLIANCE
AND INTEGRITY

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SA 5005 AUSTRALIA

TELEPHONE +61 8 8313 5137
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EMAIL hrec@adelaide.edu.au

CRICOS Provider Number 00123M

Applicant: Associate Professor J Magarey
School: School of Nursing
Project Title: The experience of nurses working in public health centres in implementing dengue prevention strategies in community

The University of Adelaide Human Research Ethics Committee
Low Risk Human Research Ethics Review Group (Faculty of Health Sciences)

ETHICS APPROVAL No: H-2015-183

App. No.: 0000020864

APPROVED for the period: 14 Aug 2015 to 31 Aug 2018

Thank you for your responses dated 13.08.2015 and 14.08.2015 to the matters raised.

This study is to be conducted by Mira Utami Ningsih, Masters student.

Sabine Schreiber
Secretary, Human Research Ethics Committee
Office of Research Ethics, Compliance and Integrity

Appendix 8: Thematic Analysis

Significance Statements	Formulated meanings	Cluster themes	Themes
I am with my friends because I cannot do this by myself (D1, 3)	Nurses cannot do the prevention by themselves.	Working with other health professionals	Collective work
The dengue prevention team sometimes involved two persons, sometimes three (D1, 4)	Nurses working in team		
Not only I give counselling to the community but also other health care providers working in this health centre (M5, 112)	Working with other health professionals out of the prevention team		
Thanks God, everybody is nice. They are willing to help me (M7, 161)	Nurse feel that she is supported by the team members		
So the head of districts and the cadres, they are expected to be more active than us (D2, 31)	All elements in the community need to be actively involved	Community participation	
In the community, we do the prevention with the community participation, with cadres and the head of the community (P2, 33)	Participations of all elements in the community is important		
The problem of dengue haemorrhagic fever (DHF) cannot be overcome only by the available health professionals involved in the prevention team, without cross sectional collaboration and community participation (D2, 28)	Community participation and cross sectional collaboration are needed in dengue prevention		
I gave some brochures to the caretaker of the mosque and I asked him to share the information by reading the brochures to remind other people in the community (M7, 175)	Nurse disseminate dengue prevention with the help of people in community	Community participation	Collective work
We have the teachers and the school health officers work with us (L4, 76)	Nurse work with educational institution in the community		

Basically, dengue prevention is not only the work of the prevention team or the cadres or the head of districts, but also the work of all people in the community, it is our homework (L4, 78)	All people should involved in dengue prevention		
Honestly, we cannot do it just by ourselves (L4, 87)	The prevention team cannot do the prevention just by themselves	Collective work	
It is impossible if we have to do everything by ourselves, only us the prevention team. That's impossible (D3, 53)	The prevention team cannot do the prevention just by themselves		

Significance Statements	Formulated meanings	Cluster themes	Themes
We never tired to remind people about 3M plus (R7, 149)	Nurse never tired to remind people about dengue prevention	Nurse persistence	Relentless work
I believe that there will be a moment when they notice and aware about the information we gave them. That's why I keep doing the counselling (M1, 21,24)	Nurse feel optimistic		
I always talk about dengue cases, the prevention through 3M plus, and the importance of clean and healthy living to visitors and ask them to read the leaflets about dengue prevention (M5, 115)	Nurse keep promoting dengue prevention		
I don't get bored, although I've been involved in the program for a long time. If they don't accept the program, maybe I am wrong. We do some	Nurse continues doing her job and tries to improve her efforts.		

corrections (M6, 130)			
Every time we find a case, I come to the community and do counselling in the mosque (M7, 174)	Nurse always response to any dengue cases		
We have done the counselling, distributing a bait, doing fogging. We have done all those things (D6, 133)	Nurse has done many efforts to prevent dengue		
In this case, we never get bored because it is our duty and it would be too sad for the community because they still need it (D6, 127)	Nurse never stop doing his efforts	Nurse persistence Continues efforts	Relentless work
I think I am more active, I talk a lot and always remind other PHC staffs outside the dengue prevention team. I am fussy about this. (D6, 141, 151)	Nurse very concern about dengue prevention	Nurse persistence	
I found many challenges in implementing dengue program, it feels difficult, we have to work hard (L5, 117)	Nurse think that dengue prevention is not an easy work and have to work hard	Nurse persistence Dengue is hard to fight	
I feel sad because still we can find dengue cases (M7, 173)	Feeling disappointment because dengue is still there	Dengue is hard to fight	Relentless work
The areas affected by dengue fever from year to year are always increasing and almost all the areas covered by this health centre have been affected. So it's a bit sad. (P2, 25,28)	Feeling disappointment because the areas affected by dengue increase		
I think that it is quite challenging work for me (L1, 7)	Nurse think that dengue prevention is not an easy work		
When there are many cases and they put the news on the newspaper, I feel really hard (L5, 119)	Dengue cases put pressure on nurses work		
Yes, indeed, as we know, it is difficult to	Nurse aware that dengue is		

eradicate dengue (D5, 126)	difficult to eradicate		
In Mataram, the case has happened since 1986 or 1987, and it never stops. It's there and always there. Death cases caused by dengue still exist (D6, 190)	Dengue remains a big problem		
We still have to remind them again and again about the prevention (L2, 32)	Nurse have to continuously doing her efforts on dengue prevention	Continuous efforts	Relentless work
We never stop remind them and motivate them (L5, 104)	Nurse have to continuously doing her efforts on dengue prevention		
But we should continue our efforts (D6, 127)	Nurse have to continuously doing his efforts		
In the health provincial department we have some expert in dengue, but it just so so, and still we need improvement (D8, 188)	It needs more efforts in dengue prevention	Continues efforts	Relentless work
This is indeed a relentless work and we cannot blame people for their various responses (D8, 203)	Dengue is a relentless work		
If there are still larvae found, then I'll do the counselling program again (D3, 49)	Nurse continues doing his job		

Significance Statements	Formulated meanings	Cluster themes	Themes
...we do regular monitoring. So the cadres will work and PHC staff in the prevention team always monitor the activities of cadres (D1, 13) we do the monitoring with cadres (D2, 35)	The cadres working together with the nurses,	We get the cadres involved in dengue prevention	Cadres are the hands of the nurses

<p>The water reservoir will be drained by the cadres and the staff (D1, 20)</p> <p>With the cadres, we implement the mass dengue eradication program (P3, 50)</p> <p>We never do our jobs without the companion from cadres... they are the people that we work with in the community (L3, 53)</p> <p>We get the information from them if there are any cases... we do the periodic larvae monitoring every three months with the cadres... I always involved the cadres (L3, 59, 66; L4, 84)</p> <p>I did come with cadres (M4, 88)</p> <p>...we will ask the head of district and the cadres to come with us. (R8, 183)</p> <p>Thanks God, the cadres care about that and are willing to help us to prevent the disease (D2, 38)</p> <p>We feel grateful because we can get the cadres... involved in dengue prevention (D8, 198)</p>			
<p>If we work with them and we don't believe them that doesn't feel right (P4, 76)</p>	<p>Nurse feel a bit guilty or dilemma if she doesn't believe in cadres work'. Their relationship need to be built based on mutual trust</p>	<p>Nurse-cadres relationship</p>	<p>Cadres are the hands of the nurses</p>
<p>I am like, I believe them and I don't believe them. But we have to believe them, because we give responsibility to them (P4, 85)</p>			
<p>We accept their reports, but with some notes and again we motivate them... I say 'you have worked hard, but maybe we need to improve this and that, we found some cases. We might have not done our maximum efforts' (P4, 87, 88)</p>	<p>Nurse keeps her trust to the cadres.</p> <p>Nurse aware that the cadres is people who play important roles in dengue prevention, so they need to stay convinced and</p>	<p>Nurse-cadres relationship</p> <p>Cadres roles are important</p>	

	motivated		
We know the cadres face many difficulties... When the cadres come to their houses, they think they are going to ask them for donation. (P4. 95)	Nurses have understanding and aware of difficulties faced by the cadres	Nurse-cadres relationship	
I know they have done their job as good as they can (P6, 142)	Nurse trust the cadres		
Overall, we have good collaboration, so far (L3, 58)	Nurse happy with her collaboration with cadres		
... although their education is low, with high motivation, they can be successful (P6, 137) we always motivate them. One of the ways is by giving rewards (P6, 142) We do have the cadre tips program. Cadres whose area has the lowest case received presents and appreciation from us (P3, 56)	Motivation of the cadres is the key of success. Nurse aware that cadres play important roles, so that they have to be appreciated and motivated	Personal quality of cadres	Cadres are the hands of the nurses
...not bad, the cases decreased... it means that it is effective, it's just that we also need to see the potential of the cadres. Are they convinced with their job? (P3, 65,68) Of course we need to see the potentials of the cadres or the human resources (P3, 74)	The succeed of monitoring to decrease the cases influenced by the cadres		

<p>They often said ‘can one nurse from the PHC go with us?’ (P4, 101) ...That’s why the cadres are unconfident (P4, 99) Some cadres are unconfident, they said ‘when the health officers came to their houses, people opened their doors. But, when we, cadres, came to their houses, they did not open the doors (P6, 129)</p>	<p>Some cadres are unconfident</p>	<p>Personal quality of cadres</p>	<p>Cadres are the hands of the nurses</p>
<p>...sometimes, there are cadres who only work behind their desks (P4, 78) It is written in the report that all areas are clear from larvae. The truth is there is a dengue case... and we found larvae (P4, 80)</p>	<p>Some cadres maybe a bit lazy and they made report that not correspond to the fact</p>		
<p>Cadres are the hands of the health centre. That’s their roles. As the head of the districts has said, cadres are the hands of health centre. They are ones given the authority in their areas (P5, 109) Cadres can be considered our partner (R8, 183) The cadres play a great role (P3, 58)</p>	<p>Cadres are the hands of the PHC Nurse aware that cadres role are important</p>		

Significance Statements	Formulated meanings	Cluster themes	Themes
<p>Often, I find some of them have pots, pots with water in them. I said ‘Sir, there are mosquito larvae in your flowerpots, you have to clean them.’ They replied ‘but the flowers will die.’ I was like ‘do you love the flowers more you’re</p>	<p>People prioritise other thing instead of their health because they don’t know</p>	<p>Lack of knowledge</p>	<p>The flowers will die</p>

your life?' (D3, 60)			
...the fact is they don't really know. They do not know that mosquitos can breed at the flowerpots, or at the dispenser or other places that seems to be uncommon for them. So, I think they are lack of knowledge and they do not care (L2, 43, 46)		Lack of knowledge	The flowers will die
We do have time when we do the monitoring and did not find any larvae. For us, it shows that the community cares (D4, 75)	No larva means that the community care and aware of their health	People' ignorance	The flowers will die
I think their responds are basically the same with the responds of most people in the community. Although they are in educational institutions, if we rarely come and remind them, it's just the same. (D7, 173)	Nurse find that, basically all people in community have very little awareness to dengue prevention, they don't really care		
...visit them and give them counselling but some of them ignore us (R2 33) Because sometime people just take it for granted (D5, 119) but sometime people respond apathetic (D6, 152)	Some people don't care of what the nurses said and ignore it		
So there are some people who blame other people but they themselves do not care enough about what we suggest them in the prevention (R2, 43) ...they just do not care about what we discuss, they just ignore it. (R3, 52)	Some people don't care of what the nurses said and ignore it		
We suggest them to clean or replace the pots, so that the mosquitoes do not breed there in the pots. 'Because you may not be the one bitten by mosquitoes, but your neighbour may be... your	People do not know that their action might harm others health	Lack of knowledge	The flowers will die

neighbours may get sick because of that.’ (D3, 65)			
...they have dengue fever, and they asked me ‘what is this disease? What is happened to my kid?’ (D4, 99) They were so afraid and said ‘could you please help us?’ (D5, 101) ...and when they get the disease, that’s when they realise... (D5, 119) When there’s a case, they then try find us at the PHC (D6, 152)	People worry and want to get information only when their family members get sick because they just knew the consequence of dengue		
But there are heads of districts that ignorant and prefer to take a shortcut, they always ask us to do fogging (R4, 94)	Some people think that fogging is the best way	Lack of knowledge	The flowers will die
They often ask me ‘why is fogging not done in our areas? If possible, fogging should be done in all areas, so that there are no mosquitoes anymore, no dengue.’ (M2, 29) ... after I explained this... and then he was like ‘oh okay, I understand now’ (M2, 39, 43) ...’you said there are many cases in Monjok, just do fogging, all houses... so that we don’t have dengue cases anymore...’ (M3, 66,68)	People think that fogging is the best way to eradicate dengue because they don’t know much about it.		
...in 2009...all heads of the communities bought fogging instruments. Today, there are still dengue cases. That’s what I mean. They should understand that it’s not the fogging that should be prioritised, it’s 3M plus. (M4, 76, 79)	People do not learn from past experience that fogging was not the best solution		

Significance Statements	Formulated meanings	Cluster themes	Themes
...when I do home visit and I cannot meet the owner... when it turned out that no one in the house (R1, 7, 19)	Nurse cannot meet people when no one in the house. Difficulty visiting people	Empty houses	Access to the house or the person
Often, I cannot enter the house because I am afraid of the dogs. Because, most houses in the coverage areas of this PHC have dogs. No one in the house just dogs (R4, 78)	Nurse cannot enter the house because of dogs and no one in the house	Empty houses	Access to the house or the person
...When I visit the community in working hours, often we cannot meet with the people because mostly they also go to work at that time (L2, 21)	Nurse cannot enter the house because no one in the house		
...it is difficult for us to enter the houses because among those houses that we visited there are always empty houses, either because nobody occupying the house or because the owners go to offices or schools (L5, 106)			
...because the characteristic of people in urban area, they are busy and they take the issue of dengue for granted. This issue is not important (L2, 22)	For urban people, they think that dengue is not important in their busy life, so they do not need the nurse to come to their house	Difficulty in accessing houses and people in urban area	Access to the house or the person
... in the city he head of the district do not know the owner very well, and so we cannot ask the head of the district to help us... that's bad, we cannot meet the owner (R4, 82)	Difficulty in accessing houses in urban area		
It is difficult to enter houses or stores around shopping centre in urban area (L3, 51)	Nurse face difficulty to access houses in urban area		
...most people in the city are so busy. When the cadres come to their houses, they think they are	Urban people are busy and they have misperception of cadres		

going to ask them for donation (P4, 98)	who come		
...we know the cadres face many difficulties especially when they deal with urban areas, areas in cities. There are many uninhabited houses, empty, closed houses. (P4, 95)	Cadres face difficulty to access empty houses in urban area	Difficulty in accessing houses and people in urban area Empty houses	
...when we came to visit people and they do not want to welcome us (R7, 154) ...even we are not allowed to enter their house (D4, 92) Although we came with the head of the community, still some people reject us (D4, 96)	Some people don't want nurses to come to their house	People restrict access to their house	
Some families allow us to enter their houses but they do not allow us to do the larvae monitoring at their bathtubs or water reservoirs (R7, 155)	Some people restrict access to their house	People restrict access to their house	
...we inform them that we will visit their house one day before. Maybe sometime they do not want us to come in and do monitoring not because they don't want us to come, but because they may feel uncomfortable... maybe the house still messy when we came (R7, 162, 170)	Some people do not like other people to see their house and how it looks		
Usually it is hard to find the house that we want to visit because we don't have the full address and the contact number (R8, 186)	Difficult to find the house because no available full address and contact number	Accessing houses and people in village or remote area	Access to the house or the person
...and usually we have to go to remote area with small alleys that cannot accessed by car. It is hard to find the house. If only they gave us the address and the phone number, then it will be easier for us to find it (L6, 125)			

I personally, feel more comfortable to visit people in villages where the people usually stay together in a place; their houses are close to each other (L3, 47)	The characteristic of houses in village make it easier for nurses to access	Accessing houses and people in village	
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