PhD RESEARCH THESIS

The Awareness and Knowledge of Post-Disaster Emotional Responses
in Adult Community Members and Nurses
in Yogyakarta, Indonesia

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This thesis is submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Adelaide Nursing School
The University of Adelaide
Australia
August 2020

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Abstract

Disasters are extraordinary events that have been causing fatalities and destruction throughout history. Indonesia in particular, is highly vulnerable to natural disasters due to its geographical position in the world. Yogyakarta is one of the provinces within Indonesia that is at high risk of disasters. This province is prone to earthquakes and volcanic eruptions. Prior studies show consistent findings that the chaos caused by disasters will lead to some degree to mental health problems. However, survivors of disasters might not have sufficient knowledge of the potential psychological impacts of a disaster, and this in turn may prevent them from seeking help when needed. Nurses, who are often at the front line in the aftermath of a disaster, also need to be aware of the potential mental health problems that may emerge within their local community.

This study uses the cycle of disaster management response framework to investigate adult community member and nurse awareness and knowledge of posttraumatic emotional responses related to disasters in Yogyakarta, Indonesia. This is a qualitative, descriptive exploratory study, involving adult community members who live in Yogyakarta and nurses who work in Yogyakarta. Data from adult community participants were collected with interviews, while data from nurses were collected with focus groups. Data were transcribed and translated into English before the analysis. Thematic analysis was employed to analyse the data.

Three major themes were identified from adult community members: disaster impact, disaster responses, and post-disaster mental health awareness. Three major themes were identified from nurses: nurses' knowledge and awareness of post-disaster emotional responses, nurses' experiences of providing mental health

support in disaster events, and nurses' education and training related to disaster and mental health.

The study found that participants were aware of intense emotional feelings just after the impact of a disaster, however, this awareness lessened over time, leaving them with no preparation regarding their mental wellbeing during the long process of recovery. The connectedness of people within their community as they rebuilt their homes and lives was very important in sustaining their wellbeing. Religious beliefs and engagement in religious activities were a significant coping strategy for many of the community members and nurses. However, a sense of "sadness" remained for some but was not recognized as a posttraumatic emotional response. Nurses also expressed their concern about their limited ability to assess, engage and educate their community about posttraumatic emotional responses related to disasters in Yogyakarta, Indonesia. Opportunities for training in post-disaster mental health were suggested.

The original contribution of this study to the body of knowledge is that within the cycle of disaster management response framework, the early identification of posttraumatic emotional responses needs to be highlighted. This must take into consideration the relevant cultural and religious contexts of different countries. Increasing the community members' and leaders' (political, health and religious) awareness of posttraumatic emotional responses may influence a proactive approach to implementing community information and education programs that encourages people to access healthcare practitioners much earlier. Individuals' mental wellbeing within a devastated community is the responsibility of that community including those who care for their physical and spiritual wellbeing.

Thesis Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, 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. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

I give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

17 August 2020

Dewi Retno Pamungkas Date

Acknowledgements

My PhD journey would have never been completed without support from many people, who could not be mentioned individually here. I would like to express my deepest appreciation and gratitude to those who have helped me survive and finish this PhD rollercoaster.

- ♥ First of all, I would like to say thank you to the Indonesian Endowment Fund for Education (LPDP), Ministry of Finance, Republic of Indonesia, which has provided me with financial support.
- ♥ My supervisors: Associate Professor Lynette Cusack, Dr Rebecca Feo, and Professor Kristine Gebbie, thank you for introducing me to qualitative study. It is an area I never imagined I could deal with. This PhD journey would have never been finished without your support. Thank you for your patience, kindness, guidance, and encouragement whenever I felt down and lost.
- ♥ Hermanus "Dhe Djarkoni" Wahyaka, thank you for the English translation and the discussions we had to make sure that the translation was accurate.
- ♥ Dr. Emi Patmisari, thank you for checking my English translation and providing me with some suggestions.
- ♥ Dr. Timothy Schultz, as the Postgraduate Coordinator, thank you for giving me the opportunity to study at the Adelaide Nursing School, and thank you for your support during my PhD.
- ♥ To Nina Seja, thank you for editing this thesis in accordance with ASEP's Guidelines on Editing Research Theses.
- ♥ To all participants, both community members and nurses, thank you for your time and invaluable stories that have made my PhD possible.

♥ To my parents, Ibu Tumiyem and Bapak Purwanto, *terima kasih untuk doa yang terpanjat untukku sepanjang masa*.

♥ To my husband, Rizky Poer Setyaji, thank you for being my biggest supporter. I could have never done this PhD without you. *Bersama, kita pasti bisa!* I love you forever and for always.

♥ To my daughter, Shania Maisadipta Poer, thank you for being my best friend during this PhD journey.

♥ To my son, Adelenzo Koesnodiro Poer, you are the best gift during my PhD journey. Thank you for putting a smile on my face, during many hard times.

♥ To Akung Poernomo and Uti Peny, thank you for your support, help and prayers, and also for taking care of Shania and Enzo.

♥ To Uti Tri and Budhe Dhian, thank you for loving and taking care of Enzo while I was busy writing.

♥ To all my family (Mbak Yanti, Mas Slamet, Mbak Enny, Mas Jaka, Mbak Ani, Mas Imung, Rizki Sa'ban, Lik Maman, Icha, Zafran, Sidik, Alin, Dara, Firas), relatives, and friends, thank you for your support.

♥ Last but not least, I would like to say thank you to all my teachers and lecturers who have motivated and inspired me to achieve my academic accomplishments, thus far.

Abbreviations

AIPNI	*Asosiasi Institusi Pendidikan Ners Indonesia* (Association of Indonesian Nurses Education Center)
AIPViKI	*Asosiasi Institusi Pendidikan Vokasi Keperawatan Indonesia* (Association of Indonesian Vocational Nurses Education Center)
APA	American Psychiatric Association
CIDI	Composite International Diagnostic Interview
CINAHL	Cumulative Index to Nursing and Allied Health Literature
COVID-19	Coronavirus disease 2019
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders IV, Text Revision
DSM-V	The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
EBMR	Evidence-Based Medicine Review
GHQ	General Health Questionnaire
HREC	Human Research Ethics Committee
ICN	International Council of Nurses
IES-R	Impact of Events Scale-Revised
PTGI	Posttraumatic Growth Inventory (PTGI)
PTSD	Posttraumatic Stress Disorder
PCL-C	PTSD Checklist-Civilian version
PDS	Post-traumatic Diagnostic Scale
SOPs	Standard Operating Procedures
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Disasters are extraordinary events that have been causing fatalities and losses throughout the entire history of human existence. Prior studies showed consistent findings that all the disadvantages caused by disasters are factors that will lead, to some degree, to mental health problems. However, survivors and healthcare providers, in particular nurses, might have an insufficient awareness and knowledge about the emotional responses after a disaster event. This study aims to investigate adult community member and nurse awareness and knowledge of post-disaster emotional responses in Yogyakarta, Indonesia. This chapter will provide information about the background, significance of the study, aims and objectives, and an overview of the chapters in the thesis.

1.2 Background

1.2.1 Disasters in the World

Disasters may happen in any part of the world. The World Health Organization (WHO) and International Council of Nurses (ICN) (2009) summarized that there are many definitions of disaster given by a range of organizations. Nevertheless, all the definitions agree on the extensive catastrophic effects of disasters on the environment, economies, infrastructure, loss of life, and in causing difficulties for the community to respond within their own resources. Some of the very first definitions of disaster were described by Oliver (1980) and Beinin (1985). Both authors recognized that disasters occur unexpectedly and periodically (Beinin 1985). As noted by Beinin (1985), disasters have two main categories: disasters of

a natural origin and disasters of an anthropogenic character. While the second category is disasters that originate from people's activities, the first category is for disasters that are solely caused by natural activities such as seismic, meteorological, hydrological, volcanic and other natural actions. Whether it is natural or man-made, disasters are extraordinary events that are beyond human expectations in terms of immensity or frequency (Oliver 1980). Beinin (1985) and Oliver (1980) call attention to the consequences of disasters that may result in devastation, great affliction to human life, destruction to homes, and loss of lives. Another definition for disasters given by the United Nations Office for Disaster Risk Reduction (2020) is "a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts".

An important consideration, when contemplating disaster events, is that some regions are more vulnerable than others to experiencing natural disasters due to their geographical locations. Indonesia is very prone to natural disasters, especially earthquakes and tsunami, due to Indonesia's geographical location, which lies in the meeting point of three plates: the Mediterranean plate, Pacific plate and the Australian plate (Azmi, Budiarto & Widyanto 2011). Lauterjung, Munch and Rudloff (2010) confirmed that because Indonesia is located at the Sunda Arc, the most prominent active continental margin, it is one of the most vulnerable countries in the world to experience regular earthquakes, tsunamis and volcanic eruptions. Moreover, Indonesia is also located between two great oceans: the Pacific and Indian Oceans.

According to data provided by the Indonesian National Disaster Management Agency (2016a), there have been fifteen occurrences of tsunami across Indonesia between 1861 and 2014, 498 earthquakes since 1828, forty-seven earthquakes and tsunami together since 1998, and 166 volcanic eruptions since 1815. Among those disaster events, the most destructive were the tsunami in 1992 (2400 deaths), earthquake in 2006 (5689 deaths), tsunami and earthquake in 2004 (166,661 deaths), and volcanic eruption in 1883 (36,417 deaths). Indonesia was included in the top ten countries for natural disaster events in 2014 (Guha-Sabir, Hoyois & Below 2015). During 2014 alone, there were ten disasters that caused 243 deaths and damage costing $1.11 US billion. The most recent and powerful volcanic eruption was in 2010 with 386 deaths (Indonesian National Disaster Management Agency 2016b). The earthquake in 2006 and volcanic eruption in 2010 both took place in Yogyakarta.

Yogyakarta is one of the provinces in Indonesia, which is located to the north of the Indian Ocean, and is surrounded by a number of active volcanoes, namely Merapi, Kelut and Slamet. Merapi is one of the most active volcanoes in Indonesia, together with Kelut (Kozak & Cermak 2010). This puts Yogyakarta as an area prone to natural disasters.

1.2.2 The impacts of disasters

Yogyakarta was struck by a devastating earthquake in 2006, and the eruption of Merapi in 2010. Both disasters resulted in a large number of losses, including deaths, physical and mental trauma for those who survived and damage to the community and essential service infrastructures. The volcanic eruption in 2010

resulted in 386 deaths, 381 injured, and 348 relocated. The earthquake in 2006 caused 5689 deaths, 37728 injured, and 1,990,009 relocated (Indonesian National Disaster Management Agency 2016c).

Exposure to a disaster event will have impacts on the social and psychological life of individuals (Grigg & Hughes 2010). After the Aceh tsunami in Indonesia in 2004, 5-8% of the population experienced significant mental health problems, and the morbidity for psychiatric disorders was 25-30% (Math et al. 2006). Musa et al. (2014) added that the tsunami in Aceh had long-term psychological impacts for the people who were affected. After approximately five years, 19% of survivors were still experiencing depression, 51.5% were experiencing anxiety and 22% were experiencing stress (Musa et al. 2014). Studies on disasters in Indonesia have increased in number since the Aceh tsunami in 2004. However, to date, there have been limited studies published in peer-reviewed journals regarding the psychological impacts of disasters on the Indonesian population. One unpublished study by Thoha (2012) discovered that the Merapi eruption in 2010 caused the survivors, especially those who lived near the erupting volcano, to experience anxiety due to the loss of their homes, jobs (mainly farmers), loved ones, and other properties. Moreover, during the eruption, the survivors had to be evacuated, and relied on donations for their daily needs (Thoha 2012), which increased their stress. As identified by Thoha (2012), mental health problems continued to exist for members of the evacuated community after they moved back to their homes. The identified problems ranged from anxiety, panic attacks, posttraumatic stress disorder (PTSD) and depression. Warsini et al. (2015) reported similar findings in

their Indonesian study, that two years after the 2010 Merapi eruption, respondents in the area still felt traumatized by the experience.

In addition to the varying severity of a disaster, the psychological impacts from disasters are influenced by individual factors, such as age (Frankenberg et al. 2008; Musa et al. 2014; Warsini et al. 2015), gender (Frankenberg et al. 2008; Musa et al. 2014; Warsini et al. 2015; Zhang et al. 2012), employment and marriage status (Musa et al. 2014), home ownership (Warsini et al. 2015), loss of family members (Frankenberg et al. 2008), social support (Zhang et al. 2012), property damage (Frankenberg et al. 2008), level of education (Frankenberg et al. 2013), and coping behaviors (Fahrudin 2012).

An interesting study by Warsini et al. (2015) showed that after a volcanic eruption in Yogyakarta, respondents who lived closer to Mount Merapi, and who had not experienced a disaster before, reported higher psychological impacts, whereas respondents from repeatedly affected areas reported lower psychological impacts. This finding suggests that people who frequently experience disasters were more prepared than those who experienced it for the first time. Warsini et al. (2015) went onto suggest that people who had never experienced a volcanic eruption before were less prepared to deal with the psychological problems after the disaster.

Preparedness is a condition when individuals are equipped to avoid or decrease the negative impacts when an unpredictable event occurs. Rachmalia, Hatthakit and Chaowalit (2011), suggest that knowledge is one of the three indicators of preparedness in coping with a tsunami. This knowledge includes the nature of tsunami, responses to tsunami, emergency preparedness, and warning system

information. A quantitative study conducted by Nurhayati et al. (2010) evaluated training in psychological preparedness delivered to thirty high school counselling teachers in Yogyakarta. The results of the pre- and post-test scores indicated that there was an increase in the respondents' understanding of disaster preparedness following the intervention.

Knowledge of psychological or emotional responses is crucial for health professionals, when they are supporting a community in the aftermath of a disaster. An observational study by Math et al. (2006) in India revealed that there was a lack of knowledge among health professionals about the link between mental health and disasters, which led to poor psychological intervention. The health team in this study encountered several challenges; the two main challenges were the low awareness by the general population about the effects of disasters on mental health and secondly, the lack of skills on the part of health staff in responding to mental health disorders related to the disaster (Math et al. 2006). There is no such research in Indonesia that has explored the understanding of the community's awareness and knowledge regarding their mental health after a disaster. There is also a gap in the research about Indonesian health professionals' awareness of their communities' mental health related to disasters.

The Indonesian government has indicated great concern about disaster management given the history of natural and man-made disasters within Indonesia. Concerns regarding disaster management started in 1966, when the Indonesian government established a Central Disaster Relief Considerations Agency, followed by the establishement of the National Coordination Team for Natural Disaster

Management in 1967, National Coordinating Board for Natural Disaster Management in 1979, and National Disaster Management Agency in 2008 (National Disaster Management Agency 2020). There are a number of government regulations related to the management of a disaster response including: Law of the Republic of Indonesia Number 24, 2007 on Disaster Management (President of Republic Indonesia 2007); President Republic Indonesia Regulation Number 8, 2008 on National Disaster Management Agency (President of Republic Indonesia 2008a); Government Regulation of the Republic of Indonesia Number 21, 2008 on Disaster Management (President of Republic Indonesia 2008b); Head of National Disaster Management Agency Regulation Number 3, 2008 on Guidelines of Regional Disaster Management Agency Establishment (Head of National Disaster Management Agency 2008a); Head of National Disaster Management Agency Regulation Number 10, 2008 on Guidelines Disaster Emergency Response Command (Head of National Disaster Management Agency 2008b); Head of National Disaster Management Agency Regulation Number 6A, 2011 (Head of National Disaster Management Agency 2011) on Guidelines for Use of Immediate Funds in Disaster Emergencies Status. However, there is no published evidence on the efforts and efficacy of a prevention or promotion strategy in disaster mental health of the community in Indonesia. Understanding the community and nurses' awareness and knowledge of emotional responses related to disaster events will be beneficial for future policy planning on how to increase community awareness and knowledge of preparing and responding positively to disaster mental health.

1.2.3 Nurses in Disasters

Nurses are the largest group of healthcare providers who play vital roles in delivering disaster responses to an affected community. Therefore, it is essential for nurses to have a set of competencies that guide the development of their knowledge and skills in order to help people in the aftermath of a disaster. The International Council of Nurses (ICN) and World Health Organization (WHO) have formulated the ICN Framework of Disaster Nursing Competencies in 2009, which was then revised in 2019. The second version of the ICN Framework of Disaster Nursing Competencies (ICN 2019) consists of eight domains: Preparation and Planning, Communication, Incident Management, Safety and Security, Assessment, Intervention, Recovery, and Law and Ethics. Each domain has competencies for Level I and Level II nurses (Appendix 1).

The competencies listed in the framework are for nurses with three levels of experience. Nurses who just graduated from basic education such as a Diploma of Nursing and Bachelor of Nursing, and work in a hospital, clinic, or public health centre and nurse educators are included in Level I. Level II nurses are those with higher responsibilities, who have achieved Level I competencies and are in charge to provide disaster response in their institution/organization/system. Level III is for nurses who have achieved Level I and II competencies, and are responsible for wide-ranging disaster and emergencies planning and response. They are also deployable to assist in national or international disasters.

1.2.4 Nurses in Indonesia

Indonesian Nurses' Role

In Indonesia, the nurse's scope of practice is legislated and includes nursing as care provider, educator, counsellor, health promoter, communicator, nursing care manager, leader, researcher, care delegator, and a manager in an emergency situation (AIPNI 2016; President of the Republic of Indonesia 2014).

Nursing Workforce

Nurses are the largest workforce among health professionals in Indonesia (30.05%), followed by midwives (17.24%) and doctors (9.93%) (Ministry of Health, Republic of Indonesia 2017). Based on their educational background, nurses in Indonesia are divided into two categories: Professional Nurse and Vocational Nurse (Indonesian Act No. 38 2014). Professional Nurses are those with a Bachelor of Nursing (four-year academic program) and have completed a nurse internship program (approximately one year of clinical and community practice), and those who have a postgraduate degree as Specialist Nurses. Vocational Nurses are those who have graduated with a Nursing Diploma (three years of education).

Nursing Education Development

The nursing profession in Indonesia has been evolving over time. Before 1950, Indonesia did not have a concept of nursing as a profession. In that year, a school called "*Sekolah Penata Rawat*" (School of Nurses Administrator) was established. The name changed to "*Sekolah Perawat Kesehatan*" (School of Health Nurses) in 1974. This school was at the level of a senior high school. It was in 1962 when the first Nursing Academy was founded by the Department of Health of Indonesia; this

was a three-year diploma academy, based in the hospital. In 1974, the Indonesian National Nurses Association was founded, and held the first national workshop in 1983, which resulted in an agreement that nursing is a profession. In 1985, the first School of Nursing (Bachelor of Nursing level) was opened at the University of Indonesia. Despite the fact that there has been a new level of university study in nursing, the Academy of Nursing still continues, thus there are two types of nurses that are based on their level of education in Indonesia. The number of nurses is dominated by the Diploma of Nursing (77.56%), Bachelor of Nursing (10.84%), and Specialist Nurses (6.42%), and there are still a small number of nurses who graduated from the School of Health Nurses (5.17%) (Indonesian Ministry of Health 2017).

Nursing Curricula in Indonesia

Bachelor of Nursing curriculum and disaster management

For the Bachelor of Nursing curriculum, there have been five revisions of the curriculum. The first curriculum was in 1985, which has been further revised in 1999, 2008, 2010 and 2015. It is not until the last two versions of the curricula that "disaster management" has been included. In the newest curriculum (2015), the general learning outcomes related to disaster are: mastering the techniques, principals, and procedures in nursing care both independently or in a group in a disaster situation; mastering principals and procedures for basic trauma cardiac life support and advanced life support in a disaster situation, being able to conduct disaster management based on the standard operating procedure (AIPNI 2016). There are two topics that discuss topics around disaster: Psychiatric Nursing I and Disaster Nursing. Psychiatric Nursing I contains only one learning outcome related

to disasters, which is understanding psychiatric nursing care in a disaster situation.

In the Disaster Nursing topic, there are five learning outcomes as described in Table 1 below:

Table 1. Learning Outcomes and Subjects in Disaster Nursing Topic

Learning Outcomes	Subjects
Comprehensively and systematically describing integrated disaster management system in health services	1. Introduction to disaster nursing 2. Disaster impacts on health 3. Integrated disaster management system 4. Healthcare system 5. Ethics and legal aspects in disaster nursing 6. Disaster management plan 7. Policy development and planning
Conducting a rapid, appropriate and systematic assessment simulation in pre-, during and post-disaster situation	1. Concepts and models of disaster triage 2. Critical and systematic thinking 3. Pre-, during, and post-disaster systematic and community-based assessment to survivors, vulnerable population 4. Disaster surveillance 5. Documentation and report of disaster assessment
Conducting health education simulation on the prevention and management of disaster impacts, with integrating adult learning theories and principals	1. Disaster preparation and mitigation 2. Application of health education in preventing and managing the disaster impacts 3. Community empowerment 4. Education and preparedness 5. Evidence-based practice in disaster nursing
Demonstrating survivors' rescue and disaster management with regards to survivors' and responders' safety, environment safety and security, and interdisciplinary approach	1. Disaster emergency management (command, control, coordination and communication) 2. Individual and community care 3. Psychosocial and spiritual care for disaster survivor 4. Caring for vulnerable population (elderly, pregnant women, children people with chronic disease, disability, or mental illness) 5. Fulfilment of long-term needs

Conducting simulation of disaster management plan in healthcare and non-healthcare areas, with interdisciplinary approach	1. Application of disaster management with comprehensive approach in each phase (prevention, mitigation, planning/response/recovery) 2. Risk reduction, disease prevention, and health promotion 3. Communication and information dissemination 4. Psychosocial and spiritual care for disaster survivor 5. Caring for vulnerable population (elderly, pregnant women, children people with chronic disease, disability, or mental illness) 6. Protection and care for healthcare provider and caregiver 7. Interdisciplinary and multidisciplinary collaboration 8. Community empowerment

Diploma of Nursing curriculum and disaster management

The Indonesian Nursing Vocational Association has included "emergency nursing and disaster management" in the Diploma of Nursing's curriculum, since 2014 (AIPVIKI website). However, the researcher could not gain access to the older version of the curriculum for the purpose of understanding the contents for the background of this study. Also, the information on competencies and learning objectives of the "emergency nursing and disaster management" topic was not available on the website. The researcher had contacted the association via email, and also contacted one lecturer in a nursing academy for this information, but did not receive a reply. This information is important and beneficial for the discussion of nurses' awareness and knowledge of post-disaster emotional responses, as their education might have or have not provided them with the knowledge and skills related to disaster mental health.

The next section of this chapter will describe the study aim, questions, objectives, significance and the applied conceptual framework.

1.3 Study Aim and Objectives

The aim of this study is to understand the levels of awareness and knowledge of post-disaster emotional responses in adult community members and nurses in Yogyakarta, Indonesia.

The purpose of the study is to focus on the following questions:

1. How aware are adults, living in Yogyakarta, about post-disaster emotional responses?
2. What level of knowledge do adults, living in Yogyakarta, have about post-disaster emotional responses?
3. How aware are nurses who work in Yogyakarta about the potential of post-disaster emotional responses?
4. What level of knowledge do nurses who work in Yogyakarta have about post-disaster emotional responses?

The research objectives are to explore:

1. adult community members' awareness of post-disaster emotional responses
2. adult community members' knowledge of post-disaster emotional responses
3. nurses' awareness of post-disaster emotional responses
4. nurses' knowledge of post-disaster emotional responses

Having explored the research literature on disaster management, the researcher has chosen to apply a qualitative exploratory descriptive approach, specifically the

work of Birnbaum et al. (2015) who describe the "Disaster management cycle framework".

Disaster management cycle (framework)

Birnbaum et al. (2015) suggested a framework that has five phases that form a cycle of disaster management response. This framework is very important because it enables a considered response by those who work in disaster policy to consider relevant strategies for each phase of the cycle. This framework is also useful to apply when undertaking research in this area. The five phases are: disaster event, response, recovery, mitigation, and preparedness. A disaster event is an undesirable incident that occurs as a consequence of energy that is released by hazard(s) (Daily 2010). Examples of disaster events are volcanic eruptions, which occur due to the existence of a volcano (hazard) that releases lava (energy). The response phase occurs when actions are undertaken to meet the needs of the community as a result of the event (Birnbaum et al. 2015). The recovery phase is the period after a disaster event, when physical infrastructures are rebuilt, and when emotional, social, economic and physical wellbeing are restored (Council of Australian Governments 2011). The mitigation phase is a phase where activities are undertaken to prevent a future event from occurring, or to minimize the impact if a future event does occur again. The preparedness phase refers to a response capacity, specifically the community's ability to respond and prevent further damages when a disaster event occurs (Birnbaum et al. 2015).

1.4 Significance of the Study

Indonesia is one of the most disaster-prone countries in the world due to its geographic location. Members of the community being aware of stressors on their wellbeing following a disaster and being able to bounce back more quickly are important for the overall wellness of people living in disaster prone areas. For communities to become more aware of the psychological risks and be proactive in responding, nurses must be able to identify and implement strategies to effectively respond to emotional reactions to support their community.

An understanding of how well the community and nurses are aware of and understand posttraumatic emotional responses related to disaster events will be beneficial for future policy, planning and education strategies on how to increase community preparedness and resilience in Yogyakarta.

1.5 Thesis Structure

This thesis consists of six chapters: introduction, literature review, methodology and methods, findings, discussion, and conclusion. The literature review chapter will provide discussion of literature on the topic of this thesis, emotional responses and mental health after disaster events, and will identify the gap in the literature. The next chapter is methodology and methods, which presents the research theoretical framework (paradigm), setting of the study, participants, ethical considerations, data collection, data analysis, and rigour considerations. Findings from the eleven interviews with the adult community members and four focus groups with the nurses will be presented after the methodology and methods chapter, followed by the discussion chapter that will present a discussion on the study findings. The last chapter is the conclusion, which will present the study

conclusion, limitations of the study, recommendation for future research and practice, and the researcher's reflection on the research methodology and methods.

1.6 Chapter Summary

Indonesia is highly vulnerable to natural disasters due to its geographical position in the world. Yogyakarta is one of the provinces that is at high risk of disasters. This province is prone to earthquakes and volcanic eruptions. It has been noted that disasters may cause psychological impacts to the survivors. However, survivors of disasters might not have sufficient awareness and knowledge of the psychological impacts of disaster, which would prevent them from seeking help when it is needed. Nurses, as one of the front-line health practitioners in a disaster aftermath, also needed to be aware of the potential mental health problems in their community and how best to respond.

The next chapter is the literature review, which will provide analysis of the previous studies available in the databases, and show the gap in the literature that requires further research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter discusses literature on emotional responses and mental health after disaster events. It will provide a synthesis of current studies about the awareness and knowledge of emotional responses in the aftermath of disaster. It will then identify gaps in the literature that warrant further research. The primary review was conducted prior to the beginning of this study, and covered the period January 2007 to March 20017. The author surveyed the literature subsequently during the course of the study and updated the review when appropriate.

2.2 Search Strategy

Literature was identified through several databases: the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, Evidence-Based Medicine Review (EBMR), PubMed, ClinicalKey for Nursing, Cochrane Library, Embase, Joanna Briggs Institute EBP Database, Scopus, Web of Science and Health Source: Nursing/Academic Edition. Due to the limited publication of studies in the Indonesian context, a few resources are from grey literature, unpublished works including theses and reports, which were searched through Google Scholar, and which are mostly in Indonesian.

Keywords that were used in the database and grey literature searches were "awareness", "knowledge", "adult", "nurse", "posttraumatic", "posttrauma", "emotional", "response", "disaster", "Indonesia", "psychology", "resilience", "mental", and "preparedness", separately and in combination. To obtain additional relevant primary articles, reference lists from every article were also reviewed to

determine suitability. Inclusion and exclusion criteria were established to focus the literature review.

Inclusion criteria employed in this literature review were:

- Research reports published between January 2007 and May 2020.
- Primary research studies were prioritised. Hence, systematic review, literature review and meta-analyses were excluded.
- Articles published in peer-reviewed journals, except for those that were grey literature.
- Quantitative, qualitative and mixed methods studies.
- Studies relating to natural disasters. This includes studies on preparedness and resilience in relation to disaster, because they might provide more information on awareness and knowledge of emotional response in the aftermath of disaster.
- Studies involving adult participants, minimum age eighteen years old.
- Studies involving nurses.
- Articles written in English or Indonesian.

Exclusion criteria in this literature review were:

- Studies relating to human error disasters such as nuclear, oil spills, 9/11 terrorism attack, shooting, terror, war, crash, fire, coalmining.
- Studies predominantly focused on children and adolescents.
- Studies involving specific groups, such as mothers or pregnant women.
- Studies involving health-care providers other than nurses.
- Studies around ethical issues in the aftermath of a disaster.

2.3 Article Selection

Using the keywords and applying inclusion and exclusion criteria, 1275 articles were yielded. After reading the titles, 277 articles were deemed relevant. After removing duplicates, 197 articles remained, of which twenty-one were systematic reviews, literature reviews and meta-analyses, leaving 175 relevant articles. After reading the abstracts, twenty-nine articles were excluded, due to a number of reasons, for example: articles included traumatic events other than natural disaster, respondents were pregnant women, articles did not report a research study (e.g., report or discussion paper), studies involved children and adolescents, and articles about psychological treatments or management and emergency related to disaster. After reading the full text of the remaining 146 articles, twenty-five articles were further excluded, mainly because they involved participants younger than eighteen years old. The total number of relevant articles in the first stage of the literature search was therefore 121.

The subsequent search for literature was conducted every three months, using the same inclusion and exclusion criteria, keywords, and databases. These searches identified an additional sixteen articles for the literature review.

2.4 Article Analysis

The method of review used in this study is a narrative review, using thematic analysis. Narrative review is one of the styles used for the literature review process, other than systematic review, meta-analysis, and meta-synthesis (Whitehead 2013b). Compared to a systematic review, a narrative review is conducted without a specific question, search strategy, appraisal or synthesis method (Aveyard 2010). Thematic analysis identifies significant and recurring themes within previous

research findings (Mays et al. 2005 in Whitehead 2013b). Analysis was performed on each article in order to extract and summarize the major themes. The analysis involved the detection of patterns and commonalities. Analysis was performed on each article to identify themes; those themes were then synthesized across the studies. Seven themes were identified through the review of the studies. The themes that emerged were: (1) disaster impacts on health, (2) factors affecting psychological problems and vulnerable groups, (3) protective factors against psychological problems in disaster aftermath, (4) disaster and mental health services, (5) disaster and nursing profession/education, (6) positive consequences of disaster or posttraumatic growth and (7) awareness and knowledge of disaster mental health.

This chapter will discuss these themes in detail, commencing with disaster impacts on health.

2.5 Disaster Impacts on Health

This theme discusses the impacts of disasters on general and mental health. In the case of general health, previous studies showed that disasters have caused several problems, such as physical complaints, decreased functioning, and sleep disturbance. In addition, previous studies have also found that disasters have caused mental health problems such as posttraumatic stress disorder, depression, and anxiety. The next section discusses the impact of disasters on general health, followed by the impacts of disasters on mental health.

2.5.1 The Impacts of Disasters on General Health

The included studies showed that disasters cause many negative impacts on human health. In addition to physical injuries experienced as a result of direct impact, disasters also caused long-term health consequences for survivors, such as chronic pain, sleep deprivation, or a general decline in health.

A quantitative study by Wasiak et al. (2013) showed that twelve months after burn injuries caused by wildfires in Australia, survivors were still experiencing decreased general health, such as decreased ability to undertake self-care and work, less energy, and persistent pain. Although the study only involved a small number of respondents (fifteen adults), it compared their health status before and after the burn injuries. Respondents showed no disability in self-care or work and did not have complaints about energy level and pain before the wildfire (Wasiak et al. 2013). Another quantitative study by Thordardottir et al. (2015) reported that sixteen years after a snow slide in Iceland, survivors still experienced musculoskeletal and nerve problems such as chronic back pain, migraine, fibromyalgia and arthritis, as well as gastrointestinal problems such as peptic ulcer, gastritis and other gastrointestinal problems. However, Thordardottir et al.'s (2015) study was limited by its retrospective design, where information on participants' pre-disaster health status was unavailable. It was also limited by the use of self-reporting by participants, hence this study might have had biases.

In addition to chronic pain and other general health issues, previous studies also showed that, even a long time after a disaster event, survivors might still have complaints relating to their sleep. A large survey conducted by Lee et al. (2010)

involving 14,013 participants showed that two months after an earthquake in Taiwan, most survivors from a hard-hit area reported sleep deprivation. As also noted by Thordardottir et al. (2015), even sixteen years after experiencing a snow slide, survivors were still at a higher risk of sleep deprivation, compared to those who did not experience the disaster.

In China, a cross-sectional survey study by Wu et al. (2015) showed that two weeks after a flood, the healthcare-seeking rate of survivors was higher compared to the reference group. This was due primarily to increased acute upper respiratory tract infection experienced by the survivors. However, this study did not report information on the participants' health status before the flood, resulting in inability to compare pre- and post-flood health status.

2.5.2 The Impacts of Disasters on Mental Health

There are many published studies of disaster impacts on mental health. Studies have examined many psychological impacts of disaster (posttraumatic stress disorder, depression, anxiety, and other mental health problems), in a varied range of timeframes in the disaster aftermath (months to years), and in different kinds of disasters (earthquake, flood, hurricane, volcanic eruption, wildfire).

Posttraumatic Stress Disorder

Posttraumatic stress disorder (PTSD) is the most frequently studied psychological impact of disaster. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) has included PTSD in trauma- and stressor-related disorders, with the criteria as follows; "1) exposure of actual or threatened death, serious injury, or sexual violence; 2) presence of intrusion symptoms associated with the

traumatic events; 3) persistent avoidance of stimuli associated with the traumatic event; 4) negative alterations in cognitions and mood associated with the traumatic event; 5) marked alterations in arousal and reactivity associated with traumatic event; 6) duration of the disturbance of more than 1 month; 7) the disturbance causes clinically significant distress or impairment in social, occupational, or other area of functioning; and 8) the disturbance is not attributable to the physiological effect of a substance" (APA 2013, pp. 271-272).

A quantitative study conducted after a flood in Spain reported that flood survivors had a higher risk of PTSD, up to 8.18 times compared to the general population (Fontalba-Navas et al. 2017). Lee et al. (2010), in their survey study, reported that PTSD was the most prevalent mental health disorder, five months after an earthquake in Taiwan. Previous studies have showed variation in the PTSD prevalence in the aftermath of disasters, ranging from 6.1% to 100% (Chen et al. 2015; Cofini et al. 2015; Dai et al. 2017; Fernandez et al. 2017; Galea et al. 2008; Heo et al. 2008; Hikichi et al. 2016; Khachadourian et al. 2015; King et al. 2016; Kraemer et al. 2009; Kukihara et al. 2014; Priebe et al. 2009; Risler, Kintzle & Nackerud 2015; Thordardottir et al. 2015; Thordardottir et al. 2019; Tracy, Norris & Galea 2011; Wang et al. 2011;).

The large variation in the prevalence of PTSD in the aftermath of disasters might be due to several factors, including the characteristics of participants in the studies, the nature of the disasters, the period of data collection, the PTSD measure, the cut-off point and the methods and methodology used in the study. The influence of participants' characteristics on the prevalence of PTSD was shown in a quantitative

study by Kukihara et al. (2014), after an earthquake and tsunami in Japan. The study showed that 53.5% of respondents had clinically concerning symptoms of PTSD, and 33.2% of them manifested into clinical PTSD symptoms. This result might be because the study mostly involved older people, who appear to have greater vulnerability to PTSD compared to younger people, as has been suggested by another quantitative study (Kraemer et al. 2009). A survey study by Risler, Kintzle and Nackerud (2015) reported that all earthquake survivors in Haiti experienced clinical and chronic PTSD. However, this study only involved a small number of participants (sixty-five survivors). In addition, all of the participants in Risler, Kintzle and Nackerud's (2015) study were all relocated or lived in temporary shelter, which might put survivors in greater distress.

In addition to participants' age and residency status, factors such as mental health condition before disaster events might have an association with PTSD. Fernandez et al. (2017), in their longitudinal cohort study in Chile, reported that post-disaster PTSD was associated with pre-disaster mental health conditions. Moreover, mental health issues that accompanied survivors' PTSD might have also influenced the severity of PTSD. Lee et al. (2010) found that PTSD was also a comorbidity to other mental health problems (depression and anxiety) and suggested that half of those with PTSD might have had anxiety or depression before the disaster. Dai et al. (2017) also reported that 6.2% of participants experienced PTSD accompanied with anxiety, seventeen years after a flood in China.

Previous studies examining PTSD as an outcome of disasters have been conducted on various types of disaster, such as hurricanes (Chen et al. 2015; Galea et al. 2008;

King et al. 2016; Tracy, Norris & Galea 2011), tsunami (Hikichi et al. 2016; Kraemer et al. 2009), earthquakes (Fernandez et al. 2017; Khachadourian et al. 2015; Kukihara et al. 2014, Lee et al. 2010, Risler, Kintzle & Nackerud 2015; Thordardottir et al. 2019), floods (Dai et al. 2017; Fontalba-Navas et al. 2017; Heo et al. 2008), and avalanches (Thordardottir et al. 2015). The unique nature of each disaster might have caused different impacts to survivors and to their environment, which subsequently affected their experience and mental health in diverse ways.

The time when studies were conducted might have also influenced the prevalence of PTSD. Previous studies have been conducted using various lengths of time after the disaster events, from months to one year (Chen et al. 2015; Kukihara et al. 2014; King et al. 2016; Lee et al. 2010; Risler, Kintzle & Nackerud 2015; Tracy, Norris & Galea 2011; Thordardottir et al. 2019), or more than one year (Dai et al. 2017; Fernandez et al. 2017; Galea et al. 2008; Heo et al. 2008; Hikichi et al. 2016; Khachadourian et al. 2015; Kraemer et al. 2009; Thordardottir et al. 2015). Three of the studies were conducted a very long period after disasters: sixteen years after a snow slide in Iceland (Thordardottir et al. 2015), seventeen years after a flood in China (Dai et al. 2017), and twenty-three years after an earthquake in Armenia (Khachadourian et al. 2015).

Previous studies have also employed different measures to examine PTSD in participants. The Impact of Events Scale-Revised (IES-R) has been the most commonly used instrument (Heo et al. 2008; Kukihara et al. 2014; Risler, Kintzle & Nackerud 2015), as well as the PTSD Checklist-Civilian version (PCL-C) (Dai et al. 2017; Khachadourian et al. 2015; Tracy, Norris & Galea 2011). Other studies

have used interviews based on the Diagnostic and Statistical Manual of Mental Disorders IV, Text Revision (DSM-IV-TR) (Fernandez et al. 2017; King et al. 2016), self-reported Post-traumatic Diagnostic Scale (PDS) (Kraemer et al. 2009; Thordardottir et al. 2015), PTSD module of the Composite International Diagnostic Interview (CIDI) for the Diagnostic and Statistical Manual of Mental Disorder (Galea et al. 2008), the Screening Questionnaire for Disaster Related Mental Health (Hikichi et al. 2016), posttraumatic symptoms checklist (Lee et al. 2010), and Chinese version of the PTSD symptom scale interview (Chen et al. 2015). While all measures in the studies had been validated, the use of different measures might have affected whether and how survivors were categorized as having PTSD. For example, a survey study in China used a screening instrument, not a diagnostic interview, resulting in the identification of a PTSD-like mental disorder (Wang et al. 2011). It is therefore possible that the prevalence of PTSD provided by their study was different if measured with other instruments.

Depression

Studies have consistently reported that depression is one of the psychological problems that most often occurs in the aftermath of a disaster. Lee et al. (2010) reported that five months after an earthquake in Taiwan, major depressive disorder was one of the most frequent psychiatric disorders, after PTSD. Similar to studies on PTSD, studies exploring depression as a mental health consequence of disaster events have showed varied prevalence. Studies in the current literature review showed that the prevalence of depression in the aftermath of disaster ranged from 4.9%-89.66%. It varied from mild to severe depression, and was experienced in several kinds of disaster, from two months to twenty-three years after the disaster

events (Chen et al. 2015; Heo et al. 2008; Khachadourian et al. 2015; Kim et al. 2008; King et al. 2016; Kukihara et al. 2014; Kraemer et al. 2009; Thordardottir et al. 2019; Tracy, Norris & Galea 2011). As in PTSD, the prevalence of depression following a disaster event might be due to several factors. For example, a survey study in Korea by Heo et al. (2008) reported a very high prevalence of depression (89.66%), likely because this study only involved sixty-seven residents from a seriously damaged area after a flood.

Anxiety

In addition to PTSD and depression, anxiety has been frequently investigated as a psychological problem occurring after disaster events. Bei et al. (2013) reported that anxiety levels of respondents increased after floods in Australia. Kraemer et al. (2009) found that 17.8% of respondents experienced anxiety 2.5 years after the Indian Ocean tsunami. Dai et al. (2017) conducted a study seventeen years after a flood in China, and found that the prevalence of anxiety was 9.2% and 6.2% when it was experienced together with PTSD. Khachadourian et al. (2015) reported that the anxiety prevalence was 28.9%, twenty-three years after an earthquake in Armenia. Whilst it is interesting that participants still reported anxiety after a very long period following a disaster event, studies conducted a long time after a disaster event might have limitations and biases. These include the absence of control groups, the use of cross-sectional methods without pre- and post-test, and the influence of confounding factors that have not been controlled by investigators.

A quantitative study by Thordardottir et al. (2019) conducted with adults in Iceland after an earthquake showed that the prevalence of anxiety two months after the

earthquake was 6.4%, but that this prevalence reduced twelve months after the earthquake. This study suggested that, unlike PTSD and depression symptoms that were persistent during the time of study, anxiety symptoms decreased over time. This study further suggested that there should be continued care for those who were affected by disasters and those who were vulnerable (Thordardottir et al. 2019).

Other mental health issues in the aftermath of disaster

In addition to PTSD, depression and anxiety, which have been widely studied in the literature, several other mental health issues have been explored in relation to disaster events. For instance, Lee et al. (2010) showed that dysthymia was one of the most prevalent mental health problems after PTSD and depression, after the Great Earthquake in Taiwan. A quantitative study by Cao et al. (2013) examined family functioning, eighteen months after the Wenchuan earthquake in China, and showed that the disaster had caused 50% of the respondents to experience family dysfunction, which ranged from moderate to severe. A study by McDermott and Cobham (2012) also showed that after a natural disaster in Australia, 28.3% of the participants reported family dysfunction, which was higher compared to the rate in the wider community. Bei et al. (2013) demonstrated a decreased Life Satisfaction Scale score in the whole group of Australian respondents after a flood. However, there was no difference between the subgroups of respondents personally affected and not personally affected by the flood. Those who were personally affected were participants who "reported that their personal home, land, or business had been isolated, or that they had suffered financial loss or damage as a consequence of the floods", while those who were not personally affected were those who "reported no direct or indirect experience with floods between pre- and post-flood surveys" and

those who "reported that their community was isolated, and/or daily routine disrupted, but suffered no personal loss or damage" (Bei et al. 2013, p. 995). A quantitative study after the Great East Japan earthquake showed that the suicide rate decreased just after the disaster, but then increased one-two years later following the disaster (Orui et al. 2015). Orui et al. (2015) suggested that the decreased rate of suicide just after the disaster might be due to the increased number of jobs offers that subsequently increased economic status. However, this study did not explain further why there were increased job offers in the aftermath of disaster. The decreased suicide rate also resulted from the intensive and long-term mental health services available after the disaster (Orui et al. 2015).

2.6 Factors Affecting Psychological Problems and Vulnerable Groups in the Disaster Aftermath

2.6.1 Disaster Exposure

Previous studies have examined the association between disaster exposure and psychological problems following disaster. Different disasters brought different types of exposure to survivors. Disaster exposure that was included in the previous studies and which correlated with mental health consisted of: experiencing intense danger of death to self and others, witnessing abandoned children, seeing dead bodies, being trapped for a long time, having lost a close family member or a friend, experiencing physical injury, living in a severely damaged area, physically experiencing the hurricane, witnessing injured people, and being in the flood water (Galea et al. 2008; Heir & Weisaeth 2008; King et al. 2016; Rosellini et al. 2014; Sattler et al. 2014; Tracy, Norris & Galea 2011; Wang et al. 2011; Warsini et al. 2015; Xu et al. 2011).

Several studies have shown that disaster exposure places survivors at a higher risk for PTSD (Bei et al. 2013; Galea et al. 2008; Heir & Weisaeth 2008; King et al. 2016; LaJoie, Sprang & McKinney 2010; Navarro-Mateu et al. 2017; Rosellini et al. 2014; Sattler et al. 2014; Tracy, Norris & Galea 2011; Wang et al. 2011; Warsini et al. 2015), anxiety (Bei et al. 2013; LaJoie, Sprang & McKinney 2010) and depression (King et al. 2016; LaJoie, Sprang & McKinney 2010; Tracy, Norris & Galea 2011). However, Bei et al. (2013) reported that there was no difference in depression levels between those who were and those who were not personally affected by a flood. This might be because this study only involved respondents with lower levels of depression symptoms. This study also did not show differences in the impacts of floods between groups who had and who had not experienced floods before (Bei et al. 2013).

2.6.2 Age

Previous studies have shown inconsistencies relating to the effect of age on mental health outcomes in the disaster aftermath. Some studies have found no correlation between age and mental health outcome such as PTSD, depression, anxiety, life satisfaction, and general health (Assanangkornchai et al. 2007; Bei et al. 2013; Cofini et al. 2015; Heir & Weisaeth 2008; Risler, Kintzle & Nackerud 2015; Wiley et al. 2011). Heir and Weisaeth (2008) argued that a tsunami was such a catastrophic event that it was perceived in the same way by every age level, regardless of their previous experience with disaster. Other studies found that older adults were at higher risk of some mental health problems, such as PTSD (Kraemer et al. 2009; Priebe et al. 2009), depression (Masedu et al. 2014), anxiety (LaJoie, Sprang & McKinney 2010), lower satisfaction with psychological health (Valenti et al. 2013),

and more psychological and mental health problems in general (Lee et al. 2010; Suar, Mishra & Khuntia 2007; Xu & Wu 2011). Other studies have shown contrary findings, suggesting that those in younger age groups were more likely to experience depressive symptoms (Kukihara et al. 2014) and have higher scores on the Impact of Event Scale-Revised (IES-R), an instrument that measures PTSD symptoms (Warsini et al. 2015).

2.6.3 Gender

The association between gender and mental health problems is one of the most frequently studied topics in the aftermath of disaster. Previous studies have shown inconsistent findings about how gender is correlated with mental health issues. There were three groups of studies; the first group argued that there was no correlation between gender and mental health problems in the aftermath of disaster, the second argued that females were at a higher risk of mental health problems, and the third argued that males were more vulnerable to mental health problems after a disaster.

Only a few studies showed no evidence of correlation between gender and mental health problems in the aftermath of disaster. Bei et al. (2013) revealed there was no difference in the PTSD, depression, anxiety, life satisfaction and perceived health scores in males or females. Risler, Kintzle and Nackerud (2015) also reported there was no difference in the IES-R score based on participants' gender. Assanangkornchai et al. (2007) reported that gender did not correlate with the general health score after a major flood in Thailand.

Most studies suggested that females were at a higher risk of mental health problems following a disaster. Heir and Weisaeth (2008) reported that more women experienced psychiatric distress, as shown by higher mean General Health Questionnaire (GHQ–28) total scores, after a disaster. However, that only applied when the danger exposure levels were low. With increased danger exposure, both women and men showed the same psychological outcomes (Heir & Weisaeth 2008). Other studies showed that females were more vulnerable to PTSD (Cofini et al. 2015; Dai et al. 2017; Galea et al. 2008; Ikizer, Karanci, Dogulu 2016, Kraemer et al. 2009; LaJoie, Sprang & McKinney 2010; Priebe et al. 2009; Wang et al. 2011, Warsini et al. 2015; Xu & Deng 2013), depression (Kukihara et al. 2014; LaJoie, Sprang & McKinney 2010; Masedu et al. 2014; Navarro-Mateu et al. 2017), anxiety (LaJoie, Sprang & McKinney 2010; Navarro-Mateu et al. 2017; Scher & Ellwanger 2009), and fear of future negative events, such as hurricanes, terror attacks, nuclear disasters, personal accidents or illness, and death (Hamama-Raz et al. 2015).

While many studies have shown that women were more vulnerable to psychological problems after a disaster, a study by Valenti et al. (2013) showed that men's psychological quality of life was worse than women's and that women showed better resilience compared to men, eighteen months after an earthquake in Italy. Chen et al. (2015) reported on a study in China that depression in males was more persistent than in females. In addition, Sampson et al. (2016) reported that male participants perceived a higher need for mental health services than the female participants, after Hurricane Sandy in the USA. This, however, did not mean that the male participants actually attended mental health services.

2.6.4 Employment

There have been inconsistencies relating to the reported association between employment status and mental health outcomes in the aftermath of a disaster. Kukihara et al. (2014) and Cofini et al. (2015) suggested that unemployment was correlated with mental health following a disaster. According to Kukihara et al. (2014), unemployment was correlated with depressive and PTSD symptoms in a disaster aftermath, and Cofini et al. (2014) suggested that unemployed participants in their study were more likely to experience PTSD following a disaster. Different findings were shown by Bei et al. (2013), who reported that there was no difference in PTSD, depression, anxiety, life satisfaction and perceived health scores in working and non-working respondents following a disaster. However, Bei et al. (2013) only involved respondents who experienced fewer symptoms of depression. Similar to Bei et al. (2013), Brown et al. (2013) also showed that employment status did not correlate with psychiatric symptoms after a typhoon in Vietnam.

2.6.5 Loss

Previous studies have shown that loss caused by disaster events is associated with psychological problems amongst disaster survivors. Bei et al. (2013) showed that financial loss related to floods caused a higher IES-R total score, meaning that participants reported more PTSD symptoms. After Hurricane Katrina, survivors who experienced financial loss were reported to have more symptoms of PTSD (Galea et al. 2008). Similarly, Chen et al. (2007) showed that survivors of disaster who had financial problems after the disaster showed more PTSD symptoms, or poorer mental health, in general. In addition, Lowe et al. (2015) suggested that financial loss was correlated with lower mental health wellbeing following a

disaster. Similar to financial losses, material losses and property damage were also reported to have significant correlation with PTSD in the aftermath of a disaster (Davidson et al. 2013; Fontalba-Navas et al. 2017). In addition to PTSD, several studies reported that losses caused by disasters, such as property damage, loss of services (Davidson et al. 2013), loss of properties (King et al. 2016; Tracy, Norris & Galea 2011), and loss job (King et al. 2016) were associated with depression.

The other form of loss is that of loved ones (friends or family), which was one of the strongest predictors of mental health problems in tsunami survivors in Norway (Heir & Weisaeth 2008). This quantitative study suggested that those who lost their friends or family members showed more psychological symptoms than those who did not lose friends or family (Heir & Weisaeth 2008). However, in this study, data were collected six months after the disaster and the authors did not control for factors, such as stressors experienced by participants other than the disaster exposure, which might interfere with the findings. A study by Lee, Shen and Tran (2009) agreed with Heir and Weisaeth (2008), confirming that loss of loved ones was the most significant factor that caused psychological distress, and subsequently affected psychological resilience after a disaster.

In addition to the loss of loved ones, survivors of disasters were more vulnerable to mental health problems when they experienced loss of sentimental possessions. Tracy, Norris and Galea (2011) reported that loss or damage of sentimental possessions was associated with PTSD and depression, while Lowe et al. (2015) suggested that loss of sentimental items or pets was correlated with lower mental health wellbeing.

2.6.6 Evacuation

One of the most common effects of disaster is evacuation of survivors. Scher and Ellwanger (2009) suggested that there was no difference in the health outcomes between survivors who evacuated and those who did not after a wildfire disaster in California. In contrast, Bei et al. (2013) suggested that moving to an unfamiliar place caused survivors to experience higher symptoms of PTSD and depression. Risler, Kintzle and Nackerud (2015) reported that participants who were evacuated had higher total IES-R scores compared to those who resided in their own place. King et al. (2016) also suggested that being evacuated was related to PTSD and major depressive disorder. However, LaJoie, Sprang and McKinney (2010) reported that survivors who returned to their houses after being relocated had higher levels of anxiety, depression and PTSD compared to those who stayed at the evacuation site. It was argued that the stress after returning home was due to the fact that the survivors' houses were damaged, services were not yet available, and families were not reunited (LaJoie, Sprang & McKinney 2010). In contrast to LaJoie, Sprang and McKinney (2010), Muir et al. (2019), in their quantitative study conducted with volcanic eruption survivors in Indonesia, reported that participants who had moved back to their homes had better mental health compared to those who stayed in shelters. Furthermore, participants who moved to new homes in a new community reported better mental health compared to those who moved to their homes or who stayed in the shelters (Muir et al. 2019).

2.6.7 Lifestyle

Lifestyle is among the factors that influence physical and mental health. In the disaster aftermath context, a study conducted in Japan by Kukihara et al. (2014)

showed that poor eating/exercise habits, abstaining from alcohol, and sleeping less than six hours were related to depressive symptoms. Kukihara et al. (2014) suggested that those who drank alcohol showed higher resilience because, in Japanese culture, drinking is related to social activities and social meaning. However, this study did not discuss the amount of alcohol that the participants had consumed. Bei et al. (2013) showed that respondents who experienced disruption of daily routines reported higher symptoms in all three subscales of the PTSD. Disruption to daily routines was also correlated with depression levels and perceived health (Bei et al. 2013).

2.6.8 Previous Mental Health Disorders

A study by Fernandez et al. (2017) showed that pre-disaster mental health conditions, such as dysthymia, psychotic disorder, anxiety disorders, panic disorder, phobias, and hypochondriasis, were predictors of PTSD in adult respondents in Chile after an earthquake. Kim et al. (2008) and Lowe et al. (2015) similarly reported that pre-disaster depression was associated with poor mental health condition following disaster events.

2.6.9 Religion and Religiosity

A study in China comparing two ethnic groups showed that the group who had strong religiosity reported lower acute stress reactions (Xu et al. 2011). Xu et al. (2011) argued that religion had helped survivors to cope with the anxiety experienced after the disaster through daily rituals and explanations for their earthquake-related loss. In contrast, a study by Hussain, Weisaeth and Heir (2011) showed that religious beliefs and religiosity had no correlation with the prevalence

of posttraumatic stress and long-term mental health problems. However, Hussain, Weisaeth and Heir's study (2011) was only a cross-sectional study, and could not draw cause-effect relationships. This study also only used one question to measure the participants' religious belief (do you feel that you have become more religious after the tsunami?) and religiosity (how much is religion a source of strength and comfort to you?). These questions might not be accurately answered by participants because they might have different perceptions as to the meaning of, or what constitutes religiosity.

A study by Ikizer, Karanci and Dogulu (2016) showed that mental health problems were correlated with level of religiousness. This study found that the more religious survivors had higher scores for PTSD. However, this study only employed one question regarding religiosity, which was: "To what extent do you describe yourself as religious?" This is potentially a difficult question to answer given the definition of religious or religiosity might not be clear and might differ between people. A study in the USA used a more complex questionnaire regarding religiosity, which consisted of three elements: involvement in faith community, non-organizational religiosity, and religious beliefs and coping (Cherry et al. 2015). Cherry et al. (2015) showed that non-organizational religiosity was significantly correlated to PTSD, meaning that those who did not have affiliation with the church showed greater symptoms of PTSD. Another study by Rosellini et al. (2014) investigated the correlation between religiosity and PTSD and found that "turning to God" after Hurricane Katrina was not correlated with decreased severity of PTSD. Furthermore, those who believed that disaster was a punishment from God tended to have severe PTSD (Rosellini et al. 2014).

2.6.10 Education

While one study suggested that education level had no correlation with PTSD (Cofini et al. 2015), most studies showed that lower education was correlated with mental health problems in the aftermath of disaster. Valenti et al. (2013) suggested that less educated participants reported the worst quality of life, after an earthquake in Italy. Similarly, a pre- and post-test study in Vietnam showed that typhoon survivors with lower education levels were more likely to experience psychiatric symptoms (Brown et al. 2013). Tracy, Norris and Galea (2011) suggested that lower education was associated with depression, while Priebe et al. (2009), Wang et al. (2011) and Xu and Deng (2013) suggested that lower education was associated with PTSD. Frankenberg et al. (2014) explained that survivors of the Indian Ocean tsunami with better education tended to show higher resilience, because they had greater financial and social resources than those with less education.

2.6.11 Social Support and Social Cohesion

Social support is a factor that has been widely studied and has shown a positive influence on mental health in the aftermath of disaster. Strong social support has been shown to prevent the occurrence of mental health issues, such as PTSD and depression, despite the personal impact and damage associated with disaster (West et al. 2013). Bei et al. (2013) suggested that lack of social support was a risk factor for poorer mental and physical health for floods survivors in Australia. Similar to Bei et al. (2013), Galea et al. (2008) found that low social support was correlated with more PTSD symptoms in Hurricane Katrina survivors, while Chen et al. (2007) showed that those with more social support had better mental health following Hurricane Katrina. In the early phase of recovery, six-twelve months

after disaster, more social support has been associated with less posttraumatic stress disorder (Kaniasty & Norris 2008). In addition, Khachadourian et al. (2015) suggested that social support was significantly associated with quality of life of earthquake survivors in Armenia. Even seventeen years after a flood in China, Dai et al. (2017) found that that low levels of social support were associated with PTSD, anxiety and long-term psychological issues amongst survivors. Sasaki et al. (2019) found that pre-disaster social support was correlated with lower depression symptoms in the Great East Japan earthquake and tsunami.

In addition to social support, a study on individual and community social cohesion found that community social cohesion was associated with a lower risk of PTSD after a disaster event (Hikichi et al. 2016). This study also suggested that community social cohesion was significantly correlated with stronger resilience in the aftermath of disaster. Social cohesion in this study was defined as the sense of connectedness and solidarity after a disaster (Hikichi et al. 2016). A study by Heid et al. (2017) also showed the same finding, wherein participants with higher levels of social cohesion showed lower levels of PTSD, even though they had high exposure to Hurricane Sandy.

2.6.12 Resilience

Resilience is defined as "an ability to recover from or adjust easily to misfortune or change" (Merriam-Webster's Online Dictionary 2020). In relation to disasters, Aldunce et al. (2014) suggested that the main idea of resilience is the ability to "bounce back", which has three alternatives: first: the reestablishment of pre-disaster conditions; second: the effort to manage and adapt in the disaster aftermath,

which results in decreased risks; and third: to view disasters as opportunities to better prepare, adapt, be proactive and innovate. A cross-sectional study in China, conducted after an earthquake, has shown the important role of resilience in the aftermath of a disaster (Meng, Wu & Han 2018). The study showed that the negative effects of PTSD on post-traumatic growth was reduced by resilience. Furthermore, this study suggested that resilience helped survivors to cope and recover (Meng, Wu & Han 2018). Similarly, a study by Kukihara et al. (2014), in Japan after an earthquake and tsunami, showed that resilience was a protective factor against depression, PTSD and general health.

2.6.13 Coping Ability

Disaster, as with many other traumatic events, requires survivors to adapt. Previous studies have shown that in the aftermath of disasters, survivors used several coping mechanisms to help them adapt. A study conducted after a flood in Australia reported that people used various types of coping mechanisms, which influenced their mental health states (Bei et al. 2013). Some survivors who used maladaptive coping strategies, such as venting and distraction, reported worse mental health after the floods, while adaptive coping strategies such as acceptance, positive reframing, and humour acted as protective factors against deterioration (Bei et al. 2013). This finding was confirmed by Cofini et al. (2015) who reported that the use of maladaptive coping strategies increased mental health problems in participants after an earthquake in Italy. Fahrudin (2012) conducted a cross-sectional survey in Indonesia, and found that coping behaviour was a moderating variable, which influenced the relationship between psychosocial reaction and traumatic stress. Ikizer, Karanci and Dogulu (2016) suggested that ability to cope was correlated

with avoidance symptoms. In this case, avoidance was considered as an adaptive coping method, at least for a short time period, to increase hope and reduce stress.

It seems that disaster survivors adopt different ways of coping in the aftermath of a disaster. Cofini et al. (2015) observed that differences in coping mechanisms were related to age groups, and genders. Older adults were more likely to use religious coping and behavioural disengagement, while younger adults used emotional support, self-blame, humour and substances more frequently. In addition, adults older than fifty-five years were less likely to use acceptance. Related to gender, men were more likely to use humour, while women were more likely to use denial and venting (Cofini et al. 2015).

2.6.14 Other Factors

Many other factors have been studied in relation to the occurrence of mental health problems in the aftermath of disasters. Some factors that were shown to have an association with mental health problems in the aftermath of disasters are neurotic personality type (Ikizer, Karanci & Dogulu 2016), nervous traits (Lee et al. 2010), ethnic/race/cultural background (Davidson et al. 2013; Xu et al. 2011), identity distress (Wiley et al. 2011), less use of social media (Masedu et al. 2014), low income (Navarro-Mateu et al. 2017), owning fewer consumer goods and having lower quality of services such as clean water, toilet and fuel supply (Brown et al. 2013), physical injury (Sudaryo et al. 2012), chronic illness (Li et al. 2020), and anxiety of future earthquakes (Sattler et al. 2018).

Previous studies have also identified factors that are not correlated to mental health outcomes in the aftermath of disaster, including genetic factors (Dunn et al. 2014),

parental status (Nygaard et al. 2011), quality of the household build and insurance status prior to disaster (Brown et al. 2013).

Marital status has shown inconsistency in relation to mental health problems in the aftermath of disaster. One quantitative study by Nygaard et al. (2011) reported that marital status had no correlation with the occurrence of post-traumatic stress, while a quantitative study by Wang et al. (2011) showed that survivors who were married had a higher risk of PTSD compared to those who were unmarried. This study suggested that the Chinese family pattern might have influenced the correlation between marital status and PTSD (Wang et al. 2011), which might be different from the Norwegian family pattern in Nygaard et al.'s (2011) study.

In summary, several studies have been undertaken to investigate the association of various factors with mental health problems after disaster. However, many factors did not have a consistent correlation with mental health problems, indicating that mental health problems are complex issues that cannot be seen as the result of one particular factor in individuals.

2.7 Disaster Impact on Nurses' Mental Health

Nurses are health professionals who often become the front liners in the disaster response and relief phases. Previous studies have explored the impacts of disasters on nurses' mental health and wellbeing. A qualitative study with nurses, after an earthquake in New Zealand, reported that nurses felt various kinds of emotions, such as "fear, guilt, pride, apathy, gratitude, relief, empathy, frustration, sadness, happiness and anxiety" (Johal et al. 2015, p. 12). However, nurses in the study reported that they were busy taking care of the earthquake survivors, so they did

not pay attention to their own emotions. A qualitative study by Wenji et al. (2015) reported that nurses in their study experienced sadness when providing care for earthquake survivors. Their sadness continued to affect their mental health for years (Wenji et al. 2015). Nurses in another study mentioned that they experienced compassion fatigue due to the high workload in the aftermath of a disaster (Johal et al. 2015). Moghaddam et al. (2014) suggested that the intense emotional stress that was experienced by nurses in Iran, in the earthquake aftermath, had affected their clinical performance. However, they did not mention in detail which areas of performance were affected and how that impacted on patient care.

A quantitative study by Li et al. (2015) reported that after responding to a disaster event, nurses in China experienced psychological problems, such as nightmares, and avoided talking about their experience. Furthermore, nurses' psychological problems influenced other team members' and survivors' psychological reactions. Nurses in Li et al.'s (2015) study suggested that having a psychologist with them might have been helpful for their wellbeing. Moghaddam et al. (2014) also agreed that nurses and other responders should be provided with counsellors who could provide psychological support.

Furthermore, nurses in China expressed their inadequate skills and knowledge in relation to mental health care, which had caused them to feel unable to help earthquake survivors with mental health problems (Wenji et al. 2015). These feelings of inadequacy in helping survivors' emotional responses were also reported by nurses in Iran (Moghaddam et al. 2014).

A case-control study conducted with Red Cross nurses, after an earthquake in China, showed that nurses who were involved in disaster relief had a higher prevalence of PTSD, depression and suicidal thoughts compared to the control group of nurses who did not participate in the rescue activities (Zhen et al. 2012). While the rates of psychological problems were 30%, 27.1%, and 8.6% for PTSD, depression and suicidal ideation, respectively, only 4.3% of nurses sought professional help (Zhen et al. 2012).

2.8 Disaster and the Nursing Profession/Education

In most communities, nurses are the largest group of healthcare providers, and are at the front line of disaster responses. Nurses, with their "unique" competencies, have been relied on to provide services in disaster events (Powers 2010).

Previous studies have highlighted the importance of education and training for healthcare providers and nurses. Cianelli et al. (2013) pointed out that mental health training had changed healthcare providers' perceptions of mental health problems and provided them with the required knowledge and skills to respond to the community needs for mental health services. Therefore, nurses could respond quickly and effectively, and develop appropriate interventions for those who experienced mental health problems after a disaster (Cianelli et al. 2013). A study by Li et al. (2015) reported that nurses who were interviewed were not prepared to respond in the disaster aftermath, either educationally or psychologically. Nurses reported that they had low levels of knowledge regarding psychological or mental health care, which they believed was crucial for nurses. Nurses argued that nurses should be educated and skilled before engaging in disaster response, so they have

more confidence (Li et al. 2015). The importance of training in psychological crisis intervention for nurses was also reported by Yan et al. (2015). Nurses considered that psychological intervention skills were important, however, they did not have sufficient knowledge and skills to perform it, hence they felt the need for training (Yan et al. 2015).

2.9 Disaster and Mental Health Services

There have been concerns regarding the increased need of mental health services in the aftermath of disaster. A study from New Zealand reported that after the Canterbury earthquake, an increased number of patients presented at the local mental health services, suggesting there were psychiatric problems, social disturbances, behavioural changes and deterioration, after the earthquake (Beaglehole et al. 2017). This study also suggested that in the future, mental health services need to anticipate and plan for the disaster effects, so the impacts could be minimized and care for patients would be improved (Beaglehole et al. 2017). A study in Japan conducted with survivors of four disaster events reported that there was an increased number of mental health consultations from days zero-two, which reached the peak in the first week (Takahashi et al. 2020). This study further suggested that there was a need for mental health care in the acute phase of disaster, although some conditions such as PTSD or depression might only be diagnosed after a certain period of time. In addition, a qualitative study conducted in Indonesia reported that disaster survivors expected that nurses could provide both physical and mental health care in the evacuation camps, and provide information regarding the survivors' health (Susanti et al. 2019).

However, a quantitative study by Wang et al. (2008) showed two important findings: first, that a disaster event had disrupted regular treatment for survivors with prior mental health problems, and second, only 18.5% of survivors with new-onset mental health problems received treatment after the disaster. The low percentage of survivors seeking help regarding their mental health problems was due to low awareness of their mental health issues (Wang et al. 2008).

2.10 Positive Consequences of Disaster

While it is generally understood that disasters bring negative consequences to human life, some studies have shown that disasters can lead to some positive outcomes for the community. Some positive consequences that have been explored by previous studies include posttraumatic growth, community solidarity, family cohesion, preparedness, and better infrastructures.

Kraemer et al. (2009) reported that those who were directly exposed to the 2004 Indian Ocean tsunami showed significantly higher scores on the Posttraumatic Growth Inventory (PTGI). Posttraumatic growth is "the experience of positive change that occurs as a result of the struggle with highly changing life crises" (Tedeschi & Calhoun 2004, p. 1). Sattler et al. (2014) suggested that posttraumatic growth was positively correlated with social support, and problem-focused coping, in both the short and long term after disaster. Both Pooley et al. (2013) and Seo and Lee (2020) reported that post-disaster growth was positively correlated with post-disaster stress, meaning that the higher the stress experienced by survivors, the higher the post-disaster growth. First et al. (2018) confirmed this finding, and suggested that those who experienced post-traumatic stress were more likely to

search for meaning and growth after a disaster. However, a quantitative study by Ma, Xia, and Lin (2019) that was conducted ten years after the Wenchuan earthquake in China suggested that only survivors of moderate levels of disaster exposure would show high levels of post-traumatic growth. Those who experienced low or high levels of disaster exposure only showed low levels of posttraumatic growth.

Harms et al. (2018), in their mixed methods study after the bushfire in Australia in 2011, revealed that posttraumatic growth was obtained through three experiences: the increased relationships in family, communities and organizations during the recovery process; the achievement of new or the re-invention of old skills; and the expression of growth in creative activities such as poetry, writing or speech.

A study by Labra, Maltais and Tremblay (2017) suggested that after an earthquake in Chile, besides some negative feelings, male adults sensed more solidarity in their community, had stronger spiritual values, and had better relationships with family, relatives, and friends. Similarly, Cao et al. (2013) found that there was increase of family cohesion, after the Wenchuan earthquake in China, which subsequently contributed to less emotional and social loneliness. Stanko et al. (2015), in their two-stage qualitative study, two years and five years after Hurricanes Katrina and Rita, showed that participants from the first stage of the study reported that they felt prepared and learned from their experience, better infrastructures in the city, and experienced solidarity amongst community members. The second stage of the study showed consistent findings regarding preparedness and solidarity among the community, and improved family relations and social cohesion (Stanko et al. 2015).

2.11 Awareness and Knowledge of Mental Health in the Aftermath of Disaster

There are limited studies that have investigated the awareness and knowledge of mental health in relation to disaster. A number of previous studies have suggested that the awareness and knowledge of the mental health impact of disasters correlated with the rate of survivors who sought help for their mental health problems in the aftermath of disaster.

A study by Kraemer et al. (2009), conducted with Swiss tourists who had experienced the Indian Ocean tsunami in 2004, suggested that a low percentage (40%) of survivors obtaining the treatment they needed might be due to health professionals' low awareness of the mental health impacts of disaster. Kraemer et al. (2009) proposed that the low awareness of the psychological impacts of disaster was due to the low frequency of massive natural disaster in Switzerland.

A study by Lee et al. (2010) found that only 42% of survivors of an earthquake in Taiwan who experienced mental health problems sought help from professionals. This finding suggested that healthcare providers must persuade disaster survivors to seek help and treatment, and increase their awareness of PTSD prevalence after disaster. Lee et al. (2010) further suggested that early identification and referral of survivors with mental health problems after disaster are critical in community mental health programs.

A qualitative study conducted after the 2015 earthquakes in Nepal (KC, Gan & Dwirahmadi 2019) reported that there was a lack of awareness of mental health in the aftermath of disaster felt by both the communities and by the organizations who worked in the area of mental health. This study suggested community members

with higher levels of awareness of the advantage of mental health services were more approachable and less reluctant to seek help. To increase awareness of disaster impacts and of actions that might be undertaken to minimize the negative outcomes, KC, Gan & Dwirahmadi (2019) suggested that risk should be communicated to the community before a disaster event strikes.

2.12 Chapter Summary

This chapter has highlighted issues in relation to emotional responses and mental health after disaster events, which have been examined in previous studies. It appears that most studies on disaster mental health explored the impact of disasters on mental health, including factors that might contribute to psychological outcomes after disaster. There are limited studies investigating awareness and knowledge of emotional responses and mental health in the aftermath of disasters. Moreover, limited studies were conducted in Indonesia, demonstrating the importance of conducting the current study in the Indonesian context.

The next chapter will describe the methodology and methods that have been employed in this study to answer the research questions.

CHAPTER 3: METHODOLOGY AND METHODS

3.1 Introduction

This chapter will provide details on the research methodology and methods for this thesis. It will include the research paradigm, conceptual framework, research design (setting of the study, participants, ethical considerations, data collection, data analysis), and the trustworthiness of the study.

3.2 Research Paradigm

A research paradigm provides a guide for a researcher, giving the direction of the study conducted (Whitehead 2013a). A research paradigm is chosen based on some considerations, which are the nature of the problem, purpose of the study and the research questions (Whitehead 2013a). This study is within the qualitative paradigm. A qualitative paradigm was selected because this study aims to explore in-depth individuals' understanding and descriptions of post-disaster emotional responses. These are issues that have not been studied before, particularly within the Indonesian context. As Creswell (2013) suggested, the purpose of using a qualitative paradigm is to explore issues that are difficult to measure and to obtain exhaustive interpretation of the issue. A quantitative paradigm would not provide a deeper exploration of the phenomenon under study. Furthermore, participants' responses would be influenced by their context, such as their experiences with mental health issues in the aftermath of a disaster, which would not be brought to light in a quantitative study.

The study is a descriptive exploratory study. This methodology falls under the interpretative approach, which aims to describe, explore and generate meaning

(Whitehead 2013a). The descriptive exploratory approach has been widely used in nursing and midwifery research, and is now one of the most common approaches (Whitehead 2013c). The descriptive exploratory methodology employs common characteristics of other qualitative approaches, such as the use of a small number of participants to gather narrative data, and the use of thematic/content data analysis (Whitehead 2013c). The descriptive exploratory approach is considered the most suitable because this methodology enabled narrative data to be collected that deeply explores participants' understanding of the issue being studied. Before deciding on this approach, the researcher considered other qualitative methodologies, including phenomenology, ethnography, critical social theory, and grounded theory.

Phenomenology is one of the most common approaches in qualitative study, which aims to explore individuals' deep lived experience of a phenomenon at a moment in time (Jackson & Borbasi 2012; Whitehead 2013c). This method is based on the idea that individuals' subjective perceptions of their experiences define their understanding of the phenomenon (Jackson & Borbasi 2012). Leedy and Ormrod (2013) suggested that, in addition to listening to participants' description of the experience of a particular phenomenon, researchers who use a phenomenological method must be highly aware of participants' cues, such as facial expressions, pauses, questions, and subject changes during the interview to seek to understand the deeper meaning of participants' lived experience. This current study did not employ phenomenology because there was no intent to deeply explore any aspect of the participants' lived experience of a disaster; the aim was to explore individuals' awareness and knowledge of post-disaster emotional responses.

Ethnography is a method in a qualitative study that aims to describe individuals' behavioral patterns in a certain cultural group (Whitehead 2013c). Ethnography focuses on people's interactions and activities; and also their use of symbols, rituals and customs (Jackson & Borbasi 2012). In conducting an ethnographic study, a researcher might need to engage and immerse themselves in the group being observed, to gain insights about the group and its behaviors, and to identify both explicit and implicit cultural patterns (Leedy & Ormrod 2013). Based on the description above, the current study was not appropriate for an ethnographic methodology, because it did not aim to describe people's behaviors or cultural patterns.

Critical social theory includes feminist, postcolonial, and postmodern approaches, which challenge oppressive power (Cannella & Lincoln 2018). The aim of critical social theory is to hear and learn from people who are oppressed by structural power or domination (Cannella & Lincoln 2018), and "to critique, not to initiate or manage change" (McNiff 2013 p. 50). This study's questions were not to provide a critical reflection on power, structures, culture and relationships and critical social theory was therefore excluded as a methodology.

Grounded theory is a method that aims to generate new theory from the data collected (Whitehead 2013c). This method involves identifying core concepts and processes in a particular phenomenon, and discovering justifications for those concepts and processes (Jackson & Borbasi 2012). Grounded theory is used when there is limited or absent theories on the phenomenon studied (Leedy & Ormrod 2013). While the issue explored in the current study has not been sufficiently

examined, this study did not aim to produce a new theory. Hence, it did not use grounded theory as its methods.

3.3 Conceptual Framework

Theoretical frameworks are theories that are used as a "frame of reference" where the researcher can predict and explain their study outcomes (Whitehead 2013a). In other words, a theoretical framework is used when the topic of the study has been studied, hence, theories are available to be tested. A conceptual framework is used to guide this current research, because this study explored issues that have not been widely studied before, especially in Indonesian context. Conceptual frameworks that are used in a study might be derived from one concept or more that are related to the topic of the study (Whitehead 2013a). As discussed in Chapter One, the current study applied the "Disaster management cycle framework" by Birnbaum et al. (2015) as its conceptual framework.

3.4 Research Design

3.4.1 Setting

This study was conducted in Yogyakarta, one of the provinces in Indonesia, which is very prone to geological disasters. Yogyakarta was struck by a devastating earthquake in 2006, and the eruption of Merapi in 2010. Both disasters resulted in a large number of deaths, physical and mental trauma for those who survived and extensive damage to community and essential service infrastructure (Indonesian National Disaster Management Agency 2016b, 2016c). Yogyakarta consists of four districts and one city. Sleman and Bantul districts are more vulnerable to disasters

(volcanic eruption and earthquake/tsunami, respectively). For that reason, this study involved participants from these two districts.

Bantul and Sleman districts both have seventeen sub-districts, with a population of 971,511 and 1,167,481, respectively, in 2015 (Yogyakarta Statistic Bureau 2016a). At the end of 2015, the adult population in Bantul was 680,514 (337,414 males and 343,100 females), while Sleman's adult population was 795,304 (394,262 males and 401,042 females) (Governance Bureau of Yogyakarta Regional Secretariat 2016).

There are 514 nurses (thirty-four bachelor and 480 diploma in nursing) in Bantul and 1988 nurses (301 bachelor and 1687 diploma in nursing) in Sleman (Yogyakarta Statistic Bureau, 2016b). There are also a small number of nurses with a minimum level of education (equivalent to senior high school); this group was not included in this study. This study involved only nurses who work as clinicians at the hospitals and public health centres. Bantul district has fourteen hospitals (three public, eleven private) and twenty-seven public health centres. Whereas, Sleman has twenty-seven hospitals (seven public, twenty private) and twenty-five public health centres (Yogyakarta Statistic Bureau, 2016c). This study involved one of the largest public hospitals in Bantul and one of the largest public hospitals in Sleman district. One of the biggest private hospitals refused to be involved in this study. Three public health centres in Bantul and four public health centres in Sleman were involved.

3.4.2 Participants

There were two groups of participants in this study: adult community members and nurses in Bantul and Sleman districts.

Adult community members were recruited using convenience sampling. Convenience sampling is the most common sampling technique in qualitative study, allowing the researcher to recruit participants in a short period of time (Lopez & Whitehead 2013). With this sampling technique, the student researcher invited people who were available to participate in the study. Adult community members were recruited from seven public health centres. The student researcher recruited adult community members in public health centres for a number of reasons: first, public health centres are the closest health service providers to the community; second, recruiting adult community participants in their residences (door-to-door recruitment) would be time consuming, because it would need permission to be granted from all levels of government (districts, sub-districts, and sub-sub-districts), while recruiting adult participants at the public health centres would only need permission granted from the public health centres. The third reason is related to ethical considerations of confidentiality and safety for both participants and the researcher.

Adult community members' inclusion criteria were:

- be at least eighteen years old
- have lived in Bantul or Sleman district for at least six consecutive months
- speak and understand the Indonesian language
- not have uncorrected hearing and/or vision impairment(s)

- not have apparent cognitive impairment

Nurses were recruited from the two public hospitals, and two public health centres, also using convenience sampling. Nurses who were willing to participate were recruited to participate in focus groups.

Nurse participants' inclusion criteria were:

- Diploma of Nursing or Bachelor of Nursing
- non-managerial primary nurses or associate nurses
- have been working for at least five years as a nurse
- works at a public health centre or hospital
- nurses who have never met or known the researcher before

Exclusion criteria:

To maintain a balanced and open discussion during the focus group, this study only involved nurses at non-managerial levels. Hence, nursing managers and heads of nursing departments were excluded from this study.

The details of the recruitment process for both the adult community members and nurses are described in the Data Collection section of this Chapter 3.3.4.

3.4.3 Ethical Considerations

Ethical considerations aim to protect participants from any harm, trauma, anxiety and discomfort to their dignity, body integrity, autonomy and privacy (Woods & Schneider 2013). In conducting the research, the researcher acted in accordance with the principles of ethical conduct of research, which are "respect for human beings, research merit and integrity, justice and beneficence" (National Statement

on Ethical Conduct in Human Research 2007). Some strategies that were applied during the data collection and the data analysis will be described below.

Ethical clearance was granted by the University of Adelaide Human Research Ethics Committee (HREC) (Ethics Approval Number: H-2017-059, Appendix 2). In Indonesia, permissions were granted from Regional Development Planning Boards in Bantul (No: 070/Reg/0336/S3/2017, Appendix 3) and Sleman district (No: 070/Bappeda/2912/2017, Appendix 4). Both hospitals also required ethical clearance from a local ethical committee, and it was granted from Stikes Jenderal Achmad Yani HREC (No: S.Kep/301/STIKES/IX/2017, Appendix 5). Both hospitals then issued a letter of permit to conduct the study (No: 070 from Panembahan Senopati Hospital and No: 070/2914 from Sleman Hospital, Appendix 6 and 7). Public health centres were straightforward; the researcher only needed to talk to the office head, and made a payment. After this, the researcher was permitted to meet with potential participants in the waiting room, and used the discussion room for confidential interviews.

Before performing the interviews with the adult community members and focus groups with the nurses, the student researcher provided detailed explanation about the study, including the participants' role, risks and benefits if they participate, confidentiality issues, their time and reimbursement (participant information sheet for adult community members, Appendix 8; participant information sheet for nurses, Appendix 9). There was no pressure for individuals to participate in this study. Nurses were advised that they could withdraw at any time during the focus groups, while adult community members could withdraw up to the data analysis. If

they decided to withdraw, the data would then be removed. No participants withdrew from the study. To assure informed consent, individuals who agreed to participate signed a consent form, which was explained to them before the interview and focus group commenced (Consent form for adult community members, Appendix 10; Consent form for nurses, Appendix 11).

A number of strategies were employed to protect the privacy and confidentiality of participants during the data collection phase. These include:

- The information provided by the participants was confidential, including their identity, and location of the public health centres or hospitals.
- The nurses in the focus groups were asked to keep the discussions and content of the focus group private and confidential
- Only the researcher and supervisors had access to participants' data.
- All participant information was filed securely in documents located on a password-protected laptop belonging to the student researcher and the consent forms were kept securely in a locked cabinet in the researcher's residence while in Indonesia.
- The researcher has prepared an Adverse Events Procedure (Appendix 12), providing the steps to be taken if a participant in the interview or focus group became emotionally triggered or upset. The researcher also informed the participant to arrange a follow-up with a professional, if the emotional reactions continued. There was no participant who experienced emotional distress during the interview and focus group. All of participants in the study could finish the interview and focus group without pausing or stopping due to feelings of

discomfort or tiredness, or were emotional. There was no re-scheduling or cancellation of the interviews or focus groups.

Ethical considerations also included the researcher's health and safety. To ensure the researcher's safety, all interviews of adult community members were conducted in a public health centre. There was no incident for the researcher during the study.

During the data analysis phase, a number of strategies were employed to protect the privacy and confidentiality of participants. These include:

- Personal data were removed and replaced with codes. No identifiable data were included in the analysis or reporting of findings.
- All information collected in digital recordings as a result of interviews and focus groups were/will be de-identified in transcripts, the thesis and any future publications.
- In Australia, all hard copy documents were kept in a locked filing cabinet in the student researcher's PhD allocated university space. All documents were then scanned and saved onto the password-protected computer of the principal supervisor's drive. All original documents will be kept for a minimum of five years with the principal supervisor and will be disposed of following the University of Adelaide's policy.

3.4.4 Data Collection

3.4.4.1 Data collection with adult community members

This part of the study employed a semi-structured interview method. This type of interview enables the interviewer to concentrate the conversation on topics that are relevant to the research questions, unlike an unstructured interview where the

interviewer mostly listens to the interviewee's story. Furthermore, a semi-structured interview also allows the interviewer to ask follow-up questions, whenever it is necessary to get more details that are important to the research project, compared to the structured interview where the questions have been rigidly prepared (Brinkmann 2018).

Adult community members were approached through public health centres in each district. The researcher spoke to people who came to the public health centres, started a conversation to introduce herself and explained the study. Potential participants who were interested in participating in the study were asked for their time availability. All of the participants in this study agreed to conduct the interview at the time they were approached. The researcher then discussed with participants where the interviews would be conducted. The preferred place for interviews was the public health centre, considering interviews at the participants' houses might be interrupted by the presence of other family members, and for the safety of the researcher. All of the interviews in this study were conducted at the public health centres, in a room provided by the staff from the public health centres. All interviews were conducted over a duration of one hour, but no more than two hours (Lopez & Whitehead 2013).

There was no direct professional relationship between the interviewer and community adult participants. Participants and the researcher had not met or recognized each other before the study commenced. To maintain privacy and the quality of the recording, the place of interview was quiet, in a closed room without other people present. The phones of the interviewer and the participants were

switched off during the interview session. The interview was stopped after the flow of the discussion naturally felt completed.

3.4.4.2 Data collection with nurses

This study also involved focus groups with nurses. The researcher conducted four focus groups with nurses from the hospitals and public health centres in Bantul and Sleman districts. For both hospitals, they had a different procedure to follow regarding the data collection. In Hospital 1, the researcher was required to send the research proposal along with the ethics approval and letter of permit from the local governments to the Training and Research Centre in that hospital. This hospital then required the researcher to go to the wards to explain the project to the nurses. Nurses who were interested in participating then let the head nurse of the ward know, who then informed the researcher. The second hospital requested that the staff from the Training and Research Centre distributed the information to the wards, then nurses who were interested in participating contacted the Training and Research Centre staff, via their head nurse. The staff from the Training and Research Centre then notified the researcher. Nurses and the researcher then agreed on the schedule to conduct the focus groups.

Public health centres, where the nurses were recruited, had a different procedure to follow. At one public health center, the researcher contacted the head of the office, who then informed the nurses about the project via the participant information sheet. The nurses who were interested in participating contacted the head of the office, who then notified the researcher. The second public health centre delegated the distribution of the participant information sheet to a nurse coordinator. Nurses

who were interested in participating then informed the nurse coordinator who then contacted the researcher to arrange the schedule for focus groups.

The focus groups were conducted in a room within each hospital and public health centre. The focus groups aimed to explore the issue of nurses' awareness and knowledge of posttraumatic emotional responses related to disaster. The interactions between participants during the focus groups enabled a fulsome discussion that provided rich data.

The interviews and focus groups were conducted in the Indonesian language. Adult community participants were reimbursed for their time and transportation that they spent to come to the public health service. This money was used to buy gas for their car/motorcycle. Nurse participants were also reimbursed for their time. The amount of the reimbursement was IDR 50,000 or around AUD $5 for both participant groups.

3.4.5 Data Analysis

In this study, data analysis was undertaken after the data collection was completed for both participant groups. The digital recordings were transcribed into a Word document in their original language (Indonesian) by the student researcher, and then translated the data into English. The English translation was conducted before the analysis, because the research team was multilingual (Nurjannah et al. 2014), where the student researcher is fluent in Indonesian and English, and the supervisory team was fluent in English. The student researcher ensured that the meaning, context and nonverbal expressions in the interview and focus groups were not lost. For this reason, besides obtaining the help from a bilingual colleague who has a degree in

English education, the student researcher acted as a translator-moderator, as recommended by van Nes et al. (2010). As a translator-moderator, the student researcher explained the intended meaning and its context to the translator, during the process of translation. The student researcher and the translator discussed possible wordings in English, especially for a significant or important dataset, to decide the best translation. A bilingual person who has good comprehension in Indonesian and English and has a PhD in Public Health checked the Indonesian-English translation. This colleague ensured that the translation was accurate, for example, in regard to the correct use of health terminology. This colleague noted some suggestions for the student researcher, such as the use of "psychiatric hospital" instead of "asylum".

The data analysis in the current study was conducted in English. The student researcher decided to translate the data before the analysis, because qualitative study was new for the student researcher; hence, the support from the supervisory team during the data analysis was really helpful and was able to increase the student researcher's confidence as well as to minimize intrusion of assumptions or biases in the analysis.

The data analysis employed in this study was thematic analysis as described by Braun and Clarke (2006). The analysis process using thematic analysis included six steps: getting familiar with the data, developing initial codes, searching for themes, reviewing themes, delineating and labelling themes, and writing the report. The first step was undertaken by listening to the interview and focus group recordings before and whilst transcribing. The interview data were analysed first followed by the

focus group data. Once the interviews and focus groups were transcribed, the student researcher continued to re-read the transcripts several times. The purpose of this was for the student researcher to immerse themselves in the data and commence exploring the deeper meaning provided in the narrative (Braun & Clarke 2006). The initial codes were developed by highlighting important points (keywords) in the data and put similar keywords under certain categories relevant to the research questions. Categories that were formed from the initial coding were then analyzed to search for themes. The process of initial coding and searching for themes was conducted within an Excel document. Pieces of paper, containing potential themes, their description, keywords, and quotes that supported the themes were also used as a table-top exercise to assist in finalizing the major themes. During these processes, some initial codes formed major themes, or sub-themes, while others were discarded (Braun & Clarke 2006). The process of developing subthemes and major themes was iterative. It involved reviewing and refining the themes. Some themes were discarded because they were not supported with enough data, some themes were collapsed, and other themes were broken down into subthemes (Braun & Clarke 2006). Refining and reviewing took place until the themes formed without repetition and overlapping, and most importantly, they reflected the data provided by the participants and were relevant to the research questions. The last step before writing the findings chapter was labeling and describing the major themes and subthemes. The purpose of labeling and describing themes was to explain the scope and content of each theme (Braun & Clarke 2006). Throughout the process of data analysis, the supervisory team regularly met and

reflected with the student researcher to ensure the interpretation accurately represented the participants' transcripts.

3.5 The Student Researcher's Assumptions

The student researcher is an academic in a school of nursing in Indonesia, since 2008. In academic work, the student researcher conducts teaching, research and community service in the area of mental health. Indonesia is a disaster-prone country, and has experienced disasters in the past. In conducting qualitative research, the student researcher was aware of some values and assumptions that might influence the interpretations of the data provided by the participants. The student researcher believes that it is important for the community to understand that disasters may cause psychological impacts on them. It is essential for community members to be aware of the post-disaster emotional responses and mental health impacts of a disaster. However, there is still much negative stigma around mental illness in Indonesia. This negative stigma has caused mental illness to become invisible to the community because the community does not understand mental health issues and that it can be well managed if medical advice is sought early. Therefore, the student researcher would like to increase community awareness and knowledge of mental health, including conducting research in the area of mental health and disaster.

Based on the student researcher's experiences engaging with community members, the student researcher had an assumption that the community members' knowledge on mental health was low. The student researcher also had an assumption that in the aftermath of a disaster, nurses would mainly focus on the physical aspects of

the disaster survivors and not on their mental health. These assumptions may influence the way the interviews and focus groups were conducted, and the analysis of the participants' narrative data.

The student researcher is a Muslim; the majority of the community in Yogyakarta, Indonesia are. This may provide some benefit to understand the community members' values that influence their views on mental health and disaster. However, this may also influence the way the student researcher view and interpret participants' beliefs around the impact of disasters on mental wellbeing.

Disclosing the researcher's assumptions is crucial in qualitative research because by doing so it will enable the student researcher to guard against applying the student researcher's beliefs and values when interpreting the data and findings. The interpretation must be derived from the narrative data provided by the participants (Tobin & Begley 2004). Being aware of the possible biases enabled the student researcher to put in place checks and balances throughout the study with the thesis supervisors.

3.6 Establishing Trustworthiness of the Study

Quality of a quantitative research is shown by its rigour, validity and reliability. However, in qualitative research the rigour is demonstrated through trustworthiness. There are four criteria of trustworthiness: credibility, auditability (dependability), fittingness (transferability) and confirmability (Harding & Whitehead 2013).

Credibility means that the findings reported by researchers in a study corresponded with the narrative data gained from the participants (Schwandt 2007). Credibility

shows that researcher had an accurate interpretation of the study context (Tolley et al. 2016). In this study, the student researcher ensured that the narrative data provided by participants were rich. This was achieved by forming relevant questions for the interviews and focus groups in order to answer the research questions and provided sufficient time to conduct the interviews and focus groups. Providing adequate time gave the participants opportunity to consider the questions and explore further their response. The translated data was also checked several times by the researcher and one bilingual person to ensure that the English version accurately reflected the meaning and the context of the data from the participants as outlined above in 3.4.5. The analysis process was conducted carefully by the student researcher and guidance was provided by the supervisory team to make sure that the findings established from the data were accurate.

Auditability or dependability require the researcher to have a "logical, traceable and clearly documented" research process (Schwandt 2007, p. 299). In qualitative research, dependability starts with forming clear questions that are suitable with the research aim and design (Tolley et al. 2016). The student researcher had the research process documented through the research ethics application, and conducted the process in line with the ethics approval. The thesis also provides detailed documentation of the research process undertaken as well as the rationale or justification for the research design and decisions that were made, allowing the study to be replicated in the future.

Fittingness or transferability are similar to the concept of generalizability in a quantitative study. However, the goal of generalizability in a qualitative research is

different. Transferability aims to answer whether the study conclusion is transferable to other contexts (Miles, Huberman & Saldana 2014). Transferability of a qualitative study can be achieved by selecting participants who are representative of the community and ensuring that there is a rich description of the demographics of participants and the geographic characteristics of the research location (Tolley et al. 2016). The current study involved participants who lived in two districts, which are most vulnerable to disasters in Yogyakarta. Both groups of participants in this study had experienced disasters and were able to share their knowledge of post-disaster emotional responses with the student researcher. The conclusion of this study might be transferable to studies that are conducted in developing countries with low to middle level of education, a developing university education system for nurses, and where the majority religion is Islam.

Confirmability means that the findings and the interpretations were derived from the data, which means that the study was objective (Tobin & Begley 2004). Harding and Whitehead (2013) suggested that confirmability reflects the implementation of credibility, dependability and transferability. Researchers of a qualitative study are expected to separate their own values from those of the participants (Tolley et al. 2016). The student researcher has identified biases/assumptions that might influence the study process, and throughout the process of the study, reflected on her own values or assumptions that might have influenced the interpretation of the data. This process of checking the confirmability was also assisted by the supervisory team through discussion in meetings or via written feedback in the emails.

3.7 **Chapter Summary**

This chapter has provided detailed information and justifications as to why the research paradigm was chosen, the conceptual framework, and how the study is designed, in order to be able to answer the research questions. Two participant groups were chosen in specific areas of Yogyakarta. The process for recruitment, data collection and analysis was documented in detail for both groups of participants. The process of transcribing from Indonesian to English was also presented in detail. Ethical considerations were discussed and respected by obtaining ethics approvals and permission to access participants. The student researcher has also considered factors that contributed to the study's trustworthiness.

The next chapter will present findings of the study that were derived from the interviews of adult community members and focus groups of nurses.

CHAPTER 4: FINDINGS

4.1 Introduction

This chapter will present the findings from the eleven interviews with the adult community members and four focus groups with the nurses. These findings were attained after the process of thematic analysis (Braun & Clarke 2006). Thematic analysis was conducted after several steps of transcribing the audio recordings into a Microsoft Word document, translating the data into English, and checking the translation by a bilingual person. The themes identified from the community interview data are presented first, followed by themes from the nursing focus groups' data.

4.2 Interviews with the Adult Community Members

Interviews with the adult community members were conducted by the researcher at three public health centres in Bantul and four public health centres in Sleman district, Province of Yogyakarta. The researcher approached potential participants who were in the waiting rooms of Public Health Centres, where she introduced herself, and explained the study by providing the participant with the information sheet. Those who agreed to participate were asked to come to a room provided by the public health centre for the interview. In the interview room, participants signed the consent form, were interviewed and then received a reimbursement of 50,000 IDR for appreciation of their time. The interview was guided by a set of prompts or general queries about awareness and knowledge of posttraumatic emotional responses related to disaster. The interviews lasted between twenty-one and forty-five minutes. The interview was audio recorded, and immediately after the

interview, necessary notes were written regarding participants' non-verbal language and the interviewer's thoughts and feelings. These notes were beneficial for conducting better interviews in the future. The total number of adult community members involved in the interviews was eleven.

With the adult community members, this study aimed to understand the level of awareness and knowledge of post-traumatic emotional responses related to disasters in the adult community in Yogyakarta Province, Indonesia. Findings from the interview data attempt to answer the following research questions:

1. How aware are adults, living in Yogyakarta Province, of post-disaster emotional responses?
2. What level of knowledge do adults, living in Yogyakarta Province, have about post-disaster emotional responses?

The thematic analysis of the interview data identified three major themes: Disaster Impact, Disaster Responses, and Post-Disaster Mental Health Awareness, as summarized in the table below:

Table 2. Major Themes and Subthemes derived from the interview data

Major Themes	Subthemes
Disaster Impact	1. Frightening memories of disaster events 2. Awareness of the impact of disaster on the physical and non-physical aspects of participants' lives
Disaster Responses and Recovery	1. Community adjustment 2. Family adjustment 3. Individual adjustment
Post-Disaster Mental Health Awareness	1. Awareness of emotional responses in the aftermath of disaster 2. Awareness of local information and support for mental health issues

4.2.1 Disaster Impact

This major theme describes participants' description of the disaster(s) they had experienced. It was clear from the interview data that all participants had experienced some form of disaster that had impacted their lives. Most of the participants had experienced earthquakes and volcanic eruption, some experienced floods, and one participant mentioned an airplane crash. Participants' experience was included in this analysis, because having an experience of living through a disaster was necessary for the participants to explore the phenomenon of post-traumatic emotional response awareness, which is the focus of the study.

In this major theme, participants discussed their memories, awareness and knowledge about the disaster(s) and how the disaster impacted on their lives. This major theme has two subthemes: frightening memories of disaster events; and awareness of the impact on the physical and non-physical aspects of their lives.

Frightening memories of disaster events

This subtheme focuses on what the participants remembered about the disasters they had experienced. The participants routinely highlighted the significant impact of these disasters on their lives. One impact was continued frightening memories of the disaster events, as one participant described:

"It [the 2006 earthquake] brought me unforgettable memories. What I mean here is, it was extraordinary circumstances that will never be forgotten." (Interviewee 1)

Participants mentioned that these extraordinary disaster events caused them, at the moment of the disaster impact, intense emotional responses, such as "shock" and "panic", as this participant highlighted:

"I just got up and had finished doing my laundry. When I wanted to take a shower, then suddenly there were tremors. Inside the house, I was shocked and panicking. The roof tiles were ... everything was shaking and the walls got cracked. Everybody was panicking, all people around there." (Interviewee 6)

Participants described that, when feeling panicked, people were not able to think clearly and make decisions. People were only thinking about running to save their own lives. This immediate response of running was not directed by the local authorities, since the disaster occurred suddenly, and participants did not know what to do, except to run.

"They [people] were like a 'broom losing its rope' [during the disaster]; they ran to save their own lives. Some of the people had vehicles, like cars or truck, and they used them to flee, along with their neighbours. Even the local administrative also did the same thing – they ran. People were like a mess, run whenever they can to save their lives." (Interviewee 8)

During the disaster impact, the feeling of panic increased due to the unavailability of clear information. One example was when false information was spread by other community members after an earthquake hit, indicating that a tsunami was imminent:

"Because at that time [during the earthquake], there was a tsunami issue. When the quake struck, the panic was severe due to the tsunami issue. The fake information telling that tsunami had hit Malioboro [central part of Yogyakarta]" (Interviewee 6)

This subtheme emphasizes that participants still had vivid memories of what they felt and what they saw during the disaster impact. The intense emotional responses reported by the participants included shock and panic, which were described by participants as unforgettable. The next subtheme will illustrate how disaster

impacted both physical and non-physical aspects of the environment and the survivors.

Awareness of the impact of disaster on the physical and non-physical aspects of participants' lives

This subtheme provides participants' discussion around the impacts of disasters on the environment and on the survivors, both physically and non-physically. The physical impacts of the disaster on the environment were acknowledged by the participants and included loss of properties, and a high level of destruction of buildings and roads, as this participant indicated:

"There were a lot of houses collapsed and trees fell down [during the earthquake]. ... When Mount Merapi erupted, it brought... extreme volume of volcanic ash. It took months to clean. Everything was messed and so dirty because of the huge volume of the volcanic ash." (Interviewee 7)

Another participant noticed that the disaster also impacted on the physical health of the survivors:

"Illness, as they got irregular meal times. That was the only impact." (Interviewee 10)

Participants described that when the disaster was occurring, there were non-physical impacts felt by the survivors that would affect their mental state, as this participant described:

"A certain disaster could also impact on our non-physical aspects, such as feelings, mind, that can interfere with our mental state. When the event [disaster] occurred, it would affect someone's mental state, I guess. I, myself, felt at that time I was not stable due to the panic situation, I was not able to think clearly. ..." (Interviewee 1)

The non-physical impacts of the disaster event stayed for some period of time after the disaster. This participant described the psychological trauma that was experienced by a survivor:

"When the quake occurs… she [adult] must scream for help each time the tremors came. She doesn't panic now. ... Days after the disaster, she used to scream for help, even it was only a smaller tremor. She used to run as far away as she could, usually to the field and scream 'Quake! Quake!' though the quake had stopped. It showed that she was very traumatized with the quake." (Interviewee 11)

Participants routinely described that the physical and non-physical impacts of the disaster were mutually correlated. For instance, they reported that survivors became sick because they were sad for a long period of time.

"… Human should live in balance; both the physical and mental are closely interrelated. When someone is mentally down, then his or her physical condition will also be down, get sick, and die. Many cases found." (Interviewee 8)

"When someone was too sad, and their mental state dropped, it would lead to physical problems too. ... If they could not face the reality well, could not let go and move on, they would be in that sad feeling for a long time, and then impaired in their physical condition". (Interviewee 4)

Many accidents took place at the time of the disaster due to the panic felt by survivors, as mentioned by this participant:

"…the accident happened because of the panic situation, not because of the earthquake itself. Road accidents happened because they were afraid of the tsunami, yet the news was not [validated], only hearsay." (Interviewee 3)

This subtheme highlights the participants' awareness of the impacts of disasters on physical and non-physical aspects of their lives and on the environment, in particular their feelings of panic and fear about their safety.

The first major theme that emerged indicates that all of the participants had dealt with some kind of disaster in their lives. They could describe what they felt and saw during the disaster impact and were aware and able to discuss the physical and non-physical/emotional consequences as well as the relationship between the two.

The impacts of the disasters on participants' physical and non-physical wellbeing were significant and had caused people in the community to respond. The disaster

responses could be seen at the community, family, and individual levels. These responses, and more specifically how the community, family and individual adjusted after the disaster event, are covered in the second major theme: Disaster Responses and Recovery.

4.2.2 Disaster Responses and Recovery

Disaster response is a phase after the disaster impact where people take actions to restore their normal life or to minimize the effects of the disaster (Council of Australian Governments 2011). Participants indicated that their community members commenced a disaster response immediately. After a disaster event struck, the participants explained how the community members worked together to clean and rebuild their houses, how families dealt with financial issues, and how individuals coped with their situations. At this stage, there were adjustments that were carried out by the whole community, by the family, and by each individual in the disaster-affected area. Therefore, this major theme consists of three relevant subthemes: community adjustment, family adjustment, and individual adjustment.

Community adjustment

In this subtheme, participants explained what the community did and felt after a disaster event. Right after the disaster ceased, people in the community started to work together to clean up the ruins and to repair destroyed houses.

"During the daylight, we cleaned the houses from ruins and we started from the worst damaged houses. ... to help those whose houses were severely damaged, we worked together... the whole community took part in providing help for them. Houses that were not severely damaged, we together helped to repair but houses that were in ruins, then we just cleaned them together..." (Interviewee 11)

As community members worked together to clean and restore their environment in the recovery phase, they saw what others had experienced, and they felt shared hardship. They shared similar sadness and experience, thus they felt "*not alone*", as described by this participant:

"I just thought that my neighbours had the same condition as mine and it relieved my feelings a bit. ... I think we [people] all just felt the same, tawang tangis [Javanese idiom]. Hehehe… it was…. It could be said we were in tears. It was what happened, really." (Interviewee 4)

Participants suggested that, in the disaster responses, the community also played an important role in helping those affected by the disaster by showing sympathy and taking care of them, as this participant highlighted:

"… We need to be concerned. Concern, even to those who are not liked due to their faults. We cannot blame somebody for the event that happens, that the survivor feels guilty for he couldn't save other's life. We must not blame him for this. We as neighbours or his close relative must take good care of him" (Interviewee 1)

The majority of people in Bantul and Sleman districts are Muslims, therefore, in the disaster response phase, the community members were encouraged to engage in prayer activities, as this participant mentioned:

"When the disaster happened, there was an announcement from the mosque for Muslims, and we are taught to conduct certain prayers through various kinds of sholat [prayers in Islam]; there was a prayer for the earthquake event." (Interviewee 7)

The community also arranged to hold a religious meeting where they invited a religious teacher (*Ustad*) to the village. The main aim of this religious meeting was to motivate people to let go of their loss, as this participant described:

".... in Glagaharjo we have a regular religious forum that is held once a month. During that meeting, the religious leaders motivated the people not to regret our wealth or properties, which had been lost during the disaster. Now there are more forums, every Friday and there is one for mothers/females, too. I think more women were mentally down, regretting their properties. The forum was so helpful for us to regain our spirit to live" (Interviewee 8)

In the disaster response and recovery phase, community members worked together on rebuilding their residences, connected as one community, supported those who were affected by the disaster, and increased their engagement in religious activities.

Family adjustment

In this subtheme, participants reported that families needed to procure funds to rebuild their houses, and while they were busy with the restoration process, families also needed to provide support for family members who were having mental health issues.

Most of the participants experienced financial difficulties after the disaster, primarily due to their inability to return to work, and their need for funds to rebuild or repair their houses. The majority of participants worked for someone else. Some participants were not able to return to work because they worked for a factory, stores or art gallery that were closed due to the destruction of the workplace. Some of them were farmers who could not go back to their land because they had been evacuated; and some were casual workers that were not able to work because there were no jobs available for them.

"Yes [I was in such a difficult situation]. It was like... I was not able to work, I could not do anything, it was terrible, wasn't it? It was when everything needed money and I was not able to earn it. Yes, [it affected me] financially. It is like a saying, 'The one who is unwilling to work shall not eat.'" (Interviewee 4)

In the disaster responses, participants reported that some of the families also experienced problems related to their mental health. For those who experienced mental health problems after the disaster, participants suggested that family played the biggest role in deciding what should be done to the family member who had mental health issues.

"… But for mental health problems … I think the family has decided the best options where to take the patient. That's a bit sensitive, so we, as neighbours, don't dare to directly advise where to go for treatment. … We help them by accompanying the family to the hospital and then go home when the things have been done." (Interviewee 11)

However, at the early stage of the disaster response, most families affected by the disaster were occupied with the process of restoring their houses and their environment, and hence might have been unable to provide care for the family member(s) who was experiencing mental health problems.

"But sometimes, family also did not know or think about what happened to that person, and what they should do. The family or relatives might not think further about that as all of them were busy with the recovery phase; they worked hard to rebuild their houses and to prepare their cultivated land. There were always things to do. ..." (Interviewee 8)

The main concern for families in the disaster response was securing funds to rebuild their houses. While focusing on the restoration of their houses and their environment, families were not necessarily aware of their family members' need for support regarding mental health issues.

Individual adjustment

This subtheme describes how individuals responded and coped with sadness and mental health problems after the disaster. In the disaster response, individuals were seen by participants as responsible for managing their mental health condition. Participants argued that disaster was a test from God, hence, individuals had to accept it and engage in more prayers.

Participants stated that mental health problems resulted from individuals' own mind, therefore managing them became the individuals' responsibility, as this participant pointed out:

"Yes, it is their own inner mind to recuperate their condition. Isn't it? Mental disorder derives from our own mind." (Interviewee 4)

When individuals with mental health problems required assistance from others, participants said that it was also the individual's decision whether they would seek help or not, as this participant mentioned:

"... but it depends on the individual, whether they want to seek help or not... It (when to see a psychiatrist) actually depends on the individual." (Interviewee 1)

Besides seeking help from professionals, people were expected to engage in prayer after the disaster event:

"I think... Disasters are life tests from God. I think the only thing we can do is pray, so that everyone is safe, and there are no victims." (Interviewee 7)

As disasters were not predictable, participants said that people were required to accept them and surrender to God:

"In my opinion, a disaster, like an earthquake, is quite natural and we can only surrender our fate to God and just let it go. When we can surrender, we can accept what happened. But sometimes there are people who cannot accept.... We as humans are to live according to what God wants, we just live... we surrender wholeheartedly our life to Him. We never know what would happen to our life in the future." (Interviewee 3)

This subtheme highlights the individuals' roles in the disaster response. As discussed by the participants, individuals were seen to be responsible for taking care of their mental health issues, and were expected to engage in religious activities.

In the disaster response phase, communities, families and individuals engaged in numerous adjustments. In this response phase, community members might be aware of the sadness and mental health issues experienced by others, however, earning funds to rebuild their dwellings was their first priority, leaving mental health problems as families' and individuals' responsibilities. How aware community

members were of mental health problems in the aftermath of disaster will be presented in the third major theme: Post-Disaster Mental Health Awareness.

4.2.3 Post-Disaster Mental Health Awareness

This major theme describes how aware the community members were of post-disaster emotional responses. Participants discussed different types of emotional responses and sadness as well as the available support in their community after disasters. There were two subthemes that emerged from this major theme: awareness of emotional responses after the disaster and awareness of local information and support for mental health.

Awareness of the emotional responses after disaster

This subtheme describes how the participants identified the emotional responses of community members after a disaster event. Participants distinguished between what they considered normal and not normal responses after a disaster. Participants suggested that sadness is a normal process in the early aftermath of a disaster. However, feelings of being "mentally down" and "*stres*" as caused by the inability to accept the reality and to regain one's spirit were not normal. The word "*stres*" in the Indonesian language was derived from the English word "stress". The word "*stres*" in the Indonesian dictionary is defined as: "mental and emotional disturbance that is caused by external factors"; "tension". However, it is very common in Indonesia that "*stres*" is perceived and defined as a severe mental health condition, a condition that was referred to as "crazy" by some participants.

In the aftermath of a disaster, participants described that most survivors felt sad and troubled, but they were unable to identify other emotional responses.

"Other than troubled? Uhh… it was just… I am not sure… it was just troubled and feeling sad. Yes, troubled and sad. Sad due to many things that happened unexpectedly." (Interviewee 4)

"Umm, I think it's difficult to clarify people's responses towards the disaster. I don't really understand about the mental health response." (Interviewee 5)

Participants in this study could identify what they called "normal reactions" to a disaster. They described someone who had a normal reaction as being able to restore their spirit and go on, as this participant explained:

"I think it's normal [to have an unstable mental state], but don't have it for a long time. If I were in that condition, I might also feel the same. Yet, we have to be able to restore our spirit and just go on." (Interviewee 2)

Being sad was also considered normal by the participants, as long as it was not for a long time, as this participant suggested:

"Yes, it's [being sad is] normal. We can be sad, but not too long, being dragged by sadness is not good." (Interviewee 6)

However, it was recognized by the participants that a loss of loved ones would take a longer period of time to recover from, as this participant discussed:

"...there was a possibility that if they lost their beloved ones, kids or wives, we knew how they felt. I think it would take a longer time for them to recover. Yes, yes it would take a longer time for those who lost their wives or kids." (Interviewee 4)

Participants believed that the period of sadness was determined by the survivors' ability to "deal with reality", as this participant suggested:

"I think it [how long we felt sad] depends on ourselves, whether we are able to deal with the reality or not." (Interviewee 6)

Based on their experiences, participants described that their sadness did not continue for a long period of time. As these participants explained:

"The sadness was not so long, only at the time when the earthquake struck, and when I had to sleep outside." (Interviewee 3)

"It's true, we are sad when our homes are devastated, but next day when we have got enough money, we can rebuild our homes." (Interviewee 6)

Participants believed that sadness caused by disasters would not develop into severe mental health problems.

"I don't think there was [sadness that did not go away]…" (Interviewee 6)

"No, there were not [people here who experienced mental disturbance after the disaster]. After the disaster until now, people here were fine; they didn't think too hard about their situation." (Interviewee 8)

Participants in the study were aware of sadness and troubled feelings that were experienced by the community members after disaster events. Participants believed that sadness was a normal response and in a short period of time would go away.

In addition to "normal" reactions, participants in the study also discussed what they perceived to be "not normal" reactions after disaster events. Participants described "not normal" reactions as those community members who were unable to return to their normal life:

"I think when that person felt down after the disaster, they just stayed at home, and was reluctant to rise again, dispirited and unaware of their family's future… I think that is... it's too deep, it's an overreaction." (Interviewee 11)

"It is not normal when somebody has prolonged sadness, and they got no more willingness to get up. ... it's like… keep thinking… keep thinking until they got mentally shaken." (Interviewee 2)

Furthermore, participants argued that survivors with "not normal" reactions might experience a condition that was caused by their inability to regain their spirits. Participants referred to this condition as "being mentally down". Participants described the causes of this condition as the inability to accept the reality of losing property and loved ones, as this participant said:

"Some people realized that their properties or wealth were only a means of life; they were fine. Some of them, especially businessmen, felt sorry for they lost millions or hundreds of million [rupiah], they became mentally down, and down, and even died after the disaster. These people worked hard to get their properties or wealth through a long process and then suddenly it had gone. ... If they could

not stay strong and just give up, then they would be mentally down or people would say 'ngecis' *[a Javanese expression].* 'Ngecis' *means mentally down." (Interviewee 8)*

Participants described the symptoms of being "mentally down" as losing motivation and spirit that would subsequently affect their physical health too, as this participant discussed:

"A person who is mentally down, he used to have high motivation to work. You can tell that he had such motivation, but after the disaster, he lost motivation, he was silent, he lost his appetite to eat and then he got thinner and was not in a good shape and sick." (Interview 8)

The same participant added that people who were mentally down were different from those who were "crazy", and that survivors of disaster would only experience being mentally down:

"… But he was not crazy. Crazy… to me, he tends to be violent and talk uncontrollably. I don't think one would be like that after the disaster, only one [who is] mentally down. Mentally down, unable to regain their spirit to work and unable to think of their family. That's all." (Interviewee 8)

The description of "mentally down" provided by the above participant seems to be a lay definition of the symptoms of depression. The above participant asserted that after a disaster event, survivors would not be crazy. This suggested that this participant did not consider "mentally down" as a significant mental health problem.

Participants in this study discussed the Indonesian term "*stres*", a mental condition that was caused by the loss of property, as this participant described:

"I mean this [mental shock is]; we often see people who had built their big house and then it turned into ruins or was seriously damaged by the disaster, then that situation has the potential to make someone down … like a person with 'stres' … dengleng [Javanese]. 'Dengleng' means something goes wrong with their mind. He might have worked hard to build that house and then he regretted the situation." (Interviewee 11)

Participants described "*stres*" as "crazy", a condition that is not normal, with symptoms such as speaking uncontrollably, being violent or angry, and speaking and laughing to themselves, as this participant illustrated:

"They (who was 'stres') just seem like a crazy person. They went down the streets, wandered, could not clearly think about their family and home, grumbled." (Interviewee 7)

Interestingly, although some participants believed that survivors of disaster would only experience sadness and be mentally down, other participants thought that survivors of disaster might experience "*stres*" due to the inability to accept loss, as these participants explained:

*"Anyone. Yes, anyone can experience it ["stres" after disaster]. I think when they were not able to be thankful. If they are able to make peace with the reality, with the disaster, they won't be "stres". Those who could not accept reality would feel "*stres*". They kept thinking about their wealth. Then they regretted what had happened. They felt sorry." (Interviewee 10)*

Participants argued that people with "*stres*" needed immediate help, but they were not sure what kind of help. People usually brought those with "*stres*" to a psychiatric clinic/hospital.

"I was not pretty sure about that (the aid for those with "stres") as most of them (people with "stres") directly consulted the psychiatric hospital, Puri Nirmala (a psychiatric clinic in Yogyakarta). Usually people with "stres" are referred there. When they didn't need to be hospitalized, then we took them home or if they needed to be hospitalized based on the hospital's criteria …." (Interviewee 11)

This subtheme showed that it seemed that there was a continuum from normal to not normal sadness, with being mentally down in the middle and "*stres*" or crazy at the end of the continuum. Participants were aware of sadness that was experienced by the survivors after a disaster. However, they were less aware of the period of "normal sadness" and were not aware that this sadness could develop into more severe problems. When discussing mentally down symptoms, participants seemed to describe symptoms of depression, which they defined as "felt down", "reluctant

to rise again" or "too deep". There were different opinions in regard to *"stres";* some participants argued that after a disaster, survivors could not suffer from serious mental health problems, while others suggested that survivors were at risk of "*stres*".

Awareness of local information and support for mental health

This subtheme describes the participants' experiences of accessing information about post-disaster mental health and support available for those with mental health issues. In general, participants had not received information regarding mental health issues that might occur after disaster events, but they could discuss the source of support available for people with mental health problems.

Participants reported that, in the aftermath of disaster, health education and counselling were provided by the staff from public health centres. However, the information was mostly about infectious diseases, such as dengue fever and malaria. None of the participants had experience in receiving information regarding mental health issues after disaster.

"Not yet [got information on mental health problems]. But information and socialization on certain diseases such as dengue fever, malaria, and so on and ones related to treatment for infant or kids with fever symptoms before we took them to the hospital. That's all. We haven't got information or education on how to treat 'stres.'" (Interview 6)

Most of the participants did not have the knowledge of where to access information about mental health in the aftermath of disaster.

"[Giggling] Not sure [where to find information about mental health related to disaster] ... I think ... uhh, in certain institutions? ... [Giggling] Sorry, I'm not pretty sure. I myself usually talk about that with my religious teacher..." (Interviewee 3).

Participants had limited knowledge about sources of information regarding mental health in the aftermath of disaster. However, participants acknowledged that people who had some mental health issues could get help from others, including family, friends, neighbours, professionals or institutions.

"But in my opinion, he [with an overreaction] really needed to find some help from others, like a psychiatrist or somebody else, from whom he may have some guidance or counselling so that he can deal properly with the problems of facing small tremors with no exaggeration." (Interviewee 1)

Other participants believed that being together with other community members would help the survivor to ease their problems, as this participant highlighted:

"We, the people, shared jokes among us and then we could for a while laugh; and sometimes had cigarettes together. Yes, we could only share jokes, as we've got no educational background on mental health." (Interviewee 11)

In terms of finding help from professionals, participants suggested going to Public health centres or to hospitals.

"[If the sadness got worse] I would suggest to them that they see someone who is more credible. There should be a place for someone with mental health problems. ... I think there is one here [at the public health centre], that was not available at that time. Now there is one, so someone with the mental health problem(s) could come and share their problems. We can tell our problems and they would help us with encouragement so we can calm down." (Interviewee 2)

Participants were aware that support for mental health problems could be provided by the community, family, friends and professionals. Although participants were certain that psychological support was provided by the psychiatrist or psychologist in Grhasia and Puri Nirmala (two psychiatric hospitals in Yogyakarta), they were not confident whether support for mental health was provided at the public health centers:

"I was not sure about that [whether public health centres provided help for people who were mentally down]. I didn't even know whether a doctor was available here or not. That must be at Ghrasia [that such help is provided]." (Interviewee 8)

The third major theme describes the community awareness of mental health issues in the aftermath of disaster. Apart from being sad, participants found it difficult to recognize other emotional responses after the disaster. Participants asserted that sadness is a condition that was experienced by all the survivors in the aftermath of disaster, which would not last long and would not develop into serious mental health problems. They believed that those who experienced severe mental health problems did so due to their inability to accept reality and to let go of their losses of property and loved ones. This major theme highlights that information regarding mental health after the disaster was not available for the community, and the community did not know where to access the information they needed. The community's low awareness of where to access information might suggest that the community was at first not aware of their information needs and they might have low awareness of the mental health problems that can occur after disasters. Despite the limited knowledge of the available information about mental health issues, participants believed that support for those affected with mental health problems could be obtained from community members and professionals.

4.3 Focus Groups with Nurses

Four focus groups with nurses were conducted at two public health centres (one in Bantul and one in Sleman) and at two public hospitals (one in Bantul and one in Sleman). The focus groups involved fifteen nurses in total: five nurses from the public hospital and two from the public health centre in Bantul and five nurses from the public hospital and three from the public health centre in Sleman. The focus groups lasted 35 to 60 minutes. The small number of nurse participants in the focus groups was due to difficulties in finding the time in nurses' schedules to conduct

the focus groups as well as a shortage in nursing staff at the public health centres. Often, nurses who had agreed to participate did not attend the scheduled time, because they were assigned to duties outside the centres or in the community. However, the extensive discussion within each focus group provided rich data for the study. Focus groups with nurse participants aimed to answer the following research questions:

1. How aware are nurses who work in Yogyakarta Province of posttraumatic emotional responses related to disaster?
2. What knowledge do nurses who work in Yogyakarta Province have about posttraumatic emotional responses related to disasters?

The thematic analysis of the focus groups' data identified three major themes: Nurses' Knowledge and Awareness of Post-Disaster Emotional Responses, Nurses' Experiences of Providing Mental Health Support in Disaster Events, and Nurses' Education and Training Related to Disaster and Mental Health, as summarized in the table below:

Table 3. Major Themes and Subthemes derived from the focus group data

Major Themes	Subthemes
Nurses' Knowledge and Awareness of Post-Disaster Emotional Responses and Mental Health Problems	1. Nurses' awareness of their own and community members' emotional reactions following a disaster 2. Nurses' awareness of how people adapted after a disaster 3. Nurses' awareness of mental health problems following a disaster
Nurses' Experiences of Providing Emotional and Health Support in Disaster Events	1. Nurses' experience in engaging with people after a disaster 2. Assessment of emotional responses and referral procedures at the health services 3. Nurses' experience of community education for disaster survivors

Nurses' Education and Training related to Disaster and Mental Health	1. Disaster competencies in undergraduate nursing curricula 2. Continuing professional development 3. Nurses' needs for training and education in the future

4.3.1 Nurses' Knowledge and Awareness of Post-Disaster Emotional Responses and Mental Health Problems

This major theme describes two aspects of awareness. The first relates to the nurses' understanding about post-disaster emotional responses experienced by the adult community members and mental health problems that might be experienced by disaster survivors. The second aspect relates to the nurses' awareness of their own emotional responses following a disaster. This major theme has three subthemes: nurses' awareness of their own and community members' emotional reactions following a disaster, nurses' awareness of how people adapted after a disaster, and nurses' awareness of mental health problems following disaster.

Nurses' awareness of their own and community members' emotional reactions following a disaster

In this subtheme, nurses acknowledged and described what they felt following a disaster event. Nurses described their emotional reactions as feelings of panic and worry and being traumatized, as this participant discussed:

"For me, as an individual, I was definitely panicked and worried, thinking about myself or family, the disaster's effects. ... It took a couple of months for me to get rid of my trauma from my mind." (FG 4)

It is important for nurses to understand their own emotional reactions, because they need to access help to manage their own distress, before they are able to then support their community.

Focus group discussions further revealed that nurses were aware of community members' emotional reactions after a disaster. The participants described community members expressing feelings of being scared and panicked, as this participant highlighted:

"People were… of course, they were scared. ... They [people] were all in great panic." (FG 2)

Nurses also discussed that losing family members and houses had caused the survivors to feel sad:

"That's true. They [people] must be sad." (FG 1)

Furthermore, nurses believed that after disaster, people experienced psychological trauma:

"The people got physical impacts like burn injuries. Those who didn't get injured must feel such trauma [psychological distress], I guess." (FG 3)

This subtheme shows that nurses in the focus groups were aware that both nurses and community members might be emotionally affected by the disaster.

Nurses' awareness of how people adapted after the disaster

In this subtheme, nurses discussed their views on how people in the community adapted after a disaster event; this included coping strategies implemented by the community.

Nurses in the focus groups identified that one strategy was survivors working together to help each other in the aftermath of disaster, as the following focus group members mentioned:

"Soon after the disaster, various emergency aid came. People worked and helped each other to cope with the problems." (FG 1)

"A day after the quake, everybody lived their normal life again. The night (after the quake), they worked together to build the temporary shelters and tents and cleaned the ruins." (FG 2)

Another coping strategy that was frequently mentioned in the focus groups was acceptance, because of the community's strong belief in their religion. This was referred to as "*surrendered to God*":

"Some of them [people] were able to accept the reality. .... They were able to surrender everything [to God]." (FG 3)

"There were many houses collapsed in my area and one of my relatives passed away from the quake but everything was fine and normal. It was possibly because we realized that those all were from God. We got up and made our life better again." (FG 2)

Nurses in the focus groups believed that people in the community had become more prepared for a disaster, as this focus group member discussed:

"The people of Sleman, particularly the area around Murangan, are now more prepared with disasters; they are now more settled; they know how to anticipate the impacts of disaster; they have known how to recognize the alarm or warning system and they know what to do." (FG 4)

Nurses were aware of how people in the community adapted to disasters and how people are now more prepared.

Nurses' awareness of mental health problems following disaster

This subtheme discusses how aware the nurses were of mental health problems after a disaster. Nurses were able to discuss the identification of people with mental health problems after a disaster. Nurses in the focus groups highlighted that people with mental health problems would show different behaviours from the general community. These behaviours included being fearful, continually talking about their trauma or avoiding any discussion of the disaster event, as mentioned in this focus group:

“I think we could see it from their behaviours; they seem fearful and they focus on talking about traumatic events or conversely, they wouldn’t talk about matters triggering their trauma.” (FG 4)

Another behaviour that was constantly mentioned by the focus groups members was people being withdrawn:

“Keep quiet and don’t reply to our greetings. ... They just kept silent and seemed ignorant to their surroundings.” (FG 2)

Although these nurse participants had knowledge of how to identify people with mental health problems after a disaster, in their experience, they did not encounter any cases, as this focus group member discussed:

“Records on mental health problems after the eruption were zero. I mean, they just had such trauma [psychological] instead of mental health disturbance.” (FG 3)

It is important to note that the word “trauma” from an Indonesian perspective is used on a regular basis for any psychological disturbance, i.e. traumatic relationship, whereas mental health is recognised as a more serious long-term issue i.e. depression.

However, one participant noted that community members might hide their true feelings following the disaster event:

“I think it was not that open. They might have problems and they often cried but they were not eager to share their thoughts with us, not openly telling their problems.” (FG 2)

Nurses were concerned about some community groups that might be more vulnerable to mental health problems after disaster, albeit no cases presented to the health services that they were aware of. In particular, some of the focus group members believed that children were more vulnerable to the trauma of a disaster event, because children had a different way of thinking and were more dependent on support compared to adult survivors, as this focus group member explained:

"…whereas children who haven't got their way of thinking settled … would react differently when they survive a disaster … they for sure would find difficulties in overcoming the problems they face. … I think because their level of dependencies was still high. They didn't know where to go or what to do, what to be, whom they should be with, what happened with their school, and so forth." (FG 4)

However, there were other members of the focus groups who thought that there were some adult community members who were more vulnerable because of the stressors of looking after their family and making a future for themselves, as mentioned by this participant:

"Overall, the adults were more vulnerable than the children as they had to think about what next to do and how to make money for the family. … adults might have felt a different atmosphere before and after the disaster. … that was not easy for the adults to face, because they had many things in their minds." (FG 3)

There was also a discussion about other groups of community members that were more vulnerable to mental health problems following a disaster, such as those who had previous history of mental health issues, those who were directly impacted by a disaster, those who were unemployed and those who were not married, as this focus group mentioned:

"The first group was the individuals with a previous record of trauma. … those directly impacted by the disaster … The second ones were those who had a lower level of independence like … those with no job, and those who were single." (FG 4)

This subtheme suggested that although nurses were not aware of any cases of people presenting with mental health problems after a disaster, they did have the knowledge of how to identify mental health problems. In addition, nurses were aware of some groups that might be more vulnerable to mental health problems after disaster.

The first major theme provides evidence that nurses' experience of disasters had given them opportunities to understand not only their own emotional reactions but

also those of their community members. Nurses had noticed how people in the community had adjusted and become more prepared after the disaster. In addition, nurses were aware of how to identify mental health problems after a disaster, and were concerned about some groups of community members who might be more vulnerable to problems.

4.3.2 Nurses' Experience of Providing Emotional and Health Support in Disaster Events

This major theme describes nurses' experience of providing support for survivors with emotional problems, including the process to follow when treating survivors at health centers and nurses' experience of providing community education for disaster survivors. This major theme has three subthemes: nurses' experience of engaging with people after a disaster, assessment of emotional responses and the referral procedure at the health services, and nurses' experience of providing community education for disaster survivors.

Nurses' experience in engaging with people after a disaster

This subtheme discusses activities that nurses carried out when they met people who showed negative emotional responses, such as deep sadness. When engaging with people who were feeling down or sad, nurses provided time to listen sympathetically to their stories, and encouraged them to move forward, as this focus group member explained:

"We listened attentively to their stories and we offered our sympathy to them. As the patients must be feeling down, we then motivated them to rise again. We asked them to pray and we tried to give them solutions to their problems." (FG 4)

When concerned about the recovery of a community member, nurses also approached the survivor's family, as this focus group member mentioned:

"We as nurses tried to help them recover their emotional condition. We did that through communication with their family they trusted, if we could not directly approach the individual. They would put more trust in their families, rather than the nurses." (FG 3)

When it was assessed by nurses that the community member was feeling very sad and required further assistance, nurses responded by referring that person to a psychologist, and if medication was given by a psychiatrist, nurses assured that the community member took the medication regularly:

"We [nurses] consult them [those with deep sadness] to a psychologist. When they got medicine from a psychiatrist, we can assure and assist them to take the medicine regularly." (FG 2)

This subtheme shows that nurses had been engaged in several approaches to help survivors with their emotional conditions after a disaster.

Assessment of emotional responses and referral procedure at the health services

Nurses explained that there was only one procedure for all patients that came to the health centres, including for those with emotional issues, as this focus group member elaborated:

"We have only one fixed procedure dealing with our clinic. When a patient comes, the nurse will conduct the anamnesis [interview] with the patient and later, the doctor will check the patient. So, the patient came and they underwent an anamnesis then the doctor checked them and analysed the problems. The doctor would decide whether the patient could be handled here as an outpatient; or if they were in need of a referral, then the doctor would refer them to a certain hospital. That was the procedure." (FG 1)

Nurses also discussed the referral process for patients who needed services from a higher level of healthcare provider, as this focus group member explained:

"The people holding National Insurance might choose which service to take, whether family doctor or public health centre. If they choose the family doctor, then the referral letter should be from the family doctor. One who chooses the public health centre then might ask for the referral from here and sometimes the public health centre gave the referral based on the patient's request. They might choose

which hospital they want. After they decided where to go, then we made the referral. For emergency cases, the patients could go directly to the hospital and later they request a hospital letter and took the letter to the public health centre. And for general [without National Insurance] patients, I think it's better for them to directly go to the hospital, as it has more resources than the public health centre." (FG 3)

Despite the fact that the processes of assessment and referral for patients with mental health issues were well understood by the nurses in the focus groups, they were not available in a written standard operating procedure (SOP), as this focus group member mentioned:

"I think we haven't had them [a written protocol for referral] in here." (FG 1)

Nurses' experience of community education for disaster survivors

This subtheme discusses nurses' experiences and challenges of providing community education in the aftermath of a disaster.

Nurses provided a comprehensive approach to community education, which included a range of topics such as management of particular diseases that could become prevalent after a disaster, as this participant stated:

"Maybe about some diseases, there might be many diseases after the disaster." (FG 1)

Nurses also provided education to the community on mental health:

"We had a community education program and mental health education was also included in it. During the emergency response, we also held community education on the eruption [volcano] and mental health as well. And during the recovery program, after they returned from the evacuation shelters to their village, we also provided such programs to measure the psychological problems of the victims." (FG 3)

Nurses in the focus group revealed that, when conducting community education for disaster survivors, they experienced some challenges. The nurses indicated that they were required to provide many post-disaster information programs as this participant indicated:

"There were so many post-disaster programs ... There were lots of pieces of information given at that time – during the first phase of disaster responses." (FG 3)

The nurses reported that they had noted the different ability of the survivors to receive the information provided:

"... they [people] had different capabilities from one another. The information acquired depended on them [their capability to absorb information]." (FG 3)

The nurses indicated the importance of providing community education prior to a disaster to enable community members to be more prepared, as this participant highlighted:

"I hope that people have more knowledge of disaster, what they should do in the event of disaster, what a disaster's effects are, and hopefully problems related to mental health, such as depression and other psychological factors or something more chronic, would not occur." (FG 4)

This subtheme showed that nurses had been engaged in providing community education programs after disaster, regardless of several challenges that they encountered. Nurses also hoped that people would be more prepared on mental health issues, in the future.

The second major theme illustrated that nurses in both districts had been involved in activities in the aftermath of disaster to provide emotional and health support. Nurses had engaged with people in the community, provided them with motivation and empathy, provided services in healthcare centres, and provided the community with information through community education.

4.3.3 Nurses' Education and Training Related to Disaster and Mental Health

The third major theme discusses education and training that nurses had received in their undergraduate education and after they worked in healthcare providers, as well as their needs for training in the future. This major theme has three subthemes:

disaster competencies in undergraduate nursing curricula, continuing professional development, and nurses' needs for training and education in the future.

Disaster competencies in undergraduate nursing curricula

All nurses who participated in focus groups had an undergraduate (bachelor) or diploma degree. Nurses in the focus groups had at least five years of work experience in hospitals or public health centres, which meant they started their undergraduate education in 2008 or earlier. All nurses in focus groups agreed that there were no subjects in their undergraduate education related to disaster response, as these focus groups members discussed:

"No. There was none [disaster subject in nursing curricula]." (FG 1)

"No. We just learned about the grieving phases, in general." (FG 2)

"Only a little as there was no subject specifically discussing disaster. Regarding disaster, we learned by subject about emergency, geriatric, and mental health. One [topic] about disaster was not learned by subject." (FG 3)

Continuing professional development

After working in public health centres or hospitals, nurses obtained some training related to disaster using simulations to focus on emergency responses.

"The training was designed as a drill. As a medic, I learned from the simulation how to provide help to the victims and where to evacuate them." (FG 1)

One aspect of the training was about evacuation techniques, as this focus group member discussed:

"In general, the training directed that when a disaster occurred everybody should take this way or that. We also got the theory of evacuation techniques." (FG 2)

All focus group participants agreed that they obtained training on providing responses to physical injuries, but not on providing responses to mental health cases:

"We had ones on providing responses to patients with physical injuries – specifically on mental health responses…no." (FG 1)

"I myself haven't had one [training sessions for nurses regarding the provision of responses to patients' emotional problems] though actually such workshops or training may be available." (FG 4)

Participants agreed that most of the training and education that was available for nurses was related to disaster simulation and emergency response.

Nurses' needs for training and education in the future

Acknowledging that disaster caused both physical and mental health effects to the survivors, nurses were concerned about the importance of obtaining training and education related to emotional and mental health responses, as these participants discussed:

"I think we need training sessions for nurses, not only on how to help victims with physical diseases and injuries. But we also need to know the long-term effects of disasters on mental health. Yes, I think we need that kind of training." (FG 1)

"I think the nurses, as well as all other sectors, need to upgrade their skills so that they could provide adequate responses to patients with post-disaster mental health problems." (FG 4)

This subtheme highlighted the importance of future, specific training and education for nurses on mental health responses following disaster.

The third major theme described the education and training that have been received by nurses who were more focused on providing physical support, and the needs for future training and education related to post-disaster mental health issues.

CHAPTER 5: DISCUSSION

5.1 Introduction

A disaster happens when significant disruption to community structure and functions takes place, which impacts on the community's ability to cope (Birnbaum et al. 2015). Disasters in Yogyakarta are common in relation to volcanic eruptions, earthquakes and, more recently, pandemics such as the coronavirus disease 2019 (COVID-19). COVID-19 in particular had the potential to spread quickly, because Yogyakarta is one of the top tourist destinations in Indonesia. When a disaster event occurs, there will be psychological impacts for some individuals (Grigg & Hughes 2010). The psychological impact of a disaster event might be felt immediately and, for some, it might continue for a long time after the disaster. It is therefore important for community members to have an awareness of the potential for psychological distress in the aftermath of a disaster, because they need to understand at what point in time their psychological response is no longer considered normal. Improving community awareness of longer-term psychological distress might assist community members to seek medical advice earlier to prevent more serious mental health problems from developing. It is also crucial for health professionals, especially nurses, to have awareness and knowledge of potential post-disaster psychological responses. This is because nurses are both frontline responders in a disaster event and also provide care on a longer-term basis within the community. Nurses' understanding of how disaster impacts mental health will arguably assist them in providing support to and promoting resilience among survivors (Warsini et al. 2015).

This study aims to understand the awareness and knowledge of post-disaster emotional responses in adult community members and nurses in Yogyakarta Province, Indonesia. This chapter discusses significant findings of the study, which answer the research questions: (1) how aware are adult community members in Yogyakarta of post-disaster emotional responses? (2) what level of knowledge do adult community members in Yogyakarta have of post-disaster emotional responses? (3) how aware are nurses in Yogyakarta of post-disaster emotional responses? (4) what level of knowledge do nurses in Yogyakarta have of post-disaster emotional responses?

The classic disaster management cycle: Event, Response, Recovery, Mitigation, and Preparedness (Birnbaum et al. 2015), introduced in Chapter 1, will be used to frame the discussion. For the purpose of the discussion, the response phase and recovery phase of the framework have been combined, as have the mitigation and preparedness phases. This is because there are overlaps of findings in these phases, and integrating the two related phases will improve the flow of the discussion.

The discussion will start with the disaster event, which had been experienced by and impacted both the community and nurses, followed by the discussion on the response and recovery after a disaster event, and the last part will discuss mitigation and preparation for the next disaster event.

5.2 The Disaster Event

A geological disaster event is an undesirable incident that occurs as a consequence of energy that is released by change in a physical hazard(s) (Daily 2010). When such a disaster event is taking place, and for a few moments after, people might

experience intense emotions, such as anxiety, confusion, shock and panic, depending on the type of event. This section will discuss how the experience of a geological disaster event psychologically affected adult community members and nurses in Yogyakarta, Indonesia; how adult community members and nurses coped after the disaster; and what the survivors required after the disaster event to help them cope.

5.2.1 The Psychological Impact of a Disaster Event on Adult Community Members

Findings of the current study showed that all the adult community member participants had experienced some sort of disaster event in their lives, including earthquakes, volcanic eruptions and hurricanes. Adult community members described their disaster experience as extraordinary and unforgettable, with the resulting feelings of panic and/or shock. This finding confirms a previous study by Woods et al. (2014), which found that, after Cyclone Yasi in North Queensland, Australia, participants felt panic, feared for their lives and felt helpless. Adult participants, both in the current study and in Woods et al. (2014), referred to the disasters as “unforgettable memories”. A significant difference in the current study was that the participants did not report feelings of helplessness, while Woods et al. (2014) described how participants in their study routinely reported being unable to take control of their lives, in the aftermath of Cyclone Yasi.

Adult community members in the current study might not have expressed feelings of helplessness, due to their strong religious and spiritual beliefs, including their acceptance of the disaster event, which enabled them to cope. In addition, the adult

community members in the current study felt a strong connectedness with their community. This sense of connectedness was another influence that might have helped them cope after the disaster event. The use of coping strategies in adult community members will be further discussed in different parts of this chapter.

The feelings of shock and panic experienced by adult community members after a catastrophic event are normal (Grigg & Hughes 2010). Nonetheless, it is important for survivors to be aware of their emotional reactions during this phase, and to be informed that these feelings are part of a normal response following a disaster event. Grigg and Hughes (2010) suggested that appropriate and accurate information of normal stress reactions will help to reduce the distress that is experienced by survivors of a disaster. Furthermore, it is likely that disaster survivors will take action towards their emotional response, if they understand when their stress responses might no longer be normal. Survivors might be more likely to seek an early assessment and/or intervention for their emotional issues, so the problems will not become prolonged and severe.

5.2.2 The Psychological Impact of a Disaster Event on Nurses

Similar to the adult community member participants, many of the nurse participants in the current study had also experienced a disaster event. Each nurse had experienced the impact of a disaster as both a survivor and a responder. This study showed that nurses were aware that disasters had caused emotional distress to them and to other community members. Nurses described their emotional responses, at this phase, as feeling a sense of panic, being worried and even feeling traumatized at the time of the event, just as the adult community participants reported. This

finding is consistent with a previous study conducted with nurses in China who responded in a disaster event, which found that nurses experienced emotional reactions such as being afraid, worried, sad, shocked, or nervous (Li et al. 2015).

In the disaster aftermath, nurses' awareness of their own emotional response is crucial, as they need to manage their own distress in order to provide support for other survivors. Powers (2010) suggested that nurses should have knowledge of how disasters affect them in the short-term and long-term, and establish effective coping strategies and support systems to take care of themselves and one another within their professional community. Unfortunately, nurses in the current study reported that they had not obtained sufficient knowledge regarding mental health or emotional responses that might occur in the disaster aftermath, either from their formal education or from their continuing professional development. This lack of knowledge might have affected their ongoing wellbeing and the type of coping skills they used to treat any personal psychological symptoms. Poor coping strategies might in turn influence the standards of care provided to disaster survivors. However, nurses in the current study did not discuss types of coping mechanisms they used in the aftermath of disaster.

5.2.3 Adult Community Members' Coping in a Disaster Event

Adult community members in the current study reported that, after a disaster event, people worked together and helped each other to clean up and rebuild their houses. Helping each other is one of the community values of people in Yogyakarta, and in Indonesia, generally. They live together in the community and help each other when in need. The culture of helping each other can be useful to strengthen community

members' emotional and psychological wellbeing. As the community members participate in cleaning, rebuilding and repairing their houses, having a conversation with other survivors who also feel distressed from the disaster impact can be useful for survivors' mental health. Participants in the current study mentioned that talking to each other and sharing stories and jokes had helped them cope during the difficult situation. A quantitative study by Houston and Franken (2015) in the US noted that survivors often talk with others to help them cope after a disaster event. They suggested that the conversation between survivors might have served important purposes, such as seeking information, expressing feelings and gaining support. They also found that those who were engaged in more conversations after a disaster event showed more symptoms of post-traumatic stress (Houston & Franken 2015). Houston and Franken (2015) argued that those with more PTSD symptoms engaged in conversation because they felt that their neighbours were helpful and sympathetic audiences. In addition, a quantitative study by Risler, Kintzle and Nackerud (2015) showed that, when conversations between survivors of the disaster in Haiti had been disrupted due to evacuations, survivors were reluctant to talk with people they did not know. As such, conversations between evacuated survivors were inadvertently shut down. The adult community members in the current study mentioned that they frequently talked with their neighbours and that this was important to them in their process of recovery. The consequence of evacuations that cannot accommodate local neighbours staying together is an issue for further consideration. Future research on the impact of the evacuation process, which often separates local members of a community, on survivors' ability to cope and to share stories and feelings through conversations, is worth considering.

The current study highlighted that the community who were affected by a disaster showed solidarity during and after the disaster event. The community bonds resulting from hardships are valuable assets that would benefit the recovery process. The fact that people in Yogyakarta were connected and worked together after the disaster should be acknowledged by disaster responders and be utilised to optimize the recovery process. In addition, community involvement in the recovery process might help the community to have a sense of control over their lives that have been dramatically affected by disaster.

5.2.4 Nurses' Coping in a Disaster Event

Nurse participants in the current study reported that, as survivors of a disaster event, they had experienced significant personal loss and stress. However, they still focused on helping others in the community and indicated that they had put their personal feelings of loss to one side while caring for others who needed them. This has been identified by previous studies, which reported that nurses were committed to participating in a disaster response, and so did not show their emotions and paid less attention to their own needs (Hammad et al. 2017). Nurses' focus on helping other people distracted them from dealing with their emotions (Johal et al. 2015). Nurses' tendency to pay more attention to helping others might lead to unmet needs for their own self-care, which might impair their performance and wellbeing in the long term.

Nurse participants in the current study encountered an abundance of injured survivors, resulting in long work hours. Working under such pressure with their own feelings of stress and panic might affect nurses' performance (Moghaddam et

al. 2014). Nevertheless, the nurse participants recognised that they had to keep doing their jobs. Sugino et al. (2014), in their qualitative study in Bantul, Yogyakarta, described the factors that enabled nurses to keep working despite their emotional distress after a disaster. Nurses claimed that their cultural and traditional beliefs and family bonds were essential in helping them to continue working and to overcome difficult situations during disaster events. They shared their feelings and thoughts with their families, friends, and co-workers, so that they were able to face the situation to keep working and overcome difficulties together (Sugino et al. 2014).

It is important to provide nurses and other responders who experience emotional distress with psychological support and positive coping skills. This in turn helps build their ability to bounce back and to adapt to changing circumstances.

5.2.5 Disaster Survivors' Immediate Needs in a Disaster Event

Soon after a disaster event, many families were concerned about obtaining funds to repair their damaged houses. In this early phase, community member participants indicated that their first concern in the disaster aftermath was not to obtain help or support for their emotional or mental health issues.

After a catastrophic event, such as an earthquake, it is normal that individuals might feel and show some signs of psychological distress. However, during the early phase after a disaster event, it is inappropriate and ineffective to commence any formal intervention for these emotional responses (Grigg & Hughes 2010). Grigg and Hughes (2010) suggested that the focus in this phase should be on meeting physiological needs, such as food, shelter and safety. This focus corresponds with

Maslow's Hierarchy of Needs (Maslow 1970), which places physiological needs (breathing, food, water, sex, sleep, homeostasis and excretion) and safety (security of body, employment, resources, morality, family, health, property) before needs for love/belonging, self-esteem, and self-actualization. Madrid and Grant (2008), in a discussion piece about lessons learned from Hurricane Katrina, suggested that the process of psychological healing must first start with the fulfilment of physiological needs. The important relationship between physiological need fulfilment and improved mental health outcomes was also suggested by Davidson et al. (2013), in their study on disaster impact among different cultures. The government and policy makers should focus on meeting survivors' physiological (food, water, shelter) and safety needs, and at the same time, should be aware that any unmet physiological needs would subsequently affect survivors' mental health and wellbeing.

Immediately after a disaster event, besides meeting the survivors' basic needs, it is one of the disaster responders' responsibilities to provide survivors with reliable information related to disaster impacts and the developing effects of the disaster. Reliable and appropriate information about the impacts of the disaster, such as what infrastructures are still working, where it is unsafe to travel to and where to go for assistance, will help survivors to make the right decisions, and potentially reduce anxiety. Policy makers should have sound knowledge of the impact of disaster events on survivors; prioritize the fulfilment of basic, physiological needs; and ensure the availability of relevant information for the survivors.

Disaster responders, the government, policy makers and those who are involved in disaster relief programs should acknowledge that, immediately after a disaster

event, survivors will focus mainly on rebuilding their houses. Although it is important to recognize the emotional responses that appear in this phase, it is unnecessary to provide formal psychological interventions. This study suggests that the most important response at this phase is finding support from within the community, including religious and political leaders, rather than health professionals. This is because, support from within the community is important to help survivors to cope in the early phase of disaster, as emotional support is needed rather than a formal health professional psychological intervention.

This next section will now explore the steps in the cycle or framework of disaster, the response and recovery phases for both the community and nurses in Yogyakarta.

5.3 Response and Recovery after a Disaster Event

The response phase is a period before, during and immediately after a disaster event, when people act to prepare and respond to minimize the disaster effects and to provide immediate support for survivors. The recovery phase is the period after a disaster event, when physical infrastructures are rebuilt, and when emotional, social, economic and physical wellbeing are restored (Council of Australian Governments 2011). This section of the discussion will cover three topics: coping in the disaster aftermath; the awareness of post-disaster emotional responses and mental health; and emotional and mental health support in disaster events.

5.3.1 Community Coping in the Response and Recovery Phases

Adult community members in the current study had used different types of coping strategies in the response and recovery phases. This section will discuss three

significant mechanisms that helped community members to cope during the phases: restoration activities, community support, and religious or spiritual coping.

5.3.1.1 The use of restoration activities as a coping strategy in the response and recovery phases

In the response phase of disaster, the focus of most families was still the same as in the impact phase of disaster – that is, to restore their houses, which often required financial support. Depending on the seriousness of the disaster, families dealt with a range of financial problems. Many were unable to work after the disaster, and so could not afford to pay for basic amenities such as fuel or food, or to restore or rebuild their houses. Previous studies have shown similar findings regarding survivors' financial problems (Lee et al. 2010; Tracy, Norris & Galea 2011).

Adult community members in the current study appeared to use the activities of rebuilding and restoring as coping strategies, so they had something to do and could forget about their sadness. The fact that adult community members in the current study focused on cleaning and repairing activities and reported that they were less focused on their emotions, indicates that they used problem-focused, rather than emotion-focused, coping strategies. The use of problem-focused coping in the disaster aftermath is beneficial for survivors; Sattler et al. (2014), in a quantitative study, suggested that problem-focused coping contributed to posttraumatic growth. Posttraumatic growth is an idea that suggests that a traumatic event might result in a positive experience (Sattler et al. 2014). By contrast, Sattler et al. (2014) suggested that emotion-focused coping was shown to increase the occurrence of PTSD. Disaster relief programs should involve community members in activities

that contribute to their families and/or community in the aftermath of disaster, because this would help them to find a positive way of coping, keep connected to their community and may therefore contribute to lowering the risk of experiencing mental health problem, such as PTSD.

5.3.1.2 The use of a religious and spiritual coping strategy in the response and recovery phases

Adult community members in the current study perceived that a disaster event was a trial from God, designed to test the strength of one's faith (i.e., to see how the destruction from the disaster would impact on survivors' belief in God). Whilst community belief that disasters are a test from God has not been mentioned in previous studies, some studies found that survivors believed disasters were sent from God as a punishment to the people in the community (Rosellini et al. 2014; Stanko et al. 2015). The fact that participants in the current study perceived disasters as a test, instead of a punishment from God, might provide benefit in the recovery process, in the sense that survivors would undertake efforts to pass the test. For instance, survivors might be more likely to turn to God to ask for guidance and strength. Participants in the current study mentioned that after a disaster event, they engaged in more prayers and arranged more religious activities, including inviting religious teachers to their community. These coping strategies helped them to deal with the difficulties in the aftermath of disaster. Previous studies have shown that many communities in the world use religion as a coping strategy in difficult times (Cofini et al. 2015; Raviola et al. 2013; Xu et al. 2011). The use of religion as a coping mechanism must be taken into consideration when providing care for survivors in Yogyakarta, or in Indonesia more generally. Religious values and

beliefs strongly influence how people interpret disasters, how the community recovers, and what strategies should be implemented to reduce disaster risk (McGeehan & Baker 2017).

Participants in the current study argued that disasters reflected God's will. They believed that disasters are unavoidable events that have already been written in "God's book". That is, community members appeared to hold a fatalistic view. Fatalism is "the belief that future events are inevitable or unalterable" (Merriam-Webster's Collegiate Dictionary, 2006). This belief, however, might lead people to concentrate less efforts on increasing their preparedness for future disaster events, particularly in relation to their mental health. People might be reluctant to learn about the emotional/mental health impacts of a disaster, and how they might manage mental health issues related to disaster. This fatalistic attitude was highlighted by adult community members in the current study because they stated that survivors of a disaster were expected to "just accept" the disaster that had occurred. This attitude as a coping mechanism might be a positive way of accepting the consequences of a disaster. A fatalistic attitude might also be useful in helping survivors relieve their sadness, however, it might not be as helpful in the long term especially if there are frequent disaster events. There is still disagreement in the literature on how acceptance influences disaster preparedness. Levy, Slade and Ranasinghe (2009) suggested that acceptance would inhibit preparedness and mitigation, while De Silva (2006) suggested that acceptance would increase preparedness and mitigation. Both studies were conducted with Sri Lankan Buddhists. A more recent study by McGeehan and Baker (2017) showed that

acceptance of disaster by Buddhists led to less preparedness and less awareness of a disaster plan.

Given that most people in Bantul and Sleman districts are Muslims, it is beneficial for both the impacted community and disaster responders to understand more about the Holy Quran's teaching on disaster. A literature review by Ghafory-Ashtiany (2009), which examined the correlation between religion (the view of Islam) and disaster risk reduction guidance, argued that the fatalistic view of disaster needs to change. Ghafory-Ashtiany showed that there are concepts in Islam, as evident in the teachings of the Quran, that correspond with risk reduction and disaster prevention. This study concluded that community development after a disaster should be attained with faith, knowledge and the conduct of good deeds. Ghafory-Ashtiany (2009) suggested that, in addition to perceiving disaster as God's will, people need to do good deeds in order to be safe and resilient, and recover. These deeds include: adhering to expert guidance; making sure that planning and development activities are compatible with disaster risks; obeying rules and regulation; and conducting safe behaviours. Ghafory-Ashtiany's (2009) suggestions seem to accommodate both the community belief and also disaster risk reduction and prevention programs.

Because adult community participants perceived disasters through a religious lens, many used spiritual or religious coping strategies in the disaster aftermath. Previous studies have indicated that religious activities are part of community coping mechanisms (Cofini et al. 2015; Raviola et al. 2013; Xu et al. 2011). Adult participants in the current study argued that there was an increase of religiosity in

Bantul and Sleman after the disaster events. This finding contrasted with a study by Hussain, Weisaeth and Heir (2011) in Norway, which showed that the most survivors (86.5%) did not report any changes in their religious beliefs after the 2004 tsunami. The study was conducted with Norwegian tourists who had experienced the tsunami when they were in other countries affected by the tsunami, and had been repatriated back to Norway. It seems that the role of religion and religiosity in the aftermath of disaster is a complex phenomenon that is contextual and influenced by culture. Given that the community in this study used religion frequently as a positive coping mechanism in difficult times, future studies on the significance of religion and religiosity in the aftermath of disaster in Yogyakarta and in Indonesia are required. Any future disaster relief programs, where religion is a big part of the community culture, should acknowledge the value of the community engaging in religious activities in the aftermath of disasters. Programs should include re-establishment of religious activities and institutions at the beginning of the response and recovery phases.

In addition to conducting prayers, participants in this study mentioned that they invited a religious teacher to the neighbourhood. This is because people tend to obey what religious leaders/teachers teach, especially in difficult times, such as in disaster aftermath or in sickness. As such, religious leaders/teachers are significant persons to be involved in disaster relief programs to increase community resilience. Policy makers should pay attention to religious teachers'/leaders' and community leaders' points of view in order to develop religion and culturally sensitive disaster relief and preparedness programs. McGeehan and Baker (2017) argued that involving religious leaders, who could provide important contextual information,

would create more comprehensive disaster management plans that would meet the community's needs.

5.3.1.3 The role of community in the response and recovery phases

In addition to engaging in restoration activities for themselves, adult community members mentioned that they participated in community work to improve the local environment. Findings of the current study showed that being in a supportive community played a significant role in the response and recovery phases of disaster. Participants worked together to clean up, rebuild or restore destroyed houses and this connectedness also provided each other emotional support. It is very common in Indonesia, especially in rural areas, that people live together and help each other during hard times. The community members felt sad but supported those impacted by the disaster and felt a strong connectedness within their local community. The sense of connectedness and solidarity, referred to in the literature as community social cohesion (Hikichi et al. 2016), was important in that it appeared to increase individual resilience. Several previous studies have also confirmed the findings of the current study. Labra, Maltais and Tremblay (2017) suggested that, after an earthquake in Chile, adults felt more solidarity and had better relationships with their families, relatives and friends. Similar findings were reported by Stanko et al. (2015), which indicated that after Hurricanes Katrina and Rita in the US, there were increased solidarity among community members, improved family relations and better social cohesion. Furthermore, Heid et al. (2017) suggested that high levels of social cohesion in the aftermath of disaster correlated with low levels of PTSD symptoms in survivors of Hurricane Sandy in the US. A previous study of Hurricane Ike suggested that community support moderated the correlation

between disaster impact and mental health outcomes in urban and rural areas (West et al. 2013). By contrast, low levels of community support increased the association between disaster impact and mental health distress (PTSD and depression) (West et al. 2013). Chen et al. (2007) reported that survivors of disaster who received more social support showed better mental health, while Kaniasty and Norris (2008) confirmed that six-twelve months after a disaster, social support prevented PTSD.

In the response and recovery phase, it seems that, generally, survivors are more connected to their community than before the disaster occurred and engaged in communal activities. The findings of this study show the important role of community as a medium for the survivors to cope during hard times. This study suggests that community should be involved in programs to increase resilience. It is possible that community-based programs would be more effective in increasing resilience than individual-based approaches. Future studies on this subject will be beneficial for disaster survivors.

In summary, this section has highlighted three key points related to coping in the aftermath of disaster: 1) survivors of disaster focused on restoration of houses and used it as a coping strategy, especially in the response phase of disaster, 2) survivors used religion as a coping strategy, hence religious leaders/teachers should play significant roles in disaster response and recovery phases, and 3) community played a significant role in the disaster response and recovery phases.

5.3.2 Nurses' Coping in the Response and Recovery Phases

In the response and recovery phases, nurses in the current study continued to provide care to disaster survivors. They participated in activities to help survivors of disaster with their intense emotional reactions, such as by having conversations with disaster survivors, and providing them with health education. In addition to providing support for community members in public health centres and hospitals, nurses also engaged in various programs that were delivered to disaster survivors in the evacuation camps. One of the programs that was carried out by nurses was community education. Nurse participants in this study reported there were large amounts of information delivered during the community education activities, including information on mental health. However, the community education provided in the early response and recovery phases might not be appropriate. It might be challenging or impossible for the community members to grasp or learn new information when the timing is not right; e.g. when they are hungry, sleepless, uncomfortable and worried about their future. Hence, community education must be delivered in the mitigation stage, together with other programs, to increase disaster preparedness. Nurses should have sound knowledge about the disaster phases, and what the survivors need in each phase of the disaster.

Nurses in the current study mentioned that they often worked long shifts after a disaster event, to provide care for disaster survivors. A study by Sugino et al. (2014), conducted in Bantul, similarly reported that nurses experienced heavy workloads after disasters. Providing care in a high workload context and taking care of those with emotional stress can cause nurses to experience compassion fatigue, a feeling where nurses do not have sufficient energy to sympathise with others'

emotions (Johal et al. 2015). Furthermore, nurses in Johal et al.'s (2015) study reported that working in the aftermath of the Christchurch earthquake in New Zealand impacted their long-term wellbeing, and increased their risk for burnout and inadequate coping strategies. In addition, a study by Tang et al. (2015) showed that medical responders, who were mostly nurses, demonstrated low quality of life, particularly around their mental health, after helping earthquake survivors. Hammad et al. (2017) suggested that it is important for nurses to obtain education about what a disaster would be like and how it would affect them. The exhaustion and impaired mental health status experienced by nurses might consequently impair the services they provide, and could subsequently risk patients' safety. Therefore, it is critical for all parties involved in the disaster response, especially nurses and healthcare providers, to acknowledge the risk of burnout, to seek help when they need to, and to support each other. Policy makers, in particular the health ministry, health offices at the province level, and hospitals and public health centres should manage and arrange the work of nurses and other healthcare providers so that they work in reasonable hours and shifts, and are provided with appropriate mental health support.

The next section will discuss the mitigation and preparedness phases of the disaster cycle.

5.3.3 Adult Community Members' Awareness and Knowledge of Post-Disaster Emotional Response and Mental Health

No previous study has investigated adult community members' awareness and knowledge of emotional responses after a disaster. Thus, the findings related to the

awareness and knowledge of emotional responses and mental health in the aftermath of disaster, identified in the current study, are new to the literature.

Adult community member participants in the current study were aware of several emotional responses in the event of disaster and early in the response phase following a disaster, as discussed in the previous sections. This awareness is understandable; survivors' emotional responses were so intense at the early disaster phases, and so it was arguably easy for the survivors to recognize and acknowledge those feelings.

In the response and recovery phases, however, given that adult community members focused primarily on their house restoration, it is possible they were not paying much attention to the emotional responses that were encountered by their family member(s) or themselves. Adult participants in the current study did highlight that disasters could cause sadness, however, they believed that this sad feeling was normal and would recover overtime, which is true for most populations in the aftermath of a disaster (Grigg & Hughes 2010). Adult participants in the current study indicated that they might not be aware of their or their family members' emotional reactions, unless they were really intense and had caused noticeable behavioural changes, such as nonstop crying or screaming, aggressive behaviours, or withdrawing from family and friends.

While most of the population can adjust and fully recover after a disaster, it is important for community members to understand and have awareness of the type of sadness that requires further attention. Adult participants in the current study did not show knowledge of how long "normal" sadness might be. This lack of

knowledge might cause them to neglect the signs of sadness that should be taken more seriously, resulting in survivors experiencing more serious emotional problems in the future. A study by Wang et al. (2008) showed that survivors of disaster with new onsets of mental health problems after Hurricane Katrina failed to seek help and support. This failure to seek help was because they did not feel the need, and they believed that the symptoms would get better over time (Wang et al. 2008). It is crucial for healthcare providers to be able to educate community members on when to seek help for the sadness they have been experiencing. In addition, it is important for healthcare providers to conduct early detection of emotional and mental health problems in the community in the aftermath of disaster. Policy makers should include this early detection into the disaster relief plan, in the appropriate time frame.

Adult community members in the current study reported that they noticed a small number of survivors who experienced being "mentally down", which they described as having symptoms similar to depression. Depression is one of the most prevalent mental health problems in the aftermath of disaster, in addition to PTSD (Lee et al. 2010). Interestingly, despite the symptoms of being "mentally down" that they described, adult participants in the current study did not think that "mentally down" was a serious mental health condition. For them, a serious mental health problem was "*stres*" or being crazy (which, in the Indonesian context, is described by most people as a condition where the individual shows behaviors such as: continually crying, speaking uncontrollably and signs of agitation). This misperception might cause disaster survivors to feel reluctant to seek help when experiencing depression symptoms. Community education on the effect of disaster

on mental health, especially depression and PTSD, will be beneficial for recovery, and should be included in disaster relief programs.

The use of the word “crazy” is also common in Aceh, in addition to other terms such as “not in order” and “off nerve” (Marthoenis et al. 2016) to refer to people with mental health problems or illness. The use of the word “*stres*” or “crazy” to define people with mental illness in Indonesia often functions as a label or stereotype. According to Link and Phelan (2001), labeling and stereotyping are two components of stigmatization. The use of a label by the adult community participants to describe people with mental illness suggested that there is still a negative stigma about mental health and mental health problems in the community. It seems that knowledge of mental health, in general, and not only limited to disaster, is still lacking in the Indonesian context. Community education is required to improve community’s knowledge of mental health issues, in order to reduce the negative stigma towards them.

Adult community members in the current study added that disaster survivors experienced mental health problems because they were unable to accept what had happened to them. Participants highlighted that people with mental health problems or illnesses were expected to accept their realities, surrender to God, and engage in more prayers. It seems, then, that participants’ belief that disaster was a test from God also influenced how participants viewed mental health problems after a disaster. A previous study conducted in Aceh, a province in Indonesia with a Muslim majority, showed similar findings, suggesting that mental illness was a test

from God, and thus, people with mental illness should improve their faith (Marthoenis et al. 2016).

In addition to the perceived inability to accept the reality, adult community member participants in the current study believed that mental health problems in the aftermath of a disaster were derived from people's own minds. Thus, they were responsible for their own mental health. This finding is new to the literature related to disaster mental health. It is interesting that, while most of the adult community participants highlighted that the community was willing to provide support for community members who experienced difficulties, including problems with mental health, at the same time, they also expected the affected individuals to be responsible for managing their own problems. This might mean that participants in this current study respect individuals' choice on how the individuals chose to manage their mental health problems. However, this might also indicate that those with mental health problems were to be blamed for their conditions because they were believed to not take responsibility for moving on with their lives. This could also simply mean that community members were able to provide more practical support such as rebuilding, or providing help to take the survivor to hospital, but they did not know how to take care of those with mental health problems. The fact that participants in this study perceived mental health problems as merely caused by people's own minds potentially reflected lack of adequate knowledge about the impact of disaster on mental health and how mental health problems/illnesses progress, including the causes of mental health problems. This is an important finding to consider in developing mental health literacy programs for the community, in general, and especially after a disaster.

Adult community members in the current study mentioned that those who were able to get on with their lives were normal, while those who could not move on and return to their usual activities were not normal. This seemed to indicate adult community members' understanding of resilience – the ability to bounce back. In other words, adult community members implied that survivors were expected to be resilient, to be able to go back to normal life. However, it is unclear whether adult community members have the required knowledge on how to become resilient, what factors amount to being resilient, and whose responsibility it is to increase community resilience. These topics would be valuable to be studied in future research.

In the response and recovery phases, adult community members in the current study reported that they had received information, via community education, on several communicable diseases. However, they had limited information on mental health issues and where to access this information. Being the closest healthcare provider to the community, public health centres should be one of the primary places for the community to access any information regarding health, including mental health. However, nurse participants asserted that, with their lack of resources, it was challenging for public health centres to provide such a service. Other sources of information on mental health for the community should be community midwives (midwives who practice in the village usually have a clinic in/near their houses) and health cadres (volunteers from the lay population who are trained by public health centres, and who conduct some tasks, such as health surveys). However, community midwives' and health cadres' levels of knowledge of mental health and disaster are unknown. Future research on mental health in relation to disaster should

involve all healthcare providers, including general practitioners, community midwives and health cadres.

5.3.4 Nurses' awareness and knowledge of post-disaster emotional responses and mental health

This study is the first to explore nurses' awareness and knowledge of post-disaster emotional response and mental health in Indonesia. As responders in the disaster aftermath, nurse participants were able to discuss, during the focus groups, their knowledge of the identification of people with mental health problems after a disaster. Nurses mentioned some of the symptoms that might indicate that a survivor had a mental health problem, such as being fearful, continually talking about their trauma or avoiding any discussion of the disaster event. Avoiding discussions is similar to a symptom of PTSD (American Psychiatric Association 2013). Although PTSD can only be clinically diagnosed after one month (APA 2013), the appearance of its symptom(s) in the early phase of disaster aftermath could be an indication of PTSD, as previous studies have suggested (Hashoul-Andary et al. 2016; Xu et al. 2011). These studies suggested that identification of emotional distress in the early phase after a disaster by responders would be beneficial in predicting emotional problems that might be experienced in the future. In addition, a study by Lee, Shen and Tran (2009) suggested that high psychological distress after a disaster was correlated with low psychological resilience. Hence, it is important that disaster responders can identify survivors with psychological distress, monitor them into the future, and provide the necessary support. It will be helpful for survivors' recovery if all disaster responders have the knowledge to recognize continued emotional distress among disaster survivors.

Whilst nurses in the current study reported having the knowledge to identify mental health problems after a disaster, they were not aware of any such cases presenting at the health services. Adult participants in the current study similarly reported that there was only a small number of people who had difficulty accepting reality and who experienced prolonged sadness, which they referred to as being mentally down or depression-like symptoms. The absence of adults with mental health concerns at the public health centres or hospitals in the current study did not mean that disaster survivors in Bantul and Sleman did not seek help at other public health centres/hospitals. They might have sought help at other public health centres/hospitals that were not the study sites, highlighting a limitation of this qualitative study. However, it is also possible that survivors did not seek help from professionals, or did not discuss their feelings with these nurse participants. If they did not seek help, the next question would be why they did not do so? The answer might be related to the discussion in the previous section; adult participants' focus was on rebuilding or repairing their houses, instead of taking care of their mental wellbeing. However, it is also possible that adult community members were not aware of the importance of seeking help or support related to their mental wellbeing. They may also not be aware of where to seek this support. Future studies on disaster survivors' help-seeking behaviours related to mental health problems would be beneficial to provide further explanation, and to establish the best care for them.

Although nurses in the current study did not have experience in providing care in the clinical context for those with mental health issues after a disaster, they were aware and understood the process to follow at the public health centres and

hospitals, regarding assessment and treatment for those with mental health issues. Nurse participants indicated that written standard operating procedures (SOPs), the process of assessment and treatment for those with mental health issues, were not available at their work places. It would seem, then, that the procedures conducted by nurses, in the current study, are based on usual practices that have been conducted for a long time and which are continually taught to new staff. While it was easy for experienced nurses to follow the procedure without written SOPs, it might be challenging for new staff to provide appropriate care if there are no written procedures for them to refer to, especially during a disaster event.

5.4 Mitigation and Preparedness for the Next Disaster Event

The mitigation phase of the classic disaster management cycle is a phase where activities are undertaken to prevent a future event from occurring, and to minimize the impact if a future event does occur (Birnbaum et al. 2015). By contrast, preparedness refers to a response capacity, specifically the community's ability to respond and prevent further damage when a disaster event occurs (Birnbaum et al. 2015). Andress (2010) suggests that mitigation and preparedness phases share similarities, in that they both involve planning activities that aim to decrease the impact of a disaster event. This section will discuss the importance of education and training for nurses in order to achieve preparedness, especially related to mental health in disasters; as well as the importance of community education on post-disaster emotional response and mental health. The discussion of mitigation and preparedness activities in this study is limited to mental health in the aftermath of disaster.

5.4.1 Nurses' Education and Training on Post-Disaster Emotional Response and Mental Health

Education, training and practice are vitally important in the preparedness phase and the key to effective responses (Powers & Daily 2010). Nurse participants in the current study stated that there were insufficient disaster competencies in their bachelor/diploma education. This is understandable given that disaster management had only been included in the Indonesian nursing curricula in 2010, as a result of many previous disasters, including the tsunami in 2004 and Yogyakarta earthquake in 2006 (the two biggest disasters to affect Indonesia). A previous study in China (Yan et al. 2015) similarly reported that nurse participants in the study had not received any training related to disaster management, prior to three large earthquakes that occurred in China in 2008-2012. Hammad et al. (2017) also suggested that, while nurses identified the importance of having education on disaster, nurses reported that they lacked it, causing them to feel less confident and prepared in a disaster response. Whilst there has been improvement in nursing curricula in Indonesia in relation to disasters, further training and drills are needed to increase current nurses' competencies. A study in Bantul, Indonesia (Sugino et al. 2014) similarly revealed that nurses expressed a need for training and education to achieve disaster preparedness, including the need for mental health care training.

Generally, in Indonesia, trainings on disaster for nurses are obtained as part of continuing professional development. Nevertheless, training on disaster mainly focuses on emergency response, such as triage, trauma management, simulation and drills. A study by Madrid and Grant (2008) similarly showed that government and policy makers often prioritize physical health over mental health preparedness in

disaster response. While the need for emergency response is enormous, especially in a large-scale disaster, nurses are also required to have competencies in psychological care, which is one of the competencies listed in the ICN's core competencies in disaster nursing (ICN, 2019). The use of ICN Disaster Nursing Competencies as a guide to develop disaster competencies in nursing curricula was recommended by Chan et al. (2010). They conducted a pre- and post-test study in China, which showed that, after training was developed using ICN Disaster Nursing Competencies, nursing students' competencies increased (Chan et al. 2010). Nurse participants in a previous study by Yan et al. (2015) reported that psychological intervention in the aftermath of disaster was important and was one of the skills that required training, because nurses had not performed psychological crisis intervention proficiently. Unfortunately, nurse participants in the current study suggested that there is limited training available to increase nurses' knowledge and skills related to mental health issues after disaster.

Since the Aceh tsunami in 2004, initiatives have been undertaken to train nurses working in public health centres in Indonesia. One type of training, namely "community mental health nursing" training, has three objectives, which are to: 1) increase nurses' knowledge and skills to take care of persons with mental disorders at home, 2) train health cadres in the community to be aware of mental health disorders that happen in their community, and 3) train nurses to have the ability to be a researcher and mental health advocate. However, this training is not related specifically to disasters or to emotional responses after disasters and is available only to nurses who are managers of mental health programs at the public health centres. Typically, there is only one such nurse in each centre. Nurse participants

in the current study implied that, with the lack of resources and huge responsibilities at public health centres, it is challenging for every nurse to learn about and understand mental health in disaster events. Where it is not possible for all nurses to be involved in community mental health training, it might be useful for public health centres to have a routine internal meeting to discuss and share the training that has been received by one of the nurses.

Nurses in this study highlighted the importance of training and education related specifically to mental health in disaster. This confirms a previous study by Wenji et al. (2014) conducted with nurses in China. Participants in Wenji et al.'s study also identified that their lack of knowledge and skills in mental health care and counseling after disasters had caused them to feel helpless in caring for patients who were experiencing post-traumatic emotional responses. A grounded theory study in China also suggested that disaster nursing education, disaster preparedness and disaster mental health were urgently required to make the work of nurses more effective, and to minimize disaster effects (Li et al. 2015). Cianelli et al. (2013), in their qualitative study conducted with healthcare workers after an earthquake in Haiti, highlighted the importance of mental health training for healthcare providers. They suggested that mental health training could change the healthcare providers' perception of mental health issues, provide them with the required knowledge and skills, so that nurses could respond quickly and effectively, and develop appropriate interventions for those who experienced mental health problems after disaster (Cianelli et al. 2013). Moghaddam et al. (2014), in their qualitative study exploring Iranian nurses' needs in the aftermath of disaster, also suggested that adequate education and preparation for disasters can enhance nurses' competencies. Nurses

in Moghaddam et al.'s (2014) study expressed their demand to learn essential skills to deal with survivors' emotional reactions and needs. In addition to education and training, a qualitative study in China by Li et al. (2015) suggested that nurses who were dispatched for disaster response should have a strong "mental quality", because negative emotional responses would affect other responders or disaster survivors. One participant in their study described this mental quality as "not scared" or not showing your fear to others (Li et al. 2015).

It is clear that findings from previous studies are consistent with the perceptions of nurse participants in the current study – namely, that they required training and education in mental health and emotional support in relation to disasters. Nurse education and professional organizations in Indonesia should improve disaster competencies in nursing curricula, as well as develop training as part of continuing professional development, not only focusing on emergency management but also on mental health competencies.

5.4.2 Community Education on Post-Disaster Emotional Response and Mental Health

Adult community members in the current study were provided with limited information about mental health after the disaster had occurred. There might have been community education conducted by nurses, as mentioned in the focus groups, but the current study did not investigate further when the education was conducted. It is possible that, if community education was conducted in the early stages of the response or recovery phases, it might not have been effective given that the community members' focus was on meeting their basics needs. There are other

possibilities for why community members did not have sufficient knowledge on mental health in the aftermath of disaster: first: the adult participants in the current study represented those who did not attend community education; second: there were too many programs delivered in the aftermath of disaster (as the nurse participants reported), meaning the information given to the community was not properly understood or learned; and third: public health centres did not have the same SOP on what information should be given to the community, leading to differences in the kind of information received by the community. Mental health education for the community should be delivered to all adult community members, in all settings (healthcare facilities and in the community). Comprehensive programs and approaches should be planned by policy makers in Indonesia.

In addition to community education, it might be beneficial to provide education and training on mental health in the aftermath of disaster for religious leaders/teachers, so that they can influence people to be more prepared. However, it might be challenging to educate religious leaders/teachers to have the same perception about disaster and its impact on human mental health, and the steps that should be undertaken during the disaster aftermath. During the COVID-19 pandemic in Indonesia, initially, there were two contradictory perspectives from religious leaders/teachers. The first was that everything, including human sickness and death, had been written by God, hence people did not have to be afraid (Baihaqi 2020a, 2020b; Syaefudin 2020), justifying their disobedience to the government's and health ministry's recommendations on social distancing (Ministry of Health Republic Indonesia 2020; President of the Republic of Indonesia 2020). The second, supported by the Indonesian Ulema Council's fatwa (Majelis Ulama

Indonesia 2020), was that people should comply with the government's and health ministry's recommendation to practice social distancing, as an effort to stay healthy and keep the community from spreading the virus (DETIKFLASH 2020; Wawan 2020). The Indonesian Ulema Council's fatwa highlighted nine points for stopping the spread of COVID-19, including self-isolation for those exposed to COVID-19, not conducting or cautiously conducting congregation prayers, physical distancing, safe corpse handling, and banning of panic buying. However, disagreements regarding social distancing continue, and this might also be the case for mental health in the aftermath of disaster.

In addition to the lack of awareness and knowledge about emotional responses and mental health in the aftermath of disaster, adult community members in the current study did not have knowledge of where to find information regarding mental health in the disaster aftermath. This limited knowledge might indicate that these information sources were not available. Alternatively, it might indicate that, because adults were not aware of the potential mental health problems, they did not feel the need to obtain information about the topic, and so were unaware of where to do so. Information regarding mental health in the disaster aftermath, or generally, should be available for access in the community, and the community must have knowledge of how and where to obtain the information. It is important for the community to understand the importance of preparation, which, added to their ability to cope using religion, would help people to recover faster after a disaster.

5.5 Summary

This chapter answered the research questions that disaster events are unforgettable for adult community survivors, causing them to experience some negative emotional responses and feelings. In the early phase of disaster, despite what they felt, adult survivors focused on their basic physiological needs and restoration. The restoration process in the aftermath of disaster involved community members helping each other. This study confirmed previous research that has demonstrated the crucial role of community during disasters. This study showed that community members perceived disaster from a religious point of view, which determined the type of coping mechanisms they used. This study has provided data on the lack of awareness and knowledge of emotional responses and mental health in the aftermath of disaster amongst adult community members. The findings suggested that there was insufficient information related to emotional responses and mental health in the aftermath of disaster, as well as mental health in general. In addition, there was still stigmatization towards mental illness amongst the study population.

Nurses, who are both responders and survivors of disaster, also experienced the psychological impacts of disaster. However, they focused on providing services to the community. Despite the fact that nurses reported not encountering any disaster survivors with mental health problems after the disaster, nurses in the current study seemed to have some awareness and knowledge of post-disaster emotional responses and mental health. Nurses' identification of people who might be experiencing PTSD was, however, limited. Nurses in the current study emphasized the need for training and education, especially related to emotional responses and mental health in the aftermath of disaster.

Overall, this study demonstrates that there is limited awareness and knowledge of emotional responses and mental health in the aftermath of disaster in adult community members and nurses who lived in Bantul and Sleman districts, Yogyakarta. Consequently, future training and education are important for both groups, to increase their preparedness for future disaster events.

CHAPTER 6: CONCLUSION

6.1 Introduction

In the final chapter, insights from the study are highlighted as well as the limitations of the study and the recommendations for future research and practice. This chapter concludes with a reflection from the researcher on the research methodology, the strengths of the study and the challenges encountered on the way.

6.2 Study Conclusions

This study found that community member participants were aware of the intense feelings just after the disaster event. However, it appeared that adult community member participants had insufficient knowledge on what point in time that their reactions should no longer be considered normal and needed further intervention. A sense of “sadness” reported by adult community members remained for some members of the community but was not recognized as a post-disaster emotional response. Moreover, the symptoms of depression that were experienced by a small number of survivors as described by the participants were not considered as serious mental health issues. This indicated that the awareness on post-disaster emotional responses and mental health lessened over time, leaving community members with no preparation regarding their mental wellbeing during the long process of recovery. In addition to that, adult participants also mentioned their concern regarding the limited information provided around mental health in the aftermath of disaster.

This study highlighted that following a disaster, adult community member participants consistently engaged in a number of activities within their community.

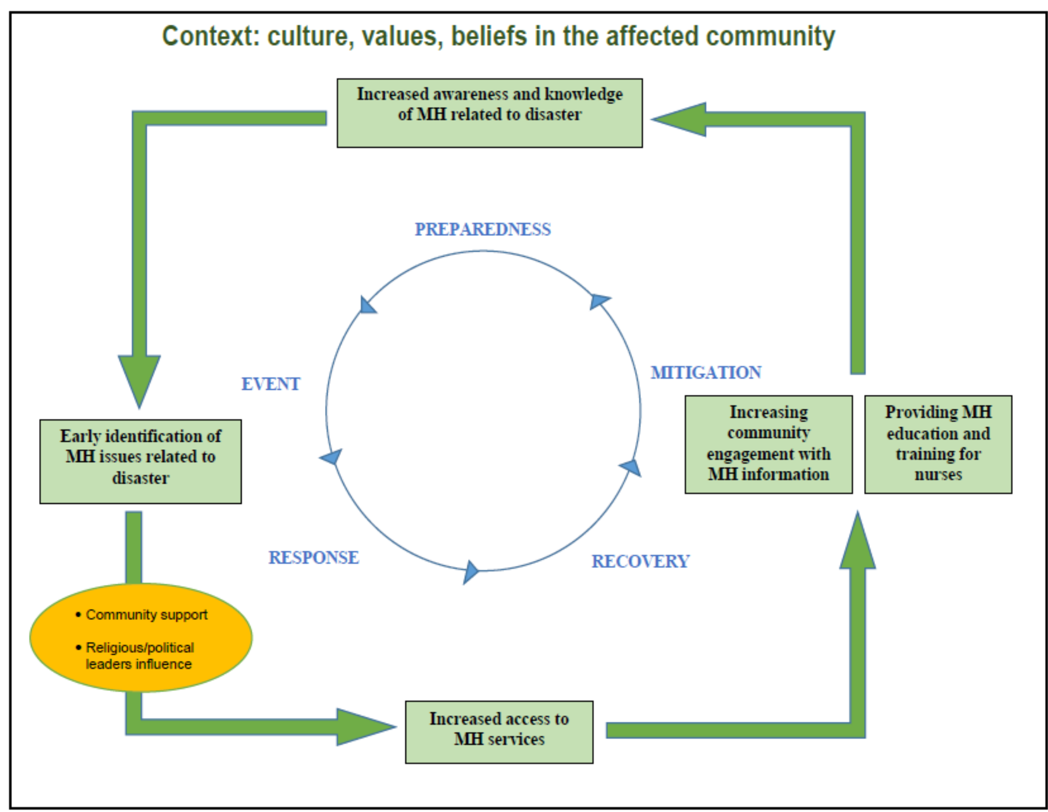
Adult community members acknowledged that community connectedness had helped them cope during the response and recovery phases of disaster. In addition to community engagement, this study suggests that the use of religious and spiritual coping strategies was significant for many of the community members. In relation to this, the role of religious teachers and leaders was highlighted as crucial in the recovery phase. The importance of their role as leaders could play a more substantial part in reducing the negative stigma about mental health issues before and during the recovery phase of a disaster.

This study showed that nurse participants could identify and were aware of the emotional distress experienced by disaster survivors, including themselves. However, the lack of awareness and knowledge of the assessment and interventions for ongoing problematic mental health issues was acknowledged by participants. If this is not addressed then this has the potential to contribute to a failure by the profession to take care of their own and their community members' mental health wellbeing. The brief overview of the nurses' undergraduate curriculum highlighted that nurses in this study did not receive adequate education and training on mental health in relation to disaster during their formal education. Nurses in this study expressed their concern about their limited ability to access and engage in training on post-disaster mental health.

The original contribution of this study to the body of knowledge is that within the disaster management cycle framework, the early identification of post-disaster emotional responses needs to be highlighted. This must take into consideration the relevant cultural and religious contexts of different countries. Increasing the

community members' and leaders' (political, health and religious) awareness of post-disaster emotional responses may influence a proactive approach to implementing community information and education programs that encourage people to access healthcare practitioners much earlier. The provision of education and training for both community members and nurses (or other health professionals and responders) is essential to achieve mental health preparedness and to negate some of the negative stigma attached to people with problematic mental health. Overall, individuals' mental wellbeing within a devastated community, after a disaster, is the responsibility of all members of that community including those who care for their physical and spiritual wellbeing (health professionals, educators, leaders, and disaster responders).

This study contributes to the classic disaster management cycle framework (Birnbaum et al. 2015) as shown in the next figure.



Note: The figure represents the importance of early identification of mental health (MH) issues after a disaster event. In the response phase, community and religious/political leaders support are important so that community members who had been identified seek help at mental health services. In the recovery and mitigation phases, mental health education and training for nurses and community engagement with mental health information are required in order to increase the awareness and knowledge of mental health related to disaster, and to become prepared for future events.

Figure 1: The contribution of current study findings to the classic disaster management cycle in the Indonesian context.

6.3 Limitations

There are a number of limitations in relation to this study.

First, this study involved a small number of nurses in the focus groups, due to the limited availability of nurses' time. Although they might not represent nurses' views on the topic under study, the focus groups provided rich data and insights on the nurses' awareness and knowledge of post-disaster emotional responses. Future studies in Indonesia might consider involving more nurses and/or other healthcare providers.

Second, the use of convenience sampling technique to recruit the adult community member participants might have caused sampling biases. The adult community member participants in this study might not represent the whole community in Bantul and Sleman districts. However, the student researcher has ensured that the data provided by the participants were saturated and rich, in order to answer the research questions. The student researcher has also balanced the number of male and female participants in this study. Quantitative studies with stratified random sampling might be beneficial for future studies.

Third, the literature has suggested that data analysis should be conducted in the original language. However, data in the current study were translated into English before the analysis undertaken. Therefore, efforts have been made to ensure that the English translation was accurate (as explained in Chapter 3, page 61), and the analysis was conducted with credibility. In addition, due to the limited time, reverse translation into the original language (Indonesian) could not be conducted. In future studies, the translation process should be considered when data is collected in a language other than English.

Lastly, due to the nature of qualitative study, the results of this study cannot be generalized to other contexts, cultures or kinds of disasters. However, the conclusions of this study might be transferrable to studies that are conducted in similar contexts and cultures as Indonesia, particularly Yogyakarta (i.e. developing countries; populations with low to middle levels of education, universities with a developing nursing education system, and where the majority of people are Muslim).

Despite all of the limitations, this study is the first to investigate the awareness and knowledge of post-disaster emotional responses in adult community members and nurses, especially in Yogyakarta, Indonesia. This study has provided understanding around the issues under investigation, based on rich narrative data provided by the community members and nurses who lived in an area prone to earthquakes and volcanic eruption.

6.4 Recommendations for Future Research

- Given that the community in this study used religion frequently as a positive coping mechanism in difficult times, future studies on the significance of religion and religiosity in the aftermath of disaster in Yogyakarta and in Indonesia are required.
- Participants in the current study emphasized the importance of staying connected with their local community; hence, future research on the impact of evacuation on mental health will be beneficial for the community.
- Given that nurses who participated in this study were those who graduated before disaster management was included in the nursing curriculum, future studies with nurses who have studied with the new curriculum implemented would provide insights on how the curriculum has developed nurses' knowledge on mental health related to disaster.
- Research on awareness and knowledge of mental health, especially in relation to disaster to be conducted with other healthcare providers, such as doctors, psychologists, and midwives.

6.5 Recommendations for Change

- Early identification of post-disaster emotional responses is important for the community, to increase access to health services. It is crucial for healthcare providers to be aware of and have knowledge of post-disaster emotional reactions, so that they can perform early detection of survivors' mental health issues. Early identification of mental health problems should be one of the activities in a disaster response and relief program.
- The findings of this study showed the important role of community as a medium for the survivors to use to cope during hard times. It is possible that community-based programs would be more effective in increasing resilience than individual-based approaches. This study suggests that community should be involved in programs to increase resilience.
- Where religion is a big part of the community culture, policy makers should acknowledge the value of the community engaging in religious activities in the aftermath of disasters. Any programs that are delivered to the community should consider their beliefs and values in order to be successful. In addition, religious activities in the community should be encouraged to help people cope in the aftermath of disaster.
- This study showed that the community respected religious leaders and teachers, as well as their community leaders. They should be involved in disaster preparedness, relief and recovery programs, because community members trust them. For instance, they should be the one to approach before a program is delivered to the community.

- Future training and education are important for both community members and nurses to increase their preparedness for future disaster events. Training and education on mental health related to disaster should be delivered to community members during the mitigation stage, because in this stage community members are more receptive than in the response or recovery phase where they focus on repairing and rebuilding activities. In addition to their formal education, all nurses should have the same opportunity to access training in mental health in the aftermath of disaster, because they are front liners in disaster response.

6.6 Reflection on the Research Methodology and Methods

Conducting research within a qualitative paradigm was new to the student researcher, as the student researcher was only familiar with quantitative research. Hence, it was quite a struggle to shift from a quantitative to qualitative paradigm for the first time. It was both a challenging and an enriching experience, from the early stages of the research process until the final thesis. At the early stage of the study, the student researcher learned how to focus the research problem and to generate the research questions. The student researcher has learned to distinguish between methodologies in qualitative research, and decided which methodology was best used to answer the research questions. Descriptive exploratory was chosen, because the investigated issue has not been studied before. This methodology provided the opportunity to explore and describe the studied phenomenon.

Before the data collection, the student researcher, with assistance from the principal supervisor, had an experience in applying for ethics approval from the Human

Research Ethics Committee, the University of Adelaide. In this process, the student researcher learned how to create a participant information sheet, informed consent, interview and focus group protocol, recruitment protocol and flyer; and more importantly, learned how to maintain ethical aspects of the study, including what steps would be taken if adverse event occurred during the interviews or focus groups.

The next challenging experience for the student researcher was the data collection. This process has allowed the student researcher to learn and deal with some challenges. First, different bureaucracy and procedures at the hospitals and public health centres. This required the ethics application to be amended for the purpose of the different recruitment requirements. Secondly, approaching and talking to potential participants was difficult at first. The student researcher needed to improve self-confidence and be ready to accept that some potential participants may refuse to be interviewed and that is part of the process. Recruiting nurses at hospitals and public health centres was also challenging because they have limited time to be involved in focus groups. Thirdly, geographical locations and weather were challenging at the time of data collection. The two districts involved in this study were large; the furthest location for data collection was around 26 km from the researcher's residence. At the time of data collection was the rainy season; some areas were flooded causing broken roads and bridges. Albeit all the challenges encountered, the data collection phase has given the student researcher an opportunity to be resilient and to improve the student researcher's skills in conducting interviews and focus groups.

The data analysis was a long process in this qualitative study. It started with data transcription and translations. At first, the student researcher believed the transcription process would be easy and fast, however, it took more time than expected. This process, however, allowed the student researcher to become more familiar with and immerse in the data provided. The translation process needed to be undertaken carefully, involving numerous discussions with the translator and the bilingual person. The student researcher ensured that there was no missing valuable data during the translation into English.

As the journey is nearly accomplished, the whole process of the higher degree research has given the student researcher a chance to learn qualitative research in-depth and become more confident in conducting qualitative study in the future. Following the submission of this thesis, the student researcher would like to make the study available by publishing it in a peer-reviewed journal. In addition to this, the student researcher would like to translate this thesis into a small book in the Indonesian language, and make it available at libraries, public health centres and hospitals in Yogyakarta, so community members could gain benefit from it.

6.7 Final Summary

This study provides all parties involved in disaster response and relief program (responders, policy makers, healthcare providers), including the community affected, with an understanding of adult community members' and nurses' awareness and knowledge of post-disaster emotional responses. Since Yogyakarta will experience disasters in the future, it is important for community members to be aware of the potential emotional responses after a disaster, and to have knowledge

as to when and where to seek information and help. It is also important for nurses, as a healthcare provider, to have awareness and knowledge of post-disaster emotional responses, so that they can provide appropriate care for the community affected by the disaster. Future studies and change of practices around mental health in the aftermath of disaster are needed to achieve mental health preparedness.

APPENDICES

Appendix 1 ICN Framework of Disaster Nursing Competencies (ICN 2019), version 2

Domain	Competencies
1. Preparation and Planning	a. Maintains a general personal, family and professional preparedness plan b. Participates with other disciplines in drills/exercises in the workplace c. Maintains up-to-date knowledge of available emergency resources, plans, policies and procedures d. Describes approaches to accommodate vulnerable populations during an emergency or disaster response
2. Communication	a. Uses disaster terminology correctly in communication with all responders and receivers b. Communicates disaster-related priority information promptly to designated individuals c. Demonstrates basic crisis communication skills during emergency/disaster events d. Uses available multi-lingual resources 8 to e. provide clear communication with disaster effected populations f. Adapts documentation of essential assessment and intervention information to the resources and scale of emergency
3. Incident Management	a. Describes the national structure for response to an emergency or disaster b. Uses the specific disaster plan including chain of command for his/her place of education or employment in an event, exercise or drill c. Contributes observations and experiences to post-event evaluation d. Maintains professional practice within licensed scope of practice when assigned to an inter-professional team or an unfamiliar location
4. Safety and Security	a. Maintains safety for self and others throughout disaster/emergency event in both usual or austere environment(s) b. Adapts basic infection control practices to the available resources c. Applies regular assessment of self and colleagues during disaster event to identify need for physical or psychological support

	d. Uses PPE 9 as directed through the chain of command in a disaster/emergency event e. Reports possible risks to personal or others' safety and security
5. Assessment	a. Reports symptoms or events that might indicate the onset of an emergency in assigned patients/families/communities b. Performs rapid physical and mental health assessment of each assigned patient/family/community based on principles of triage and type of emergency/disaster event c. Maintains ongoing assessment of assigned patient/family/community for needed changes in care in response to the evolving disaster event
6. Intervention	a. Implements basic first aid as needed by individuals in immediate vicinity b. Isolates individuals/families/clusters at risk of spreading communicable condition(s) to others c. Participates in contamination assessment or decontamination of individuals when directed through the chain of command d. Engages patients, their family members or assigned volunteers, within their abilities, to extend resources during events e. Provides patient care based on priority needs and available resources f. Participates in surge capacity activities as assigned (e.g. mass immunisation) g. Adheres to protocol for management of large numbers of deceased in respectful manner
7. Recovery	a. Assists an organisation to maintain or resume functioning during and post event b. Assists assign patients/families/communities to maintain or resume functioning during and post event c. Makes referrals for ongoing physical and d. mental health needs as patients are discharged from care e. Participates in transition de-briefing to identify personal needs for ongoing assistance
8. Law and Ethics	a. Practices within the applicable nursing and emergency-specific laws, policies and procedures b. Applies institutional or national disaster ethical framework in care of individuals/families/communities

	c. Demonstrates understanding of ethical practice during disaster response that is based on utilitarian principles

Appendix 2 University of Adelaide Human Research Ethics Committee (HREC) Approval

RESEARCH SERVICES
OFFICE OF RESEARCH ETHICS, COMPLIANCE AND INTEGRITY

SABINE SCHREIBER
SECRETARY
HUMAN RESEARCH ETHICS COMMITTEE
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email: hrec@adelaide.edu.au
CRICOS Provider Number 00123M

24 April 2017

Associate Professor L Cusack
Adelaide Nursing School

Dear Associate Professor Cusack

ETHICS APPROVAL No: H-2017-059
The awareness and knowledge of posttraumatic emotional responses related to disaster among adult community and nurses in Yogyakarta, Indonesia

The ethics application for the above project has been reviewed by the Human Research Ethics Committee and is deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research (2007)*.

The ethics expiry date for this project is: 30 April 2020

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/research-services/oreci/human/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

Professor Paul Delfabbro
Convenor
Human Research Ethics Committee

RESEARCH SERVICES
OFFICE OF RESEARCH ETHICS, COMPLIANCE AND INTEGRITY

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SECRETARY
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CRICOS Provider Number 00123M

Applicant: Associate Professor L Cusack

School: Adelaide Nursing School

Project Title: ***The awareness and knowledge of posttraumatic emotional responses related to disaster among adult community and nurses in Yogyakarta, Indonesia***

THE UNIVERSITY OF ADELAIDE HUMAN RESEARCH ETHICS COMMITTEE

Project No: **H-2017-059** RM No: 0000022236

APPROVED for the period until: **30 April 2020**

Thank you for the detailed response and amended ethics application dated 20.4.2017. It is noted that this study will be conducted by Dewi Retno Pamungkas, PhD candidate.

Refer also to the accompanying letter setting out requirements applying to approval.

Professor Paul Delfabbro
Convenor
Human Research Ethics Committee

Date: 24 April 2017

Appendix 3 Permission from Regional Development Planning Boards in Bantul district

PEMERINTAH KABUPATEN BANTUL
BADAN PERENCANAAN PEMBANGUNAN DAERAH
(B A P P E D A)
Jln.Robert Wolter Monginsidi No. 1 Bantul 55711, Telp. 367533, Fax. (0274) 367796
Website: bappeda.bantulkab.go.id Webmail: bappeda@bantulkab.go.id

SURAT KETERANGAN/IZIN
Nomor : 070 / Reg / 0336 / S3 / 2017

Menunjuk Surat : Dari : STIKES Jend Achmad Yani Yogyakarta — Nomor : B/300/STIKES/I/2017
Tanggal : 24 Januari 2017 — Perihal : **IZIN PENELITIAN**

Mengingat :
a. Peraturan Daerah Nomor 17 Tahun 2007 tentang Pembentukan Oganisasi Lembaga Teknis Daerah Di Lingkungan Pemerintah Kabupaten Bantu sebagaimana telah diubah dengan Peraturan Daerah Kabupaten Bantul Nomor 16 Tahun 2009 tentang Perubahan Atas Peraturan Daerah Nomor 17 Tahun 2007 tentang Pembentukan Oganisasi Lembaga Teknis Daerah Di Lingkungan Pemerintah Kabupaten Bantul;
b. Peraturan Gubernur Daerah Istimewa Yogyakarta Nomor 18 Tahun 2009 tentang Pedoman Pelayanan Perijinan, Rekomendasi Pelaksanaan Survei, Penelitian, Pengembangan, Pengkajian, dan Studi Lapangan di Daerah Istimewa Yogyakarta;
c. Peraturan Bupati Bantul Nomor 17 Tahun 2011 tentang Ijin Kuliah Kerja Nyata (KKN) dan Praktek Lapangan (PL) Perguruan Tinggi di Kabupaten Bantul.

Diizinkan kepada

Nama	: **DEWI RETNO PAMUNGKAS**
P. T / Alamat	: **STIKES Jend Achmad Yani Yogyakarta** **Jl. Ring Road Barat Gamping Sleman**
NIP/NIM/No. KTP	: **3403126404840002**
Nomor Telp./HP	: **+61411963832**
Tema/Judul Kegiatan	: **TINGKAT KESADARAN DAN PENGETAHUAN KOMUNITAS DAN PERAWAT TENTANG RESPONS EMOSIONAL PASCA BENCANA DI KABUPATEN BANTUL DAN SLEMAN YOGYAKARTA**
Lokasi	: RSUD Panembahan Senopati, RSU PKU Muhammadiyah Bantul, Puskesmas Srandakan, Puskesman Pundong, Puskesmas Pandak I, Puskesmas Sewon I, Puskesmas Jetis I, Puskesmas Kasihan I, Puskesmas Pajangan, Puskesmas Sedayu I
Waktu	: **24 Januari 2017 s/d 24 April 2017**

Dengan ketentuan sebagai berikut :

1. Dalam melaksanakan kegiatan tersebut harus selalu berkoordinasi (menyampaikan maksud dan tujuan) dengan institusi Pemerintah Desa setempat serta dinas atau instansi terkait untuk mendapatkan petunjuk seperlunya;
2. Wajib menjaga ketertiban dan mematuhi peraturan perundangan yang berlaku;
3. Izin hanya digunakan untuk kegiatan sesuai izin yang diberikan;
4. Pemegang izin wajib melaporkan pelaksanaan kegiatan bentuk *softcopy* (CD) dan *hardcopy* kepada Pemerintah Kabupaten Bantul c.q Bappeda Kabupaten Bantul setelah selesai melaksanakan kegiatan;
5. Izin dapat dibatalkan sewaktu-waktu apabila tidak memenuhi ketentuan tersebut di atas;
6. Memenuhi ketentuan, etika dan norma yang berlaku di lokasi kegiatan; dan
7. Izin ini tidak boleh disalahgunakan untuk tujuan tertentu yang dapat mengganggu ketertiban umum dan kestabilan pemerintah.

Dikeluarkan di : B a n t u l
Pada tanggal : 24 Januari 2017

A.n. Kepala,
Kepala Bidang Pengendalian
Penelitian dan Pengembangan u b
Kasubbid Analisa Data dan Laporan

Ir. EDI PURWANTO, M.Eng.
NIP: 19640710 199703 1 004

Tembusan disampaikan kepada Yth.
1. Bupati Bantul (sebagai laporan)
2. Ka. Kantor Kesatuan Bangsa dan Politik Kab. Bantul
3. Ka. Dinas Kesehatan Kab. Bantul
4. Dir. RSUD Panembahan Senopati Bantul
5. Dir. RS PKU Muhammadiyah Bantul
6. Ka. Puskesmas Srandakan
7. Ka. Puskesmas Pundong
8. Ka. Puskesmas Pandak 1

PEMERINTAH KABUPATEN BANTUL
BADAN PERENCANAAN PEMBANGUNAN DAERAH
(B A P P E D A)
Jln.Robert Wolter Monginsidi No. 1 Bantul 55711, Telp. 367533, Fax. (0274) 367796
Website: bappeda.bantulkab.go.id Webmail: bappeda@bantulkab.go.id

Lampiran Nomor Izin : 070 / Reg / 0336 / S3 / 2017

9. Ka. Puskesmas Sewon 1
10. Ka. Puskesmas Jetis 1
11. Ka. Puskesmas Kasihan 1
12. Ka. Puskesmas Pajangan
13. Ka. Puskesmas Sedayu 1
14. Ka. PPPM Stikes Jend Achmad Yani Yogyakarta
15. Yang Bersangkutan (Pemohon)

Appendix 4 Permission from Regional Development Planning Boards in Bantul Sleman district

PEMERINTAH KABUPATEN SLEMAN
BADAN PERENCANAAN PEMBANGUNAN DAERAH
Jalan Parasamya Nomor 1 Beran, Tridadi, Sleman, Yogyakarta 55511
Telepon (0274) 868800, Faksimilie (0274) 868800
Website: www.bappeda.slemankab.go.id, E-mail : bappeda@slemankab.go.id

SURAT IZIN
Nomor : 070 / Bappeda / 487 / 2017

TENTANG
PENELITIAN
KEPALA BADAN PERENCANAAN PEMBANGUNAN DAERAH

Dasar : Peraturan Bupati Sleman Nomor : 45 Tahun 2013 Tentang Izin Penelitian, Izin Kuliah Kerja Nyata, Dan Izin Praktik Kerja Lapangan.
Menunjuk : Surat dari Kepala Badan Kesatuan Bangsa dan Politik Kab. Sleman
Nomor : 070/Kesbangpol/473/2017 Tanggal : 07 Februari 2017
Hal : Rekomendasi Penelitian

MENGIZINKAN :

Kepada :
Nama : DEWI RETNO PAMUNGKAS, S.Kep., NS., MNg
No.Mhs/NIM/NIP/NIK : 1709547
Program/Tingkat : S3
Instansi/Perguruan Tinggi : University Of Adelaide
Alamat instansi/Perguruan Tinggi : Nort Terace Adelaide South Australia
Alamat Rumah : Langensari Ungaran Barat Semarang Jateng
No. Telp / HP : 61411963832
Untuk : Mengadakan Penelitian / Pra Survey / Uji Validitas / PKL dengan judul **TINGKAT KESADARAN DAN PENGETAHUAN KOMUNITAS DAN PERAWAT TENTANG RESPONS EMOSIONAL PASCA BENCANA DI KABUPATEN BANTUL DAN SLEMAN YOGYAKARTA**
Lokasi : RSUD Sleman, RS JIH dan Puskesmas di Kab. Sleman
Waktu : Selama 3 Bulan mulai tanggal 07 Februari 2017 s/d 09 Mei 2017

Dengan ketentuan sebagai berikut :

1. Wajib melaporkan diri kepada Pejabat Pemerintah setempat (Camat/ Kepala Desa) atau Kepala Instansi untuk mendapat petunjuk seperlunya.
2. Wajib menjaga tata tertib dan mentaati ketentuan-ketentuan setempat yang berlaku.
3. Izin tidak disalahgunakan untuk kepentingan-kepentingan di luar yang direkomendasikan.
4. Wajib menyampaikan laporan hasil penelitian berupa 1 (satu) CD format PDF kepada Bupati diserahkan melalui Kepala Badan Perencanaan Pembangunan Daerah.
5. Izin ini dapat dibatalkan sewaktu-waktu apabila tidak dipenuhi ketentuan-ketentuan di atas.

Demikian izin ini dikeluarkan untuk digunakan sebagaimana mestinya, diharapkan pejabat pemerintah/non pemerintah setempat memberikan bantuan seperlunya.
Setelah selesai pelaksanaan penelitian Saudara wajib menyampaikan laporan kepada kami 1 (satu) bulan setelah berakhirnya penelitian.

Dikeluarkan di Sleman
Pada Tanggal : 7 Februari 2017
a.n. Kepala Badan Perencanaan Pembangunan Daerah
Sekretaris
u.b.
Kepala Bidang Penelitian, Pengembangan dan Pengendalian

Ir. RATNANI HIDAYATI, MT
Pembina, IV/a
NIP 19660828 199303 2 012

Tembusan :
1. Bupati Sleman (sebagai laporan)
2. Kepala Dinas Kesehatan Kab. Sleman
3. Kabid. Kesejahteraan Rakyat & Pemerintahan Bappeda
4. Camat di Kab. Sleman
5. Direktur RSUD Sleman
6. Direktur RS JIH
7. Kepala UPT Puskesmas di Kab. Sleman
8. Ke-PPPM Stikes Jenderal A. Yani Yk
9. Yang Bersangkutan

Appendix 5 Stikes Jenderal Achmad Yani HREC Approval

SEKOLAH TINGGI ILMU KESEHATAN
JENDERAL ACHMAD YANI YOGYAKARTA
KOMISI ETIK PENELITIAN KESEHATAN (KEPK)

Jl. Ringroad Barat, Ambarketawang, Gamping, Sleman, Yogyakarta 55294, Telp. (0274) 4342000, Fax. (0274) 4342542,
Email : Info@stikesayaniyk.ac.id - Website : www.stikesayaniyk.ac.id

KETERANGAN PERSETUJUAN ETIK PENELITIAN
Nomor: SKep/301/STIKES/IX/2017

Komisi Etik Penelitian Kesehatan Stikes Jenderal Achmad Yani Yogyakarta telah melakukan pengkajian terhadap prinsip etik yang dilandasi studi kepustakaan dalam upaya melindungi subjek penelitian kesehatan. Usulan penelitian telah disetujui dan dinyatakan layak etik dengan judul:

"TINGKAT KESADARAN DAN PENGETAHUAN KOMUNITAS DAN PERAWAT TENTANG RESPON EMOSIONAL PASKA BENCANA DI KABUPATEN BANTUL DAN SLEMAN YOGYAKARTA"

Nama Peneliti	:	DEWI RETNO PAMUNGKAS
NIDN Peneliti	:	0524048402
Asal Institusi	:	Stikes Jenderal Achmad Yani Yogyakarta

Yogyakarta, 9/11/2017

Ketua	Sekretaris
Prof. Purnomo Suryantoro, dr., Sp. A (K), Ph.D	Deby Zulkarnain Rahadian Syah, MMR
NPP.20101391	NPP.201413167

STIKES JENDERAL ACHMAD YANI YOGYAKARTA KOMISI ETIK PENELITIAN KESEHATAN

Appendix 6 Permission from Hospital 1

PEMERINTAH KABUPATEN BANTUL
RSUD PANEMBAHAN SENOPATI
Jl. Dr. WAHIDIN SUDIRO HUSODO BANTUL 55714
Telp. (0274) 367381, 367386 Fax. (0274) 367506.
Website : http://rsudps.bantulkab.go.id
E-Mail: rsudps@bantulkab.go.id

SURAT KETERANGAN / IZIN PENELITIAN
Nomor : 070/

Berdasarkan surat dari BAPPEDA Bantul Nomor : 070/Reg/0336/S3/2017 tanggal 20 Juli 2017, Perihal : **Permohonan Ijin Penelitian**

Diizinkan kepada :

Nama	:	**DEWI RETNO PAMUNGKAS**
NIM	:	0524048402
Program Studi	:	S3 The Univesity of Adelaide
Waktu	:	28 September s/d 28 Desember 2017
Judul	:	***Tingkat Kesadaran dan Pengetahuan Komunitas dan Perawat tentang Respons Emosional Pasca Bencana di Kabupaten Bantul dan Sleman Yogyakarta***

Dengan Ketentuan :

1. Wajib menjaga tata tertib dan mentaati ketentuan-ketentuan yang berlaku,
2. **Wajib memberikan laporan hasil penelitian** berupa **Hard Copy** dan **Soft Copy (CD)** kepada Direktur c/q Kepala Sub Bagian Diklit RSUD Panembahan Senopati Bantul,
3. Surat izin ini hanya diperlukan untuk kegiatan ilmiah,
4. Surat izin ini dapat dibatalkan sewaktu-waktu apabila tidak dipenuhi ketentuan-ketentuan tersebut di atas.

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

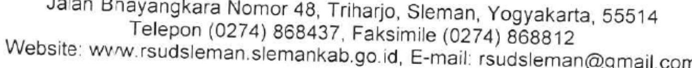
Bantul, 28 September 2017

dr. Gandung Bambang Hermanto

Tembusan disampaikan kepada Yth.:
1. ....
2. Ybs

Appendix 7 Permission from Hospital 2

PEMERINTAH KABUPATEN SLEMAN



RUMAH SAKIT UMUM DAERAH SLEMAN

Jalan Bhayangkara Nomor 48, Triharjo, Sleman, Yogyakarta, 55514
Telepon (0274) 868437, Faksimile (0274) 868812
Website: www.rsudsleman.slemankab.go.id, E-mail: rsudsleman@gmail.com

Sleman, 30 Oktober 2017

No : 070/ 2914
Sifat : Penting
Lampiran : 1 (satu) lembar
Hal : Ijin penelitian

Kepada .
Yth. Sdr. Dewi Retno Pamungkas
NIK : 0524048402
Stikes Jenderal Achmad Yani Yogyakarta
Di
Yogyakarta

Memperhatikan surat ijin Kepala Bappeda Kabupaten Sleman nomor : 070/Bappeda/2912/2017 tertanggal 24 Juli 2017, perihal Ijin Penelitian pada dasarnya kami tidak keberatan memberikan ijin kepada Saudara untuk melakukan penelitian di RSUD Sleman selama 3 (tiga) bulan, dengan judul penelitian **"Tingkat kesadaran dan pengertahuan komunitas dan perawat tntang respon emosional pasca bencana di Kabupaten Bantul dan Sleman Yogyakarta".**

Sebelum kegiatan dilaksanakan, menyelesaikan administrasi di Unit Diklat, mentaati ketentuan diklat yang berlaku, dan bersedia menyerahkan laporan hasil penelitian yang dilakukan ke RSUD Sleman.

Demikian untuk diketahui dan terima kasih.

an. Direktur Rumah Sakit Umum
Daerah Sleman
Wakil Direktur

dr. V. IDA WIDAYATI, M.Kes
Pembina Tingkat I, IV/b
NIP 19600324 198710 2 003

Tembusan :
1. Ka Instalasi Gawat Darurat
2. Ka Ruang Alamanda I
3. Ka Ruang Alamanda II
4. Ka Ruang Alamanda III
5. Ka Ruang Kenanga
6. Koord. Diklat Paramedik Perawatan

Appendix 8 Participant information sheet for adult community members

PARTICIPANT INFORMATION SHEET
(Adult Community Members)

PROJECT TITLE: Awareness about your feelings after disaster events
HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: H-2017-059
PRINCIPAL INVESTIGATOR: Dr. Lynette Cusack
STUDENT RESEARCHER: Dewi Retno Pamungkas
STUDENT'S DEGREE: PhD

Dear Participant,

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

What is the project about?This study will explore the emotional responses that might be experienced after a disaster event. The aim of this study is to understand how people understand disaster and its effect on individuals' life. By understanding people's awareness of the emotional responses to disasters, it is hoped that a program will be developed to address problems that might occur.

Who is undertaking the project?
This project is being conducted by Dewi Retno Pamungkas.
This research will form the basis for the degree of PhD at the University of Adelaide, in South Australia under the supervision of Dr. Lynette Cusack, Dr. Rebecca Feo and Prof. Kristine Gebbie.
This research is sponsored by the Indonesia Endowment Fund for Education, Ministry of Finance, Indonesia.

Why am I being invited to participate?
You are being asked to participate because you are a part of a community that live with danger of natural disaster.

What will I be asked to do?
This study will involve you having a conversation about your views with the researcher. The conversation will be no longer than 1.5 hours, and will be audio recorded. The conversation will take place in the public health centre's discussion room.

How much time will the project take?
The interview will be 1-1.5 hours. You will be reimbursed for your time and transportation (IDR. 50,000 or around AUD$ 5).

Are there any risks associated with participating in this project?
The interview might lead you to relive memories of disasters you have encountered. This might cause emotional distress. If you become distressed or uncomfortable, the interview can be paused or stopped. You may cancel the interview, or reschedule for another time. If the emotional distress continues after the interview, the researcher will provide referral information, so you can seek help if you wish.

What are the benefits of the research project?
This study may help the community to be better prepared to help each other after a disaster.

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, up to the data analysis.

What will happen to my information?
All recorded conversations will be transcribed into word documents, and will be saved digitally on the researcher's laptop computer and the University's hard drive. The digital data will be saved for at least 12 months, and can only be accessed by the researcher and supervisors. Your personal data will be confidential, and you cannot be identified in any publications or in the written report (e.g., thesis).

Who do I contact if I have questions about the project?
If you have questions about this study you can contact:
Dr Lynette Cusack
Adelaide Nursing School, University of Adelaide
Email: lynette.cusack@adelaide.edu.au
Telephone: +61 (8) 8313 3593

Dr Rebecca Feo
Adelaide Nursing School, University of Adelaide
Email: rebecca.feo@adelaide.edu.au
Telephone: +61 (8) 8313 2993

Prof Kristine Gebbie
School of Nursing and Midwifery, Flinders University
Email: kristinegebbie@gmail.com

Dewi Retno Pamungkas
Adelaide Nursing School, University of Adelaide
Email: dewi.pamungkas@adelaide.edu.au
Telephone: +61 411 963 832

Fajriyati Nur Azizah
Stikes A.Yani Yogyakarta
Email: fajriyatinurazizah@gmail.com
Telephone: +62 853 2800 1996

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-2017-059). 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. If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving

human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:
Phone: +61 8 8313 6028

Email: hrec@adelaide.edu.au

Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

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?
If you are interested in participating in this study, you need to sign the informed consent, and schedule a time for interview. At the approved time, you will need to come to this public health centre.

Yours sincerely,
Dr Lynette Cusack
Dr Rebecca Feo
Prof Kristine Gebbie
Dewi Retno Pamungkas

Appendix 9 Participant information sheet for nurses

PARTICIPANT INFORMATION SHEET
(Nurses)

PROJECT TITLE: The Awareness and Knowledge about Emotional Responses after Disaster Events Among the Adult Community and Nurses in Yogyakarta, Indonesia
HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER: H-2017-059
PRINCIPAL INVESTIGATOR: Dr. Lynette Cusack
STUDENT RESEARCHER: Dewi Retno Pamungkas
STUDENT'S DEGREE: PhD

Dear Colleague,

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

What is the project about?
This study will explore the emotional responses that might be experienced after a disaster event. The aim of this study is to understand how nurses understand disaster and its effect on individuals' lives. By understanding nurses' awareness on the emotional responses to disasters, it is hoped that a program will be developed to address problems that might occur.

Who is undertaking the project?
This project is being conducted by Dewi Retno Pamungkas.
This research will form the basis for the degree of PhD at the University of Adelaide, in South Australia under the supervision of Dr. Lynette Cusack, Dr. Rebecca Feo and Prof. Kristine Gebbie.
This research is sponsored by the Indonesia Endowment Fund for Education, Ministry of Finance, Indonesia.

Why am I being invited to participate?
To participate in this study, you must meet these criteria:
- hold a diploma of nursing or bachelor of nursing
- work as a primary nurse or associate nurse
- been working for at least 5 years as a nurse
- work at a public health centre or hospital
- have not met or known the researcher prior to this study

This study will only involve nurses at non-managerial levels. Managers of nurses or heads of nursing departments will be excluded from this study.

What will I be asked to do?
This study requires participation in a focus group discussion. The conversation will be no longer than 2 hours, and will be audio recorded. The conversation will take place in the hospital's/Public Health Centre's discussion room.

How much time will the project take?
The focus group will be conducted for 2 hours. If you decide to take part, you will be reimbursed for your time and transportation (IDR. 50,000 or around AUD$ 5).

Are there any risks associated with participating in this project?
The discussion might lead you to relive memories of disasters that you have encountered. This might cause emotional distress to you. If you become distressed or uncomfortable, the discussion can be paused or stopped. You may leave the discussion, or reschedule for another time with another group. If you choose to leave the discussion at any time there will be no negative influence on your nursing position. If your emotional distress continues after the interview, the researcher provides referral information, so you can seek help if you wish.

What are the benefits of the research project?
The study will explore your awareness of adult community members' emotional responses to a disaster. This awareness is important for the community to bounce back more quickly, and for nurses to be able to identify and implement strategies to respond effectively to emotional responses following disaster in order to support their community.

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, up to the data analysis.

What will happen to my information?
All the recorded conversations will be transcribed into word documents, and saved digitally in researchers' laptop computer and the University's hard drive. The digital data will be saved for at least 12 months, and can only be accessed by the researcher and supervisors. Your personal data will be confidential, and you cannot be identified in any publications or written reports (e.g., thesis).

Who do I contact if I have questions about the project?
If you have questions about this study you can contact:
Dr Lynette Cusack
Adelaide Nursing School, University of Adelaide
Email: lynette.cusack@adelaide.edu.au
Telephone: +61 (8) 8313 3593

Dr Rebecca Feo
Adelaide Nursing School, University of Adelaide
Email: rebecca.feo@adelaide.edu.au
Telephone: +61 (8) 8313 2993

Prof Kristine Gebbie
School of Nursing and Midwifery, Flinders University
Email: kristinegebbie@gmail.com

Dewi Retno Pamungkas
Adelaide Nursing School, University of Adelaide

Email: dewiretno.ps@gmail.com
Telephone: +61 411 963 832

Fajriyati Nur Azizah
Stikes A.Yani Yogyakarta
Email: fajriyatinurazizah@gmail.com
Telephone: +62 853 2800 1996

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-2017-059). 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. If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:

Phone: +61 8 8313 6028

Email: hrec@adelaide.edu.au

Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

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?
If you are interested in participating in this study, you need to sign the informed consent, and schedule a time for the focus group. You will need to come to this hospital's discussion room for your focus group.

Yours sincerely,
Dr Lynette Cusack
Dr Rebecca Feo
Prof Kristine Gebbie
Dewi Retno Pamungkas

Appendix 10 Consent form for adult community members

CONSENT FORM

(Adult Participants)

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

Title:	The Awareness and Knowledge of Posttraumatic Emotional Responses Related to Disaster Among the Adult Community and Nurses in Yogyakarta, Indonesia
Ethics Approval Number:	H-2017-059

2. I have had the project, so far as it affects me, fully explained to my satisfaction by the researcher. My consent is given freely.
3. I have been given the opportunity to have a member of my family or a friend present while the project was explained to me.
4. Although I understand the purpose of the research project it has also been explained that my involvement may not be of any benefit to me.
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, before the data analysis is conducted.
7. I agree to the interview being audio recorded.
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 11 Consent form for adult community nurses

CONSENT FORM

(Nurse)

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

Title:	The Awareness and Knowledge of Posttraumatic Emotional Responses Related to Disaster Among the Adult Community and Nurses in Yogyakarta,
Ethics Approval Number:	H-2017-059

2. I have had the project, so far as it affects me, fully explained to my satisfaction by the research. My consent is given freely.
3. I have been given the opportunity to have a member of my family or a friend present while the project was explained to me.
4. Although I understand that the purpose of this research project, it has also been explained that my involvement may not be of any benefit to me.
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 before the data analysis, and that this will not affect my employment status in the health care centre/hospital, now or in the future.
7. I agree to the focus group being audio recorded.
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 12 Adverse Events Procedure

ADVERSE EVENTS PROCEDURE

Research: The Awareness and Knowledge of Posttraumatic Emotional Responses Related to Disaster Among the Adult Community and Nurses in Yogyakarta, Indonesia

Researcher: Dewi Retno Pamungkas

During the interviews or focus groups, it might be possible for participants to get upset or become uncomfortable discussing disaster experiences or emotional responses. In these situations, the following steps will be taken:

1. The researcher must be aware of the participants' emotional changes during the interviews or focus group
2. When a participant is upset or uncomfortable, the researcher will pause the interview or focus group to ask the participant if she/he wishes to continue or stop.
3. In the interview, where the researcher is not accompanied by a research assistant:
   - ✓ The researcher will offer the participant to pause or stop the interview, and offer the participant water and/or tissues
   - ✓ If the participant decides to stop the interview, she/he will be asked whether she/he is willing to continue the interview at a different time
   - ✓ The researcher will provide a list of contacts to the participant if she/he wants to arrange follow-up with a professional (psychiatrist or psychologist) regarding her/his emotional reaction.
4. In the focus group, a research assistant is available to help:
   - ✓ The researcher will ask a participant who becomes upset to pause and ask if she/he wishes to leave the group or continue
   - ✓ The research assistant will escort the participant from the focus group
   - ✓ The research assistant will provide the participant with a drink of water and/or tissues
   - ✓ The researcher assistant will remain with the individual until she/he is ready to re-join the group, or to leave, and will provide a list of contacts for the

participant if she/he wants arrange follow-up with a professional (psychiatrist or psychologist) regarding her/his emotional response.

- ✓ If a person who experienced an emotional response chose to stay with the group, at the end of the focus group the list of contacts for follow-up will be provided.

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