The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial

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Thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Nursing) School of Nursing and Midwifery The University of Newcastle

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STATEMENT OF ORIGINALITY

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968.

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Date.....

DEDICATION

I dedicate this thesis and degree to my beloved parents – Perm Wongyai and Sangnin Wongyai (เพิ่ม วงศ์ใหญ่ และ แสงนิล วงศ์ใหญ่).

Their unconditional love and endless loving-kindness gave me strength and encouragement to complete the journey.

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ABSTRACT

It is well recognised that nursing students may experience high levels of stress over the course of their university studies, leading to depression, lowered self-esteem and decreased academic performance. There is evidence in the professional literature that participation in a mindfulness-based stress reduction (MBSR) program can decrease stress and depression and increase mindfulness in university student populations including nursing students. However, to date evaluations of the effectiveness of MBSR have largely been conducted in educational and health service contexts in Western countries. Little research addressing MBSR has been conducted in Asian countries. The present study aimed to investigate whether the standardised MBSR program can reduce perceived stress and depression as well as enhance self-esteem and mindfulness in Thai nursing students. A randomized controlled trial was conducted using consenting nursing students (n=127) recruited from a university in northern Thailand. Participants were randomized to either an experimental group (n=63) receiving an 8-week, researcher conducted MBSR program, or a control group (n=64) receiving usual care. Measures included the Thai versions of the Perceived Stress Scale (PSS-10), the Centre for Epidemiology Studies - Depression Scale (CES-D), the Rosenberg Self-Esteem Scale (RSES), and the Mindful Attention Awareness Scale (MAAS), with data being collected at baseline, and weeks 8, 16 and 32 from baseline. Data were analysed using linear mixed modeling. The results demonstrated a significant difference between participants in the experimental and control groups for changes over time in stress (p = .0190), selfesteem (p = <.0001) and mindfulness (p = .0002). However, there was no statistically significant difference for depression scores between groups (p = .1904). Qualitative data collected using a focus group interview with nine consenting experimental group participants indicated that the MBSR program was personally, professionally and culturally acceptable to the participants. The findings of the study demonstrate the utility of MBSR in helping nursing students to enhance mindfulness and self-esteem; and to more effectively cope with stress. Sustained benefits overtime of MBSR may also contribute to improved academic performance, quality of nursing care, and the wellbeing of future nurses.

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

This introductory chapter provides an overview of the research project and the rationale for conducting the study. The chapter commences by providing background information on the topics of stress and related mental health issues with a specific focus on depression and low self-esteem in nursing students including Thai nursing students undertaking university level programs. The impact of these issues in the population outlined is examined. An overview of the researched intervention, the mindfulnessbased stress reduction program (MBSR) and mindfulness variables, is then provided, followed by the rationale for conducting the study. The research objectives, research hypotheses, and research question are then detailed. In the final section of the chapter the operational definitions used in the study and an outline of the thesis are provided.

1.2 BACKGROUND AND SIGNIFICANCE OF THE STUDY

Stress is a universal phenomenon that all people experience throughout all stages of their lives. Undergraduate nursing students often describe high levels of stress. These excessive levels of stress have been reported in a considerable number of studies in many countries over the last two decades (Beck & Srivastava, 1991; Chan, So, & Fong, 2009; Chernomas & Shapiro, 2013; Edwards, Burnard, Bennett, & Hebden, 2010; Jimenez, Navia-Osorio, & Diaz, 2010; Jones & Johnston, 1997; Lo, 2002; Reeve, Shumaker, Yearwood, Crowell, & Riley, 2013). In Thailand, where the present study was undertaken, a study undertaken in 2008 found that 41.7% of baccalaureate nursing students had high stress levels (Thetpiam, 2008). Consistent with this, Jomsri (2009) found that 35.2% of Thai nursing students had high levels of stress, while a further 41.5% of them reported moderate levels of stress. Based on a review of relevant studies, contributors to the high levels of stress experienced by nursing students can be categorized as academic, clinical and/or personal (Goff, 2011; Jimenez et al., 2010; Pryjmachuk & Richards, 2007). Some of these stressors overlap each other. Pulido-Martos, Augusto-Landa, and Lopez-Zafra (2012) conducted a systematic review of 23 quantitative studies to identify factors that nursing students perceive as stressful. The findings showed that the most common sources of stress relate to academic concerns

such as excessive assignments and workload, the difficulty of the academic work undertaken, examinations/assessments, pressures associated with attempting to achieve a passing grade, fear of failing, and factors associated with the educational environment. Other sources of stress identified relate to clinical practice issues including fear of the unknown and unfamiliar situations, lack of professional knowledge and skills, handling of clinical emergencies/technical equipment, an unfriendly environment in hospital wards, and relationships with clinical staff. Personal sources of stress for nursing students were comprised of factors such as issues arising in social relationships, family issues, financial hardship, and a range of non-specific or general personal problems.

The findings from several qualitative studies exploring sources of stress are consistent with and expand upon the evidence from the systematic review. Additional information in these studies related to students' experiences of clinical practicums, support, learning and teaching experiences, course structure (Gibbons, Dempster, & Moutray, 2008); theoretical training, social and personal lives (Altiok & ÜStÜN, 2013); rejection (from staff nurses, instructors, peers or patients), and perceived inadequacy/incompetence of clinical skills (Reeve et al., 2013). Likewise, a qualitative study reported by Naiyapatana, Burnard, and Edwards (2008) found that in addition to the stresses associated with academic work and clinical placements, Thai nursing students reported the difficulties resulting from having to pay respect to more senior students, and the hierarchical nature of nurse education in Thailand.

The concept of stress has been conceptualised from three different theoretical perspectives: stimulus-based, response-based, and transactionally-based (Lyon, 2012). The theoretical perspective chosen to inform this study is the transactionally-based theory that has underpinned nursing research in the field of stress over the last two decades (Lyon, 2012). According to this theory, stress results from a transaction between a person and his or her environment rather than stress existing in the event (Lazarus, 1966). In other words, each individual tends to perceive and respond to the same or similar stressors differently or 'uniquely' (Lazarus & Folkman, 1984). Accordingly, the term 'stress' used in this study emphasizes perceived stress that refers to "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-

being" (Lazarus & Folkman, 1984, p. 19). That is, stress arises when nursing students perceive or appraise a situation as threatening or harmful.

There is strong evidence that high or excessive levels of stress may negatively impact on the overall well-being of both western (Goff, 2011; Kernan & Wheat, 2008) and Thai nursing students (Klainin-Yobas et al., 2014) with reductions in physiological and psychological well-being. Stress-related physiological health issues that are often reported by nursing students include respiratory tract infections, sleep difficulties, increased alcohol use (Kernan & Wheat, 2008), smoking (Yiğitalp, 2015), migraine headache, dizziness, numbness, and stomach ache (Naiyapatana et al., 2008). Frequent psychological health problems as a result of high stress levels experienced by nursing students include psychological distress (Pryjmachuk & Richards, 2007), depression (Kernan & Wheat, 2008; Williams, Hagerty, Murphy-Weinberg, & Wan, 1995; Xu et al., 2014), burnout (Gibbons, 2010), low self-esteem (Edwards et al., 2010; Lo, 2002), increased anxiety and interpersonal difficulties (Kernan & Wheat, 2008). High stress levels in nursing students may also affect the students' concentration, memory and problem solving abilities, ultimately leading to decreased academic performance and achievements (Beddoe & Murphy, 2004). This finding has been supported by the outcomes of the study by Floyd (2010) which demonstrated that high stress levels could significantly predict grade point average (GPA) among American nursing students. Interestingly, increased levels of stress were found to have a stronger impact on psychological distress than on physical health problems among Thai nursing students (Klainin-Yobas et al., 2014); a study conducted amongst Spanish nursing students likewise reported higher levels of psychological symptoms in response to stress in contrast to the level of physiological symptoms reported (Jimenez et al., 2010). In Thailand, a number of previous studies have shown a positive relationship between levels of stress reported by nursing students and psychological health problems, particularly depression (Ross et al., 2005; Vatanasin, 2005) and low self-esteem (Jomsri, 2009; Tunkoon, 1999).

Although there have been fewer studies examining levels of depression than those addressing the impact of high perceived levels of stress, the findings of those studies conducted to date indicate a high prevalence of depression among nursing students in numerous countries. Studies conducted in India (Chatterjee et al., 2014) and Iran

(Ahmadi, Toobaee, & Alishahi, 2004) reported that the majority of the nursing students participating had mild to moderate levels of depression. Studies conducted in the U.S.A. (Dzurec, Allchin, & Engler, 2007), China (Xu et al., 2014), and Canada (Chernomas & Shapiro, 2013) found that 34%, 23%, and 10%, respectively of the nursing students in these studies had high depression scores. Similarly, in Thailand high levels of depression were found in 50% of nursing students by Ross et al. (2005) and in 47% of nursing students by Ratanasiripong and Wang (2011).

Depression is defined as a commonly occurring mental disorder presenting with low mood, loss of interest, feelings of guilt and worthlessness, disturbed sleep or appetite, low energy, poor concentration, and/or suicidal thoughts (American Psychiatric Association, 2013; Radloff, 1977; World Health Organization, 2015). Depression is typically associated with negative self-perception, numerous physical health problems, disruption of daily activities and suicidal ideas. Among nursing students, the behavioural, social and psychological impacts of depression may adversely affect academic performance and well-being. Consistent with this, Vatanasin (2005) found that depression was negatively correlated to educational achievement as measured by GPA in Thai nursing students.

Self-esteem is another mental health variable related to stress in nursing students. This term refers to the sense of self-worth and self-respect associated with the level of psychological well-being of a person (Rosenberg, 1972). Ratanasiripong and Wang (2011) reported measures of self-esteem as an indicator of the psychological well-being of nursing students. Individuals rating as having healthy levels of self-esteem usually consider themselves worthy and competent; describe pride in their achievements; and are able to recognise their limitations (Rosenberg, 1972). Such characteristics could be protective against the impact of stress and the associated psychological problems related to high levels of perceived stress. Lazarus and Folkman (1984) identified healthy levels of self-esteem as an important predictor of an ability to cope with stress. Similarly, a study by Ni et al. (2010) showed that high levels of perceived stress was a risk factor while healthy self-esteem was a preventive factor against mental distress/illness in Chinese nursing students. In contrast, individuals with low self-esteem are more likely to have pessimistic ideas about themselves; to underestimate their capacity and to develop depression as a result. This has been supported by two Thai studies (Ross et al.,

2005; Vatanasin, 2005), showing that self-esteem was negatively related to depression in nursing students. High self-esteem is thus likely to be important for students studying nursing, especially in relation to the development of strong therapeutic relationships with patients (Öhlén & Segesten, 1998), the acquisition of leadership skills (Sasat et al., 2002), and achievement of clinical know-how (Tunkoon, 1999).

High levels of perceived stress have thus far been identified as one of the key psychological issues affecting nursing students, with negative impacts resulting in both physical and psychological symptoms, in particular depression and low self-esteem. The presence of one of these problems significantly impacts on the levels of each of the other problems. A study by Rajesh Kumar (2011) found that there had been a number of strategies that Indian nursing students used to cope with their stress such as developing social support, self-reliance, avoiding, relaxing, seeking spiritual support and seeking professional support. If nursing students can effectively reduce the manner in which they respond to the stressors they encounter, they will likely be healthier, more productive and successful in their academic and clinical training (Ratanasiripong & Wang, 2011). Such benefits might also contribute to improving the quality of nursing care they are able to provide (Beck & Srivastava, 1991), and to also improve their own quality of life. Thus, developing and delivering a stress reduction program designed to enable nursing students to cope more effectively with stress, is an important initiative for the wellbeing of students in particular and the nursing profession more generally. Various strategies and techniques focusing on stress management for the nursing student population have been trialled. These included humour (Ulloth, 2002), autogenic training (Kanji, White, & Ernst, 2006), somatic relaxation (Jain et al., 2007), Practice of the Four Noble Truths and yoga exercises (Ongkulna, 2007), prayer (Nuibandan, Noopetch, Damkliang, & Promtape, 2009), and group counselling (Rodsopa, 2010). In addition to these interventions, several studies have suggested that mindfulness-based stress reduction (MBSR) may also be an effective technique for reducing stress in nursing students (Beddoe & Murphy, 2004; Kang, Choi, & Ryu, 2009; Song & Lindquist, 2015; Young, Bruce, Turner, & Linden, 2001).

MBSR, formerly known as the stress reduction and relaxation program (SR-RP), was developed by Jon Kabat-Zinn and colleagues in 1979. The program was initially offered through an outpatient stress reduction clinic at the University of Massachusetts Medical

Centre. The primary intention driving the development of MBSR was to use it as a complement to the biomedical approach for patients with chronic pain and stress-related conditions (Kabat-Zinn, 2003). Following the release of several books for the general public and the publication of empirical research findings demonstrating the benefits of participation in the MBSR program (Kabat-Zinn, 1982; Kabat-Zinn, 2009; Kabat-Zinn et al., 1992), interest in MBSR increased considerably. MBSR was then developed as a model for use in other hospitals and clinics; and a range of MBSR professional training programs were developed. In 2006, over 250 standard MBSR programs were reported as available worldwide (Baer & Krietemeyer). The early MBSR (SR-RP) program took the form of a 10-week group program. This was subsequently developed into what is now identified as the standard MBSR program which is delivered over 8-weeks, with weekly sessions lasting 2.5-3.5 hours and a 6-8 hour silent retreat held between weeks 6 and 7. The MBSR program emphasises the experiential cultivation of both formal and informal mindfulness practices as detailed further in Chapter Four, section 4.2.8 (Intervention). Formal mindfulness practices comprise a body scan practice, mindful yoga (gentle Hatha yoga), sitting meditation, and walking meditation, while informal mindfulness practices involve the application of mindfulness in everyday life (Kabat-Zinn, 2009; McCown, Reibel, & Micozzi, 2011). Recently, many other mindfulnessbased interventions have modified the standard MBSR curriculum in response to the needs of specific clinical groups, for example, mindfulness-based cognitive therapy (MBCT) for people experiencing relapsing depression (Teasdale, Segal, & Williams, 1995) and dialectical behavioural therapy (DBT) for people living with borderline personality disorder (Linehan, 1993a, 1993b).

The mindfulness practices taught in the MBSR program are based on Buddhist meditative practice (Kabat-Zinn, 1982); however, the program is secular in nature, with Kabat-Zinn (2003) describing the mindfulness practices taught as free from the cultural, religious, and ideological factors associated with the Buddhist roots of mindfulness. While secular in delivery, to maintain effectiveness, the core of the program needs to remain faithful to the Buddhist mindfulness practices from which it is derived. This requires MBSR instructors who have some degree of understanding of the principles of Buddhist mindfulness and to have the ability translate it into methods and forms relevant to the participants' lives (Kabat-Zinn, 2003). Thus, the 'Standard of Practice

for MBSR teachers' has been developed to ensure a consistency of teaching readiness and competency for instructors delivering MBSR (Kabat-Zinn et al., 2014).

The design of MBSR is such that it is non-pathologising, has no hierarchical characteristics, and is applicable for heterogeneous populations (McCown et al., 2011). Hence, MBSR can be applied to a wide range of populations, regardless of disorder or cultural background. This broad applicability is evident from the numerous reviews of the efficacy of MBSR, measuring a range of outcomes among various clinical and nonclinical populations (Baer, 2003; Bishop, 2002; Bohlmeijer, Prenger, Taal, & Cuijpers, 2010; Chiesa & Serretti, 2009; Grossman, Niemann, Schmidt, & Walach, 2004; Khoury, Sharma, Rush, & Fournier, 2015; Sharma & Rush, 2014; Winbush, Gross, & Kreitzer, 2007). A number of reviews of published research have also pointed to evidence that undertaking the MBSR program contributed to positive changes in physiological and psychological health outcomes among study participants (Carmody & Baer, 2009; Keng, Smoski, & Robins, 2011; Shapiro & Carlson, 2010). The majority of findings showed significant decreases in stress, anxiety and depression as well as increases in mindfulness and self-esteem in MBSR participants.

MBSR is aimed at cultivating mindfulness (Kabat-Zinn, 2009; McCown et al., 2011). Mindfulness is the English translation of the Pali word 'sati' (Gunaratana, 2002). An operational definition of mindfulness was given by Kabat-Zinn (2003, p. 145) as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to unfolding of experience moment by moment". Following this definition, Shapiro, Carlson, Astin, and Freedman (2006) developed a model of mindfulness to elucidate a process of mindfulness, comprising three core components: intention, attention, and attitude. These core components are interwoven in a single cyclic process while occurring simultaneously, that is, intention is the basis for undertaking mindfulness practice in the first place; attention is the act of paying attention; and attitude is the quality one brings to the act of paying attention such as nonjudging, nonstriving and nonattachment (Shapiro & Carlson, 2010). These attitudinal foundations of mindfulness form the platform for the difference between mindfulness and relaxation strategies. Relaxation strategies are focused on enabling the individual to achieve a more desirable state while mindfulness practice emphasises nonattachment to the outcome of practice (Kabat-Zinn, 2009). MBSR aims to teach

people to approach stressful events mindfully by observing current conditions (i.e. autonomic arousal, muscle tension, racing thoughts), and experiencing the feeling, sensations, and thoughts themselves, with acceptance; instead of automatically reacting to them (Bishop, 2002; Kabat-Zinn, 2009). However, relaxation may be a by-product of mindfulness practice (Kabat-Zinn, 1996). Several studies have examined the relationship between mindfulness and psychosocial outcomes. The findings showed that mindfulness was associated with high levels of self-esteem among undergraduate students (Pepping, O'Donovan, & Davis, 2013; Rasmussen & Pidgeon, 2011), and was negatively correlated with stress and depression in university students (Heydarinasab & Karimi, 2013).

In Thailand, few studies have been conducted investigating the use of mindfulnessbased interventions in nursing students. Where research has been undertaken, the findings revealed that 6-week Vipassana (insight) meditation practice could reduce stress and enhance mindfulness in Thai nursing students (Nuibandan, Sae-sia, Noopetch, Athaphun, & Roummanarat, 2006); and loving-kindness meditation practice could also decrease stress in this population (Nuibandan, Noopetch, Damkliang, & Chinnawong, 2008). However, in another study mindfulness of hand movements did not reduce stress but enhanced mindfulness among nursing students (Nuibandan, Noopetch, Damkliang, & Promtape, 2009). Interestingly, no study evaluating the use of MBSR has been conducted in Thailand, although many studies in various (mainly Western) countries have suggested that it has no adverse effects, and may benefit a variety of clinical (Baer, 2003; Bishop, 2002; Bohlmeijer et al., 2010; Grossman et al., 2004; Ledesma & Kumano, 2009; Smith, Richardson, Hoffman, & Pilkington, 2005; Winbush et al., 2007) and non-clinical populations (Chiesa & Serretti, 2009; Sharma & Rush, 2014).

However, previous studies examining the effect of MBSR on stress, depression, anxiety, mindfulness and other mental health variables in nursing students have had serious methodological limitations. Most have involved small sample sizes and self-selected samples (Beddoe & Murphy, 2004; Kang et al., 2009; Song & Lindquist, 2015; Young et al., 2001). Additionally, some studies were limited by nonrandomised samples (Young et al., 2001) and the absence of control groups (Beddoe & Murphy, 2004). In a number of instances, when a randomized control trial (RCT) design has been employed,

the intervention models utilized were substantially modified from the original MBSR program (Kang et al., 2009). Accordingly, there are good reasons to exercise caution in applying the findings of much of the research evaluating the use of MBSR. Given the putative advantages of MBSR, the limitations of previous studies, and the lack of MBSR research in Thailand, the present RCT study was designed to avoid similar methodological limitations while investigating the effects of standard MBSR on perceived stress, depression, self-esteem and mindfulness among Thai nursing students.

To date, much of the research addressing the use of MBSR has been quantitative in nature. Very few qualitative studies have as yet been conducted to explore participants' experience of participation in MBSR. Those published to date include MBSR qualitative studies with nurses (Cohen-Katz et al., 2005), community-dwelling adults (Matchim, Armer, & Stewart, 2008), community residents with substance use recovery (Carroll, Lange, Liehr, Raines, & Marcus, 2008), women finishing medical treatment for breast cancer (Dobkin, 2008), urban youth with HIV infection (Sibinga et al., 2008), patients with cancer (Kvillemo & Bränström, 2011), and adults with chronic insomnia (Hubbling, Reilly-Spong, Kreitzer, & Gross, 2014). The similarities reported across these studies found that participants experienced positive changes in self-care, in relationships with others, well-being, physical health, and sleep quality. Only two qualitative studies were identified that addressed the use of MBSR with nursing students. Young et al. (2001) conducted focus group discussions before, during and after participation in an 8-week MBSR program in parallel with a quasi-experimental study. The qualitative findings were consistent with those of the quasi-experimental component of the project: participants perceived MBSR as having a beneficial impact on stress, physical and psychological health and school performance. A further study conducted a focus group to explore the impact of a 7-week, 1-hour stress management and mindfulness program (van der Riet, Rossiter, Kirby, Dluzewska, & Harmon, 2015). The study participants reported positive effects from participation in the program such as increased self-awareness, being present, and enhanced capacity for emotion regulation. Such qualitative data addressing participants' experience of MBSR may contribute to knowledge regarding the implementation practices surrounding MBSR (Smith et al., 2005). Shapiro and Jazaieri (2015, p. 277) have suggested that, "The subtly and depth of mindfulness training effects do not easily lend themselves to quantification, and qualitative data provide a means to access the subjective experience of trainees from a first person perspective". Thus, a qualitative descriptive research component was used to add depth and clarity to the results of RCT conducted in the initial phase of the present study. The findings of the study were expected to indicate the extent to which the MBSR program can reduce perceived stress and depression, and enhance self-esteem and mindfulness in Thai nursing students; and provide a knowledge base for future planning to enhance well-being in this population.

1.3 RESEACH OBJECTIVES

The purpose of this study was to investigate the effect of MBSR on primary outcomes – perceived stress, depression, self-esteem and mindfulness, and secondary outcomes – utilisation of health and counselling service, and grade point average in Thai nursing students. Three specific research objectives were identified:

1. To compare levels of perceived stress, depression, self-esteem, mindfulness, utilisation of health and counselling service, and grade point average in Thai nursing students before and after participation in the MBSR program;

2. To compare levels of perceived stress, depression, self-esteem, mindfulness, utilisation of health and counselling service, and grade point average in Thai nursing students participating in the MBSR program and their counterparts receiving usual treatment;

3. To explore Thai nursing students' experience of participation in the MBSR program.

1.4 RESEARCH HYPOTHESES

On the basis of the considerable body of research published prior to the commencement of this study, The first and second research objectives addressed the main research question 'Can an MBSR program reduce perceived stress and depression and enhance self-esteem and mindfulness in Thai nursing students participating in the MBSR program?' This question contributed to the following research hypotheses for the present RCT study. 1. Participants receiving the MBSR program will have reduced perceived stress immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32) compared to baseline.

2. Participants receiving the MBSR program will have lower perceived stress levels than those receiving usual treatment immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32).

3. Participants receiving the MBSR program will have reduced depression immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32) compared to baseline.

4. Participants receiving the MBSR program will have less depression than those receiving usual treatment immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32).

5. Participants receiving the MBSR program will have improved self-esteem immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32) compared to baseline.

6. Participants receiving the MBSR program will have higher self-esteem than those receiving usual treatment immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32).

7. Participants receiving the MBSR program will have improved mindfulness immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32) compared to baseline.

8. Participants receiving the MBSR program will have a higher level of mindfulness than those receiving usual treatment immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32).

9. Participants receiving the MBSR program will have reduced utilisation of health and counselling services immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32) compared to baseline.

10. Participants receiving the MBSR program will have less utilisation of health and counselling services than those receiving usual treatment immediately on completion of MBSR (i.e. week 8) and at follow-up (weeks 16 and 32).

11. Participants receiving the MBSR program will have improved grade point average at follow-up compared to baseline.

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12. Participants receiving the MBSR program will have a higher level of grade point average than those receiving usual treatment at follow-up.

1.5 RESEARCH QUESTION

The research question for the qualitative component of the study was 'How do Thai nursing students describe the experience of participation in the MBSR program after completion the program?'

1.6 OPERATIONAL DEFINITIONS

Mindfulness-based stress reduction (MBSR) as used in this study was the standard MBSR group-based program developed by Jon Kabat-Zinn, and was delivered following the MBSR curriculum guide of University of Massachusetts Medical School (Blacker, Meleo-Meyer, Kabat-Zinn, Santorelli, & 2009). The format and practices of the MBSR program are explained in the section 4.2.8 of Chapter Four.

Perceived stress in this study refers to "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). Perceived stress was measured using the Perceived Stress Scale (PSS) (Cohen, Kamark, & Mermelstein, 1983) Thai version (Wongpakaran & Wongpakaran, 2010).

Depression was defined as a mental disorder presenting with low mood, loss of interest, feelings of guilt and worthlessness, disturbed sleep or appetite, low energy, poor concentration, and/or suicidal thought (American Psychiatric Association, 2013; Radloff, 1977; World Health Organization, 2015). Depression was measured using the Centre for Epidemiology Studies- Depression Scale (CES-D) (Radloff, 1977) Thai version (Kuptniratsaikul & Ketuman, 1997).

Self-esteem refers to a sense of self-worth and self-respect associated with the psychological well-being of people (Rosenberg, 1972). Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1972) Thai version (Piyavhatkul et al., 2011).

Mindfulness was defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). Mindfulness was measured using the Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2003) Thai version (Christopher, Charoensuk, Gilbert, Neary, & Pearce, 2009).

Utilisation of health and counselling service refers to the participants' use of health services other than the MBSR intervention, and was measured using the Health and Counselling Service Utilisation Questionnaire developed by the researcher.

Grade point average (GPA) refers to participants' GPAs in their nursing study at the School of Nursing, the University of Phayao, for trimesters 1/2013, 2/2013, 3/2013, and 1/2014.

Thai nursing students refers to nursing students aged 18-20 years, studying in the first and the second years of the nursing program (Bachelor of Nursing) of the School of Nursing, the University of Phayao, Thailand.

1.7 OUTLINE OF THE THESIS

The thesis is presented in seven chapters. An outline of the content of each chapter is provided below.

Chapter One (Introduction): This chapter provides the background and significance of the study, research objectives, research hypotheses for the RCT study, and the research question for the qualitative study. The operational definitions and an overview of the study are also provided.

Chapter Two (Literature review): Published literature reporting on the effects of MBSR is reviewed including a comprehensive description of the search strategy and a critical review of the research literature evaluating the effectiveness of MBSR on the psychological health of university students. The chapter concludes with the justification for undertaking the study.

Chapter Three (Methodology): The reasons for using the chosen research approaches and the philosophical underpinnings of each are provided in this chapter. The characteristics, strengths and limitations of each research design employed in the study are discussed. The procedure employed for the overall study is summarised in the last section of the chapter.

Chapter Four (Research methods): This chapter describes the elements of the randomised controlled trial. The methods used for data collection, data analysis, and establishing the rigor of the RCT study are also provided. The procedures utilised for the focus group interview comprising the qualitative study are also described. The methods used for data collection and analysis, and ensuring trustworthiness of the qualitative findings are then explained. The chapter concludes with discussion of ethical considerations pertinent to the study.

Chapter Five (Results of the randomised controlled trial): The chapter reports the RCT results using the CONSORT guideline to inform the presentation of the results. Demographic data for the study participants are presented, followed by the effects of the intervention on the outcome measures. Also reported are the effects of the mediation on the outcomes.

Chapter Six (Findings from the qualitative descriptive study): Key themes and subthemes describing the experience of participants who took part in the MBSR program are presented, and significant quotations are provided.

Chapter Seven (Discussion and Conclusion): This final chapter discusses the demographic data of the participants, followed by a discussion of the RCT results. Qualitative findings are then discussed and integrated with the main RCT results. The main findings of this study are discussed in relation to the findings of other studies evaluating the impact of MBSR. The strengths and limitations of this research and recommendations arising from the findings are outlined. A brief section summarising the thesis is then provided. The chapter ends with a reflection on the experience of undertaking doctoral research.

References and appendices are provided at the end of the thesis.

1.8 SUMMARY

This chapter has provided an overview of the study. Background information pertinent to an understanding of stress as a concept and the consequences of high levels of stress (depression and low-self-esteem) among nursing students in many countries including Thailand are discussed. This information together with an overview of the MBSR program and relevant research publications constitute the rationale for conducting the study. The research objectives, hypotheses, and question which guide the study are outlined and definitions of the operational terms used in the study are detailed. The way in which this thesis is organised has been outlined as a guide to the reader. In the following chapter, the literature review examining published research demonstrating the effectiveness of MBSR on the psychological health of university students will be presented as justification for the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The MBSR program was initially developed in 1979 as a 10-week, 2-hour program, with the first study designed to evaluate the effectiveness of the program published three years later. Kabat-Zinn (1982) reported on a one-group pre-/post-test design, with 51 outpatients referred by their physicians to the 10-week MBSR program for a broad mix of chronic pain conditions that had not improved with traditional medical care. This early evaluation reported reductions in post-intervention pain levels, mood disturbance and psychiatric symptoms compared to baseline. Kabat-Zinn, Lipworth, and Burney (1985) then sampled a larger cohort of 90 patients (by adding an additional 39 patients to the 51 in the original cohort) to evaluate the effect of the 10-week MBSR program. The findings revealed similar improvements between pre and post-intervention measures for the MBSR participants; and the improvements observed were maintained for up to 15 months post-MBSR. In 1992 Kabat-Zinn and colleagues reported on the outcomes from an 8-week MBSR program delivered to 22 participants with generalised anxiety disorder (Kabat-Zinn et al., 1992). Significant reductions in anxiety and depression scores were found with changes maintained at 3-months follow-up. To date, the MBSR program has substantial research-based evidence for its efficacy across a diverse range of clinical and non-clinical populations and has been found to be beneficial for a variety of physical and psychological health problems.

Recent reviews of the empirical literature published to date have reported that the MBSR program has been delivered to patients with medical and psychological symptoms across a wide range of diagnoses such as chronic pain, fibromyalgia, coronary artery diseases, rheumatoid arthritis, psoriasis (Bohlmeijer et al., 2010; Grossman et al., 2004); cancer (Ledesma & Kumano, 2009; Smith et al., 2005); sleep disturbance (Winbush et al., 2007); binge eating disorder, major depressive disorder, anxiety disorder (Baer, 2003; Bishop, 2002). In addition, several studies have investigated the potential impact of MBSR in other medical conditions such as menopause related hot flushes (Carmody, Reed, Merriam, & Kristeller, 2006), type 2 diabetes mellitus (Rosenzweig et al., 2007), and HIV infection (Sibinga et al., 2008).

The vast majority of MBSR research has been conducted using clinical populations. However, the number of studies examining the impact of MBSR in nonclinical populations or healthy people has increased across the past decade. Two systematic reviews of published research reporting on MBSR for stress management in nonclinical populations (Chiesa & Serretti, 2009; Sharma & Rush, 2014) found that the samples in the reviewed studies were undergraduate students, graduate students, healthcare professionals, nurses, primary school teachers, community residents, university staff, and pregnant woman. These reviews concluded that MBSR provided significant benefits for stress reduction although there were some methodological limitations of the studies reviewed. A meta-analysis of research reporting on the impact of MBSR on a range of psychological variables in healthy people (Khoury et al., 2015) identified university students as the most commonly targeted population in the studies included.

The psychological health benefits resulting from participation in MBSR among both clinical and nonclinical populations as reported in the MBSR reviews were reductions in stress, anxiety, depression, anger, rumination, general psychological distress, cognitive disorganisation, and post-traumatic avoidance symptoms; and increases in sense of spirituality, empathy, sense of coherence, mindfulness, forgiveness, selfcompassion, life satisfaction and quality of life (Carmody & Baer, 2009; Keng et al., 2011). Participation in MBSR has also been reported to contribute to positive changes in biological outcomes, including increases in sleep quality, immune response (i.e. natural killer lymphocytes activity and number, and antibody titres to an influenza vaccine); and decreases in resting blood pressure, heart rate, blood sugar level, and severity of hot flushes in clinical and nonclinical populations (Shapiro & Carlson, 2010). Moreover, the number of studies investigating brain changes associated with participation in MBSR has grown steadily. Neuroimaging studies in MBSR participants demonstrated increases in left-side anterior activation associated with positive affect (Davidson et al., 2003); increase in gray matter concentration in the brain regions involved in learning and memory processes, emotion regulation, and self-referential processing (Hölzel et al., 2011); and alterations of cortical representation that increase interoceptive attention to visceral bodily sensations (Farb, Segal, & Anderson, 2013).

As the participants of the present study were nursing students, enrolled in a tertiary education setting as university students, this literature review focuses specifically on the university student population. The purpose of this review was to evaluate existing evidence for the effectiveness of MBSR on the psychological health of university students. The review is guided by the following questions: 1) Do the reviewed studies report on different formats and time frames for the MBSR programs evaluated? 2) Can MBSR improve psychological health? And what are the common psychological outcomes measured by the reviewed studies? 3) What are the methodological issues in studies undertaken to date that should be addressed in future studies?

2.2 SEARCH STRATEGY

The literature search was conducted using the databases Medline, Embase and CINAHL with combinations of four key terms: Mindfulness-based stress reduction, Mindfulness, Intervention, and Students. Included were articles that reported human studies and were published in English or Thai from January 1979 (when MBSR was conceived) to January 2015. Inclusion criteria for this review were original research studies that: 1) utilised MBSR or modified MBSR as an intervention; 2) reported quantitative data using randomised controlled trial or quasi-experimental or cohort studies; 3) measured psychological health as outcomes; 4) sampled healthy university students – undergraduates and graduates. Papers were excluded from this review if they were not primary studies (i.e. literature reviews and systematic reviews). Conference abstracts were also excluded due to the limited information available impeding the possibility of undertaking a quality appraisal of retrieved abstracts (Kable, Pich, & Maslin-Prothero, 2012).

The search strategy using the selected databases and search terms resulted in the retrieval of 608 articles. The titles and abstracts (and the entire manuscript if necessary) of all articles were assessed for relevance in accordance with the inclusion and exclusion criteria. Following this process, there were 15 potentially eligible articles remaining. The full-text articles were accessed to enable a quality appraisal to be undertaken. The reference lists of these articles were then manually searched to identify further relevant studies. Two additional articles were retrieved from this process. The first (Shapiro, Oman, Thoresen, Plante, & Flinders, 2008) presented findings on the same study as that of Oman, Shapiro, Thoresen, Plante, and Flinders (2008), but with different outcome measures; both were thus included as separate studies. Although the

second (Demarzo et al., 2014) was a research letter, it was a short report of an original study that provided sufficient information for quality appraisal. One relevant article retrieved (Astin, 1997) was excluded as the full text of the article could not be obtained by the University of Newcastle's library or by Google search. This resulted in 16 articles remaining. Quality appraisal of these articles was conducted using an internationally recognised checklist of critical appraisal criteria for randomised controlled trial/ pseudo randomised trial (The Joanna Briggs Institute, 2011). No further articles were excluded following this quality appraisal. The results of this appraisal are summarised in Table 1. This literature search strategy resulted in 16 articles that have been included in the following literature review as displayed in Figure 1.


Figure 1: Results of search strategy to identify studies for literature review

| Authors (country) | Participants and numbers | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Shapiro et al., 1998 (USA) | - Medical and premedical students - 73 (WL= 35, MBSR= 38); WL participated in MBSR intervention after the initial trial. | - Parallel- group RCT -No follow-up -Matched randomisation | Modified MBSR (content and class number and length) - 7-wk, 2.5- hr sessions - A full-day retreat was not reported. - Added the forgiveness meditation and mindful listening skills and empathy - Offered as an elective - Qualifications of MBSR instructor were not provided. | Empathy (ECRS) Psychological distress and depression (SCL-90) State and Trait anxiety (STAI) Spirituality (INSPIRIT) | Compared to controls, MBSR group showed significant greater scores in empathy (p<.05) and spirituality (p<.02); and significant lower scores in psychological distress (p<.02), depression (p<.006), state anxiety (p<.05) and trait anxiety (p<.002). WL showed significant reductions in depression (p<.01), anxiety (p<.001) and increases in empathy (p<.001) and spirituality (p<.002) after the MBSR intervention. | Strengths - RCT - Outcomes assessor did not involve in the study. - Replication of the MBSR intervention in WL group. Concerns - Sample size calculation was not provided. - Modified MBSR |
| 2. Young et al., 2001 (Canada) | - Third-year undergraduate nursing students - 30(NT=15, MBSR=15) | - Quasi- experimental (pre-/post-test) | MBSR - 8-wk course - Details of MBSR program and qualifications of MBSR instructor were not clear. | Health status profile Physical and psychological symptoms of stress (Symptom checklist) Sense of coherence (Antonovsky's orientation-to-life questionnaire) | The MBSR intervention produced small to moderate (d=0.2-0.5) effect sizes for health related effects, sense of coherence and physical symptoms as well as large effect for psychological symptoms $(d=0.8)$. | Strengths - A pioneer study examining effects of MBSR in nursing students. <i>Concerns</i> - Non-randomised and self-selected sample - Sample size calculation was not provided. |

Table 1: Summary of included studies investigating MBSR effects in university students

WL: Waiting-list control group; NT: No treatment; ECRS: Empathy Construct Rating Scale; SCL-90: Hopkins Symptom Checklist 90; STAI: State-Trait Anxiety Inventory; INSPIRIT: Index of Core Spiritual Experiences

| Authors (country) | Participants and | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (0000005) | numbers | | | | | |
| 3. Rosenzweig et al.,2003 (USA) | - Second-year medical students -302 (controls participated in a didactic seminar on complementary medicine=162, MBSR=140) | - Quasi- experimental (Prospective, pre-/post-test) - a 5-year study | Modified MBSR (Class number and length) - 10-wk, 1.5 hr sessions - A full-day retreat was not reported. - Offered as a choice of seminar - Qualifications of MBSR instructor were not provided. | - The Profile of Mood States (POMS) consisting of Tension- Anxiety (T-A), Vigor- Activity (V-A), Fatigue- Inertia (F-I), Confusion- Bewilderment (C- B),Depression-Dejection (D-D), Anger-Hostility (A-H), and Total Mood Disturbance (TMD), | Within MBSR group : Increase in V-A (p=.006) : Decreases in TMD (p=.05), T-A(p=.009) and C-B(p=.009) Within control group : Increase in T-A (p=.0008), F-I (p<.0001), and TMD (p=.0003) : Decrease in V-A (p=.0001) Between two groups : Differences in changes of TMD scores (p<.0001), T-A (p<.0001), V-A (p<.0001), F-A (p=.0006) and C-B (p=.02) | Strengths - Adequate sample size - As a seminar course offered, it did not require extra time commitment to attend the intervention. <i>Concerns</i> - Non-randomised and self-selected samples - Sample size calculation was not provided. - Modified MBSR |
| 4. Beddoe& Murphy, 2004 (USA) | Undergraduate nursing students - 16 participants | One-group pre-/post-test | MBSR - 8-wk,2-hr sessions - A full-day retreat was not reported. - Qualifications of MBSR instructor were not provided. (Researcher-led mindfulness course followed MBSR guidelines) | Interpersonal Reactivity Index (IRI) consisting of Perspective Taking Scale, Fantasy Scale, Empathic Concern Scale and Personal Distress Scale Derogatis Stress Profile (DSP) | - Participation in the intervention significantly reduced students' stress (p>.05). | <i>Concerns</i> - Small sample size and self-selected sample - No control group |

| Authors (country) | Participants and | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | numbers | | | | | |
| 5. Jain et al., 2007 (USA) | - Medical students, graduate nursing students, and undergraduate students in premedical studies - 81(WL=30, MBSR=27, and SR=24) | - 3-arm RCT :Matched randomisation - No follow-up - Random number generator | Modified MBSR (Class number and length) - 4-wk, 1.5-hr sessions - A 6-hr retreat between session 3 and session 4 - Qualifications of MBSR instructor were provided | Psychological symptoms of distress (BSI) Positive psychological states (PSOM) distractive and ruminative thoughts/behaviours (DER) Spirituality (INSPIRIT) | <i>MBSR</i> = <i>SR</i> > <i>WL</i> No differences between MBSR and SR group on psychological distress and positive mood states. MBSR and SR group experienced significant decreases in psychological distress and increases in positive mood states over time (p<.05) <i>MBSR</i>><i>WL</i> Decrease in distractive and ruminative thoughts/behaviours (p<.04) | Strengths - RCT - Adequate samples as calculated - Compared MBSR with alternative intervention - Utilised both 'per protocol analysis' and 'intention-to-treat analysis' <i>Concerns</i> - Self-selected sample - Modified MBSR |
| 6. Oman et al., 2008 (USA) | Undergraduate Students - 44 (WL=15, MBSR=15 and EPP=14) | - 3-arm RCT - 3-time point measurement: pretest, posttest (week 8), and 8-wk follow-up - randomisation with computer software | <i>Modified MBSR</i> (<i>Class length</i>) - 8-wk, 1.5-hr sessions - No a full-day retreat - A qualified MBSR instructor | Perceived stress (PSS-10) Rumination (RRQ) Forgiveness for others (HFS) Hope (ADHS) | - MBSR=EPP>WL : No differences between effects from MBSR and EPP at either posttest or 8-wk follow-up alone, or together (p>.10). : MBSR and SR group demonstrated decreases in perceived stress (p<.05) and rumination ((p<.10), and increase in forgiveness (p<.05) at posttest and 8-wk follow-up as compared to pretest. | Strengths - RCT - Assessed long-term effects of the intervention. - Online outcome assessment - Compared MBSR with alternative intervention <i>Concerns</i> - Small Sample size - Modified MBSR |

SR: Somatic Relaxation; BSI: Brief Symptom inventory; PSOM: Positive States of Mind Scale; DER: Daily Emotion Report; INSPIRIT: Index of Core Spiritual Experiences; PSS-10: Perceived Stress Scale-10; RRQ: Rumination and Reflection Questionnaire; HFS: Heartland Forgiveness Scale; ADHS: Adult Dispositional Hope Scale

| Authors (country) | Participants and numbers | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|----------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7. Shapiro et al., 2008 (USA) | Undergraduate Students - 44 (WL=15, MBSR=15 and EPP=14) | - 3-arm RCT - 3-time point measurement: pretest, posttest (week 8), and 8-wk follow-up - randomisation with computer software | <i>Modified MBSR</i> (<i>Class length</i>) - 8-wk, 1.5-hr sessions - No a full-day retreat - A qualified MBSR instructor | - Mindfulness (MAAS) | <i>MBSR</i> =<i>EPP</i> ><i>WL</i> No differences between MBSR and EPP group participants on mindfulness at all-time points (p>.40). Significant increase in mindfulness at 8-week follow- up in both MBSR and EPP group (p=.004). Increases in mindfulness mediated in perceived stress and rumination (p=.02 for both). | Strengths - RCT - Assessed long-term effects of the intervention. - Online outcome assessment - Compared MBSR with alternative intervention <i>Concerns</i> - Small Sample size - Modified MBSR |
| 8. Kang et al., 2009 (Korea) | -Nursing students - 32 (NT=16 and MBSR=16) | - Parallel- group RCT - No follow-up -Randomisation with drawing a number | Modified MBSR (Content) - 8-wk, 1.5to 2-hr sessions - A full-day retreat was not reported. - Added new content such as music meditation and happy memories, my good point scan, Thanks scan. - Qualifications of instructor were provided but not MBSR instructor. | - Stress (PWI-SF) - Anxiety (STAI) - Depression (BDI) | There were significant decrease in mean scores of stress, anxiety and depression in the MBSR group. There were significant differences between two groups in post-intervention stress scores (p=.020) and anxiety scores (p=.013) but no difference in depression scores (p=0.056). | Strengths - RCT - Adequate samples as calculated - Outcomes assessors were kept blinded to the group allocation. Concerns - Small sample size Modified MBSR |

EPP: Easwaran's Eight-Point program; MAAS: Mindful Attention Awareness Scale; PWI-SF: Psychological Wellbeing Index-Short Form; STAI: State-Trait Anxiety Inventory; BDI: Beck Depression Inventory

| Authors (country) | Participants and numbers | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-----------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9. Shapiro et al., 2011 (USA) | Undergraduate students - 30 (WL=15 and MBSR=15) | - Parallel- group RCT - 4-time point measurement: pretest, posttest (week 8), 2-and 12- month follow- up after treatment - randomisation with computer software | <i>Modified MBSR</i> (<i>Class length</i>) - 8-wk, 1.5-hr sessions - No a full-day retreat. - A qualified MBSR instructor | Mindfulness (MAAS) Rumination (RRQ) Perceived stress (PSS-10) Subjective well-being (SWB) Self-compassion (SCS) Hope (ADHS) Empathy (IRI) Forgiveness (HFS) | <i>MBSR</i> > WL 1. Increases in mindfulness (p<.05), SWB (p<.01), empathy (p<.02) and hope (p<.08) from pretest to 2-mt follow-up. 2. Increase in mindfulness, SWB and empathy (all p<.05), and hope (p<.01); and decrease in perceived stress (p<.10) from pretest to 12- month follow-up. <i>Moderation analysis</i> MBSR participants with higher levels of baseline mindfulness showed greater increases in mindfulness, SWB, empathy and hope; and larger decrease in perceived stress at 2- and 12- month follow-up. | Strengths - RCT - Multiple assessment points extending to 1 year after intervention - Online outcome assessment Concerns - Small sample size - Modified MBSR |
| 10. Shapiro et al., 2012 (USA) | - Graduate students - 25 | - One group design - 3-time point measurement: baseline, post- MBSR (week 8), and 2- month follow- up (week 16) | MBSR - 8-wk, 2-hr sessions - A half day retreat - A qualified MBSR instructor | Moral reasoning and ethical decision making (DIT-2) Mindfulness (FFMQ and MAAS) Emotion (STAI-T, STAI-S, and PANAS) | <i>-From baseline to post- MBSR</i> : There were significant improvements on all measures of mindfulness (FFMQ, p<.001; MAAS, p<.005), all measures of emotion (STAI-T, p<.005; STAI-S, p<.001; PANAS positive, p<.009; PANAS negative, p<.001), | Strengths - Assessed long-term effects of the intervention. - Program was conducted by a qualified MBSR instructors |

MAAS: Mindful Attention Awareness Scale; RRQ: Rumination and Reflection Questionnaire; PSS-10: Perceived Stress Scale-10; SCS: Self-Compassion Scale: ADHS: Adult Dispositional Hope Scale; IRI: Interpersonal Reactivity Index; HFS: Heartland Forgiveness Scale

| Authors (country) | Participants and | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|----------------------|---------------------|-----------------|--------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| | numbers | | | | | |
| | | | | - Well-being (EQ, IRI, SCBCS, SCS, SHS, and PSS) | and well-being measures (EQ, p<.001; SCBCS, p<.03; SCS, p<.001; SHS, p<.03; and PSS, p<.001) : No significant changes on moral reasoning (p>.03) and IRI (p>.54) - <i>From baseline to 2-month</i> <i>follow-up</i> : There were significant improvements on moral reasoning (p<.03), both measures of mindfulness (FFMQ, p<.001; MAAS, p<.03), emotion measures (PANAS negative, p<.001), and well-being measures (EQ, p<.007; SCS, p<.006; and PSS, p<.001) : No significant changes on STAI-S (p>.060), STAI-T (p>.06), PANAS positive (p<.09), IRI (p>.11), SCBCS | Concerns - Small sample size and self-selected sample - No control group |

FFMQ: Five Facet Mindfulness Questionnaire; MAAS: Mindful Attention Awareness Scale; STAI-T; STAI-S: State-Trait Anxiety Inventory-Trait and State; PANAS: Positive and Negative Affectivity Schedule; EQ: experiences Questionnaire; IRI: Interpersonal Reactivity Index; SCBCS: Santa Clara Brief Compassion Scale; SCS: Self-Compassion Scale; SHS: Subjective Happiness Scale; PSS: Perceived Stress Scale

| Authors (country) | Participants and | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11. Barbosa et al., 2013 (USA) | - Graduate healthcare students - 28 (NT=15 and MBSR=13) | - Quasi- experimental - 3-time point measurement: baseline, week 8 (after program completion), and week11(3 weeks post- program completion) | Standard MBSR - 8-wk, 2.5-hr sessions - 8-hr, day-long retreat during the 6 th week. - Qualifications of MBSR instructor were not provided. | - Anxiety (BAI) - Empathy (JSPE) - Burnout (MBI) | There were significant differences between experimental and control groups in anxiety scores at week 8 (p<.001) and week 11 (p<.01); and empathy scores at week 8 only (p<.0096). No statistical differences between two groups in burnout scores at week 8 and 11. | Strengths - Assessed long-term effects of the intervention. - Standard MBSR Concerns - Non-randomised and self-selected sample - Small sample size and sample size calculation was not provided. |
| 12. Bergen- Cico et al., 2013 (USA) | Undergraduate Students - 119 (controls enrolled elective health courses on addictive behaviours = 47, and MBSR =72) | - Quasi- experimental (pre-/post-test) | Modified MBSR (Class number and length) - 5-wk, 2-hr sessions - A full-day retreat was not reported. - Incorporate MBSR into elective courses - a qualified MBSR instructors | Mindfulness (PHLM and KIMS) Self-compassion (SCS) Anxiety (STAI-T) | Significant improvements in mindfulness for the KIMS scores (p≤.001); the PHLM scores (p≤.001) and self-compassion (p≤.001) in the MBSR group compared with the controls. No significant reduction in trait anxiety between two groups (p≤.10). | Strengths - Program was conducted by a qualified MBSR instructors <i>Concerns</i> - Non-randomisation - Modified MBSR |

BAI: Burns Anxiety Inventory; JSPE: Jefferson Scale of Physician Empathy; MBI: Maslach Burnout Inventory; PHLM: Philadelphia Mindfulness Scale; KIMS: Kentucky Inventory of Mindfulness Skills; SCS: Self-Compassion Scale; STAI: State-Trait Anxiety Inventory

| Authors (country) | Participants and | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| × • • • | numbers | 0 | | | | |
| 13. De Vibe et al., 2013 (Norway) | - Medical and psychology students (recruited from two universities) - 288 (NT=144, MBSR= 144) | Parallel - group RCT No follow-up Random number generator | Modified MBSR (Class number and length) - 6-wk, 1.5-hr sessions - A 6-hr session in week 7 - Six qualified MBSR instructors | - Mental distress (GHQ12) - Burnout (MBI) - Stress (PMSS) - Subjective Well-being (SWB) -Mindfulness (FFMQ) | - Compared to controls, there were significant effect of the MBSR grogram on mental distress (p<.001), well-being (p<.001) and overall mindfulness facets (p<.01). - No significant reduction in stress (p=.021) and burnout (p=.204). | Strengths - RCT with trial registration - Large sample size - Online outcome measurements - MBSR program was conducted independently of the students' study curricula by qualified MBSR instructors. - It is the first RCT study reporting differential gender effects of participating in MBSR. <i>Concerns</i> - Modified MBSR |
| 14. Demarzo et al., 2014 (Brazil) *Research letter | - University students - 23 | - One-group pre-/post-test | MBSR - 8-wk, 2.5-hr sessions - A full-day retreat - Details of MBSR program and qualifications of MBSR instructor were not provided. | - Stress (PSS; Brazilian validated version) - Quality of life (WHOQOL-BREF; Brazilian validated version) | Improvements from baseline to at the end of the MBSR program in stress (p=.001) and quality of life (p<.003) Strong correlations between final changes from baseline in stress and quality of life (overall and psychological domains) | Strengths - Standard MBSR Concerns - Small sample size and self-selected sample - No control group |

GHQ-12: General Health Questionnaire-12; MBI: Maslach Burn Inventory; PMSS: Perceived Medical Stress Scale; FFMQ: Five Facet Mindfulness Questionnaire; PSS: Perceived Stress Scale; WHOQOL-BREF: World Health Organisation Quality of Life Questionnaire

| Authors (country) | Participants and | Study design | Intervention | Main Outcome measures | Key significant results | Strengths and concerns of the study |
|-----------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | numbers | _ | | | | |
| 15. Erogul et al., 2014 (USA) | - First-year medical students - 58 (NT=30 and MBSR=28) | Parallel - group RCT 3-time point measurement: baseline, week 8 (after program completion), and 6 months post- intervention (week 32) Random number generator | Modified MBSR (Class length) - 8-wk, 1.15-hr sessions) - A full-day retreat between the 7 th and 8 th weeks. - Qualifications of MBSR instructor were provided. | - Stress (PSS) - Self-compassion (SCS) - Resilience (RS) | Compared to controls, MBSR group had significant improvements in stress (p=.03) and self- compassion (p=.002) at week significant improvement in self-compassion (p=.001) at week 32. non-significant improvement in stress at week 32(p=.08). The MBSR intervention had no effect on the resilience scores at either time point. | Strengths - RCT with randomised sample - Adequate samples as calculated - Assessed long-term effects of the intervention. <i>Concerns</i> - Modified MBSR |
| 16. Song& Lindquist, 2015 (Korea) | - Nursing students - 44 (WL= 23 and MBSR= 21) | - Parallel - group RCT - No follow-up | MBSR - 8-wk, 2-hr sessions - A full-day retreat was not reported. - Qualified MBSR instructor | Depression, anxiety and stress (DASS-21) Mindfulness (MAAS; Korean version) | There were significant decrease in mean scores of depression, anxiety and stress; increase in mindfulness for the MBSR group. There were significant differences between two groups in depression (p=.002), anxiety (p=.023), stress (p<.001) and mindfulness (p=.010). | Strengths - RCT - Adequate samples as calculated <i>Concerns</i> - Small sample size and self-selected sample - A full-day retreat was not reported. |

PSS: Perceived Stress Scale; SCS: Self-Compassion Scale S: Resilience Scale; DASS-21: Depression, Anxiety and Stress Scale-21; MAAS: Mindful Attention Awareness Scale

2.3 CRITICAL REVIEW OF THE LITERATURE

Relevant studies derived from the literature search are reviewed critically in order to ascertain what is known about the phenomenon of interest and to identify knowledge gaps regarding the effectiveness of MBSR.

2.3.1 Study characteristics

The majority of studies (n = 11) were undertaken in the USA, with a further two conducted in Korea (Kang et al., 2009; Song & Lindquist, 2015). Single studies were conducted respectively in Canada (Young et al., 2001), Norway (de Vibe et al., 2013), and Brazil (Demarzo et al., 2014). Participants in 13 of the 16 studies were undergraduate students; of these 13 studies, four researched the application of MBSR to nursing student populations (Beddoe & Murphy, 2004; Kang et al., 2009; Song & Lindquist, 2015; Young et al., 2001). Two studies sampled graduate students (Barbosa et al., 2013; Shapiro, Jazaieri, & Goldin, 2012), while one sampled a combination of medical students, graduate nursing students, and undergraduate students in premedical studies (Jain et al., 2007). Of the 16 studies meeting the inclusion criteria, nine utilised a randomised controlled trial (RCT) design. Of these nine, six employed a parallel RCT design (de Vibe et al., 2013; Erogul, Singer, McIntyre, & Stefanov, 2014; Kang et al., 2009; Shapiro, Brown, Thoresen, & Plante, 2011; Song & Lindquist, 2015) and three applied a three-arm RCT design to the research undertaken (Jain et al., 2007; Oman et al., 2008; Shapiro et al., 2008). The RCT is considered the most rigorous research design, with the implication that the observed effects on psychological health outcomes can be more confidently attributed to the MBSR intervention, rather than to extraneous variables (Polit & Beck, 2014). Four studies employed a quasi-experimental design (Barbosa et al., 2013; Bergen-Cico, Possemato, & Cheon, 2013; Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003; Young et al., 2001). The remainder of the studies used a one group pre-/post-test design (Beddoe & Murphy, 2004; Demarzo et al., 2014; Shapiro et al., 2012). Three of the reviewed studies reported on different aspects of the same research project (Oman et al., 2008; Shapiro et al., 2011; Shapiro et al., 2008).

In summary, the majority of the studies were carried out in the USA, sampled undergraduate students, and utilised an RCT research design.

2.3.2 Reported format and time frames for the MBSR intervention

The standardised MBSR program consists of 8 weekly sessions of 2.5-3.5 hours with a full-day retreat of 6-8 hours duration held in the sixth week (Baer & Krietemeyer, 2006; Kabat-Zinn, 2014). While all the studies reviewed claimed to have employed and evaluated MBSR, in practice the treatment models varied considerably both in format and duration. Only one study, that of Barbosa et al. (2013), implemented an MBSR intervention modelled closely on that originally developed by Kabat-Zinn (2014) and the MBSR curriculum guide (Blacker et al., 2009). The duration of the reported MBSR interventions varied from four to ten weeks. The majority of studies (n = 11) utilised an 8-week intervention. One study evaluated a 4-week intervention (Jain et al., 2007), another utilised a 5-week intervention (Bergen-Cico et al., 2013), yet another evaluated a 6-week program (de Vibe et al., 2013). A 7-week intervention was reported by Shapiro, Schwartz, and Bonner (1998), and a 10-week program was reported by Rosenzweig and colleagues (2003). Just as the number of weeks over which the MBSR intervention was delivered varied, likewise, the duration of practice sessions varied from 1.15-2.5 hours per session. Most studies reported on sessions (n = 7) of 1.5 hours duration; with four studies using 2-hour sessions, three studies reporting 2.5 hours sessions and one study employed 1.15 hour sessions. The remaining study failed to indicate the duration of practice sessions (Young et al., 2001).

A key component of standard MBSR is a full day (6-8 hour) retreat. Seven studies failed to indicate the inclusion of a full day retreat as part of the intervention delivered. Three studies (Oman et al., 2008; Shapiro et al., 2011; Shapiro et al., 2008) reported that no full day retreat was included in the intervention. The remaining six studies included a retreat day with the duration varying from a half day to a full day in length (Barbosa et al., 2013; de Vibe et al., 2013; Demarzo et al., 2014; Erogul et al., 2014; Jain et al., 2007; Shapiro et al., 2012).

While all studies with the exception of one, reported variations from the standard MBSR model in number and/or length of sessions, two studies further varied the intervention evaluated by adding additional components. The study by Shapiro et al. (1998) incorporated forgiveness meditation, mindful listening skills and empathy into the program evaluated. The other study augmented standard MBSR with additional

components including a music meditation, 'happy memories', 'my good point scan' and a give thanks scan (Kang et al., 2009). Such modifications and adaptations make it difficult to determine the effectiveness of the core components of MBSR. Mars and Abbey (2010) have suggest that adherence to delivering standardised MBSR when undertaking research would minimise difficulties in attempting comparison between outcomes of interventions delivered in different settings or to different populations.

Research seeking to evaluate the effectiveness of interventions of manualised therapies such as cognitive behaviour therapy (CBT) and mindfulness based cognitive behaviour therapy (MBCT), require that therapists adhere to the standardised intervention model. Likewise, instructors who have completed the requisite training, have a personal mindfulness practice and are experienced instructors are essential for the optimal form and delivery of the MBSR program (Kabat-Zinn, 2014). Fjorback, Arendt, Ørnbøl, Fink, and Walach (2011), emphasise that for an optimal RCT study design qualified and experienced instructors must deliver the intervention under evaluation. Half of the studies reviewed (n = 8) did not report the qualifications and experience of the instructors who conducted the MBSR intervention. Seven studies reported that the MBSR interventions were led by qualified MBSR instructors (Bergen-Cico et al., 2013; de Vibe et al., 2013; Oman et al., 2008; Shapiro et al., 2011; Shapiro et al., 2012; Shapiro et al., 2008; Song & Lindquist, 2015). One study was conducted by a researcher who had received professional training in mindfulness meditation and had lectured on meditation for eight years (Kang et al., 2009), however formal training as an MBSR instructor was not reported. In order to increase confidence in the study findings, Baer (2003) suggests that the training and qualifications of the MBSR instructor delivering the intervention should be reported.

In summary, the majority of the studies reviewed did not implement the standardised MBSR program in terms of number and length of sessions; and failed to provide information outlining the qualifications and experience of the instructors who delivered the intervention. Two studies also reported delivering an intervention that included significant modification and additions to the standard MBSR program.

2.3.3 Effects of MBSR on psychological health

The findings of the 16 studies reviewed reported that the MBSR intervention resulted in significant improvements in a range of psychological health outcomes including decreases in stress, anxiety, depression, rumination, burnout; and increases in mindfulness, positive mood states, self-compassion, hope, empathy, spirituality, and resilience among the university student population. None of the studies included in the review evaluated the effect of MBSR on self-esteem in the university student population.

Psychological health outcomes

In these studies evaluating the impact of MBSR, the most common outcomes related to psychological health that were evaluated were stress (n = 9); followed by mindfulness (n = 6), anxiety (n = 6), depression (n = 3) and self-compassion (n = 3). The present study was designed to examine the effects of MBSR on four specific psychological outcomes – stress, depression, self-esteem and mindfulness, as detailed in Chapter One. Thus, this review focuses on the three of these outcomes reported by the 16 identified studies that are in common with the present study (stress, depression and mindfulness).

MBSR and stress

The nine studies that evaluated the effect of MBSR on stress used a range of different self-administered questionnaires to measure stress scores. Five of the nine studies (Demarzo et al., 2014; Erogul et al., 2014; Oman et al., 2008; Shapiro et al., 2011; Shapiro et al., 2012) assessed perceived stress level using the Perceived Stress Scale (PSS), developed by Cohen et al. (1983). The remaining studies measured stress levels using the Derogates Stress Profile (DSP) (Beddoe & Murphy, 2004), the Psychosocial Wellbeing Index-Short Form (PWI-SF) (Kang et al., 2009), the Perceived Medical School Stress scale (PMSS) (de Vibe et al., 2013), and the Depression, Anxiety and Stress Scale-2 (DASS-21) (Song & Lindquist, 2015).

Of these nine studies, eight reported a significant reduction in post-intervention stress scores at week 8. Only one study found that the MBSR intervention did not significantly reduce student stress across the whole sample (p = .021) with a significant reduction in stress measured in female students only (de Vibe et al., 2013). It is notable that the duration of the MBSR program in this study was 6 weeks while the remaining 8 studies

delivered an 8 week intervention. This may suggest that male students require a longer time frame (the 8-week standard) to achieve a significant reduction in stress.

Of those studies reporting a positive effect on stress, three studies that employed a one group pre-/post-test design showed a decrease in post-intervention stress scores compared to baseline at the levels of significance, p < .05 (Beddoe & Murphy, 2004), p < .001 (Shapiro et al., 2012), and p = .001 (Demarzo et al., 2014). Similarly, the findings of the three RCT studies showed a significant decrease in post-intervention stress scores for the MBSR group compared to baseline (Erogul et al., 2014; Kang et al., 2009; Song & Lindquist, 2015). In addition, four of the RCT studies found differences in post-intervention stress scores between the control and MBSR groups at the levels of significance, p < .05 (Oman et al., 2008), p = .020 (Kang et al., 2009), p = .03 (Erogul et al., 2014), and p < .001 (Song & Lindquist, 2015).

MBSR and mindfulness

Of the 16 reviewed studies, five investigated the impact of MBSR on measures of mindfulness. Four of these five studies (Shapiro et al., 2011; Shapiro et al., 2012; Shapiro et al., 2008; Song & Lindquist, 2015) measured mindfulness using the Mindful Attention Awareness Scale (MAAS), developed by Brown and Ryan (2003). Shapiro et al. (2012) also used the Five Facet Mindfulness Questionnaire; (FFMQ) to measures mindfulness along with using the MAAS. Bergen-Cico et al. (2013) measured the impact of MBSR on mindfulness using the Philadelphia Mindfulness Scale (PHLM) and the Kentucky Inventory of Mindfulness (KIMS).

Four studies reported a significant effect on mindfulness with an improvement in postintervention mindfulness scores. Two of the four studies investigated the impact of the 8-week MBSR intervention on mindfulness. Shapiro et al.'s one-group pre-/post-test design study (2012) revealed significant increases in mindfulness scores on the MAAS (p < .005) and the FFMQ (p < .001) post-MBSR (week 8) compared to baseline. A similar significant finding was also found in an RCT study (Song & Lindquist, 2015). A further two RCT studies evaluated the effect of a 6-week MBSR intervention (de Vibe et al., 2013) and a 5-week MBSR intervention (Bergen-Cico et al., 2013) on mindfulness. The findings showed significant differences between the control and MBSR groups at the end of the MBSR program at week 6 with p < .01 (de Vibe et al., 2013) and week 5 with $p \le .001$ for both the KIMS and the PHLM scores (Bergen-Cico et al., 2013).

MBSR and depression

Of the 16 studies reviewed, only three RCT studies evaluated the effect of MBSR on depression. The outcome measures used to measure depression differed across these studies – the Hopkins Symptom Checklist 90 (SCL 90) (Shapiro et al., 1998), the Beck Depression Inventory (BDI) (Kang et al., 2009), and the Depression, Anxiety and Stress Scale-21 (DASS-21) (Song & Lindquist, 2015).

Kang et al. (2009) and Song and Lindquist (2015) found significant reductions in mean depression scores for the MBSR group from baseline to the end of MBSR program (week 8). Compared to controls, the MBSR group had significant lower scores on depression at the end of the program – at week 7, p < .006 (Shapiro et al., 1998) and at week 8, p = .010 (Song & Lindquist, 2015). However, Kang et al. (2009) did not find a statistically significant difference in depression scores between the control and MBSR groups (p = .056).

In summary, the reviewed studies demonstrated that the MBSR interventions delivered resulted in reductions in stress, increased mindfulness and reduced depression among university student populations including nursing students. The majority of the reviewed studies used the Perceived Stress Scale (PSS) and The Mindful Attention Awareness Scale (MAAS) to measure stress and mindfulness scores, respectively. The studies that sought to assess the impact of MBSR on depression utilised a diverse range of depression measures.

Long-term effects of MBSR

As mindfulness is a skill that often develops over months and years, longer term assessment is important to determine whether participation in an MBSR intervention results in an enduring improvement in mindfulness scores (Shapiro & Jazaieri, 2015). Of the 16 studies reviewed, most studies (n = 11) only assessed the short-term effect of an MBSR intervention with initial measures completed at baseline and final measures completed at intervention completion. Six studies extended data collection for a range of time periods (2, 6 and 12 months) seeking to assess the durability of the beneficial outcomes associated with participation in an MBSR program. Barbosa et al. (2013)

demonstrated a significant difference in anxiety scores (p < .001) between the control and MBSR groups at 3-weeks follow-up but no statistical differences in empathy and burnout at this time point. Two studies revealed that significant decreases in perceived stress had been maintained at 2-months follow-up; with p < .05 (Oman et al., 2008), and p < .001 (Shapiro et al., 2012). Likewise, three studies showed that increased mindfulness scores reported in MBSR group participants were significantly sustained over the 2 months of the follow-up period; with p = .004 (Shapiro et al., 2008), p < .05 (Shapiro et al., 2011), and p < .001 for the FFMQ and p < .03 for the MAAS measures (Shapiro et al., 2012). In addition, Shapiro et al. (2011) extended follow-up to evaluate the sustained effects of MBSR at 1-year post-intervention. The results showed that relative to the control group, the MBSR group had a marginally significant decrease in perceived stress (p < .10) and a significant increase in mindfulness (p < .05) from baseline to 1-year follow-up. However, Erogul et al. (2014) found a non-significant improvement in perceived stress at 6-months follow-up.

In summary, several of the reviewed studies provided evidence that the benefits of MBSR on anxiety, stress and mindfulness are enduring post-intervention for periods ranging from 3-weeks to 1-year.

Moderators and mediators of outcomes of MBSR

Empirical intervention studies of MBSR to date have examined not only whether MBSR is effective, but have also identified individual moderators and mediators that impact on MBSR outcomes. A moderator is a variable that influences the direction and/or magnitude of the relationship between two other variables while a mediator is a variable that explains or generates the mechanism for the relationship between two other variables (Baron & Kenny, 1986). When considering analysis of the outcomes from MBSR interventions, moderation analysis has the potential to identify those individuals likely to experience greater benefit from MBSR (Shapiro et al., 2011), while mediation analysis may determine potential mediators of outcomes from participation in an MBSR program. Only three of the RCT studies reviewed included analyses of moderators (de Vibe et al., 2013; Shapiro et al., 2011) and mediators (Shapiro et al., 2008). Shapiro et al. (2011) assessed the moderating role of an individual's pre-intervention trait mindfulness on the outcomes identified from participation in the MBSR intervention.

higher levels of pre-treatment trait mindfulness showed greater increases in mindfulness (p < .01), subjective well-being (p < .005), empathy (p < .03) and hope (p < .008) and decreased perceived stress (p < .04) for up to 1 year post intervention. de Vibe et al. (2013) sampled medical and psychology students from two universities to test whether the intervention effects were moderated by gender, the course in which the student was enrolled (psychology or medicine), the university location, course instructors, program attendance, and reported mindfulness practice. The results revealed that higher levels of home practice of mindfulness (p < .05) and class attendance (p < .01) were associated with increased intervention effects in terms of mental distress. Shapiro et al. (2008) examined whether mindfulness, as measured by the MAAS, mediated the outcomes of MBSR in relation to perceived stress, rumination and forgiveness that had previously been reported by Oman et al. (2008). Shapiro et al. (2008) found that an increase in mindfulness significantly mediated reductions in perceived stress and rumination (p = .02 for both).

In summary, two studies reported increased mindfulness as both a moderator and a mediator for positive psychological outcomes from MBSR interventions. A third study identified frequency of class attendance and time spent in home practice of mindfulness as moderators of the effect of MBSR on mental distress.

2.3.4 Methodological limitations

The results of the literature review undertaken indicate that MBSR produces significant benefits on psychological health outcomes, particularly in reducing levels of perceived stress, increasing mindfulness and reducing depression scores. However, the studies reviewed have suffered from a range of methodological limitations that will now be discussed.

Randomisation process

Of the nine RCT studies included, almost all (n = 8) provided descriptions of the randomisation process in terms of the method used to generate allocation sequence (i.e. drawing a number and random number generation). However, only one of these eight studies (de Vibe et al., 2013) reported the process of allocation concealment and implementation. Song and Lindquist's (2015) study researching the effectiveness of MBSR in Korean nursing students omitted any information regarding the process

employed for randomising participants into the study groups. Caution thus needs to be exercised when considering the evidence of MBSR effects in nursing student populations. The failure to provide sufficient information on the process of randomisation may lead to bias when estimating the intervention effects of a particular intervention (Moher et al., 2010).

Samples

In most of the studies reviewed, the sample population used to evaluate the effectiveness of MBSR was limited to female Caucasian students; only two of the studies sampled Korean females. This potentially reduces the generalisability of the findings to non-Caucasian populations or to males.

Eleven of the 16 studies reviewed failed to indicate the calculations undertaken to identify the required sample size to ensure sufficient statistical power; of these 11 studies, sample sizes were determined based on a number of participants who were willing to take part in the studies. Only five RCT studies employed a formal power calculation to determine sample sizes for their studies (de Vibe et al., 2013; Erogul et al., 2014; Jain et al., 2007; Kang et al., 2009; Song & Lindquist, 2015). Total sample sizes for all reviewed studies were typically between 30 and 100; with three studies having sample sizes of less than 30 (Beddoe & Murphy, 2004; Demarzo et al., 2014; Shapiro et al., 2012). Only four studies were undertaken with a sample greater than 100 (Bergen-Cico et al., 2013; de Vibe et al., 2013; Jain et al., 2007; Rosenzweig et al., 2003). Most studies included in this review reported relatively small sample sizes. Under such conditions the studies may have lacked the statistical power to detect a relationship between the MBSR intervention and the outcome variables.

Although some studies used relatively large samples, in these studies there were several concerns in relation to the research design employed. These include: 1) a non-randomised design (Bergen-Cico et al., 2013; Rosenzweig et al., 2003); 2) the offering of the MBSR intervention as an elective subject that enabled participants to engage in the intervention as a component of their course work rather than requiring them to make an extra time commitment to participate in the intervention (Bergen-Cico et al., 2013; Rosenzweig et al., 2003); and 3) data collection conducted over a period of 5 years (Rosenzweig et al., 2003).

Control group

Three of the 16 studies had no control group with which to compare the outcomes for participants completing the MBSR intervention (Beddoe & Murphy, 2004; Demarzo et al., 2014; Shapiro et al., 2012). Although these studies reported statistically significant improvements in various psychological health outcomes, it is not possible to know whether the reported changes were attributable to the MBSR intervention itself or merely to the passage of time. The majority of the studies (13 of 16) utilised a betweengroup design; only one of these studies failed to provide details of the control group employed in their study (de Vibe et al., 2013). The remainder (n = 12) utilised a range of different control groups - waiting-list, no-treatment and active control. In those studies using a waiting-list control group (Jain et al., 2007; Oman et al., 2008; Shapiro et al., 2011; Shapiro et al., 2008; Shapiro et al., 1998; Song & Lindquist, 2015), participants were placed on a waiting list and exposed to the MBSR intervention only after the intervention had been fully administered to the experimental group. While this approach is appealing ethically, it may present pragmatic difficulties (Polit & Beck, 2014) and fail to control for nonspecific factors in a control group (such as group support, instructor's care, expectancy effect) (Chiesa & Serretti, 2009). Such an approach may cause favourable bias as these participants were interested in MBSR (Praissman, 2008) and may positively anticipate participation in the intervention, possibly influencing outcome measurement in a positive direction.

The no-treatment control, often referred to 'treatment as usual' was employed in four studies (Barbosa et al., 2013; Erogul et al., 2014; Kang et al., 2009; Young et al., 2001). Although this approach is less expensive and less time consuming than other control groups, it may have limitations such as the challenge of maintaining the participation of the control group throughout the entire study duration and ethical concerns related to failure to provide an intervention to those participants in the control group. A further two studies likewise used a control group that received no treatment. In these two studies the MBSR intervention was delivered for one group via an elective seminar course (Rosenzweig et al., 2003) and for the other an elective health course (Bergen-Cico et al., 2013). The parallel control groups employed were students who enrolled in other courses unrelated to MBSR run over the same time period and involving the same number of sessions as the MBSR course.

Three of the reviewed studies delivered an alternative intervention to the control group and compared the outcomes with those of with MBSR treatment group. Compared to other forms of control groups, utilisation of an active control could enhance the assessment of nonspecific factors (Bishop, 2002), and more rigorously test the effects of MBSR as an intervention (Baer, 2003). Jain et al. (2007) utilised a somatic relaxation intervention with a different instructor as an active control, ensuring the class size, session length and number of sessions were the same as for the MBSR intervention. Oman et al. (2008) and Shapiro et al. (2008) used Easwaran's Eight-Point Program (a meditation-based program) as an active control intervention against which to compare the outcomes for the MBSR group. These studies showed similar findings for both the MBSR and the active control intervention producing beneficial effects on treatment outcomes. However, the outcome for the MBSR group showed a greater effect size for positive mood states than that of the relaxation control group (Jain et al., 2007).

Blinding

The term 'blinding' is defined by Moher et al. (2010) as withholding information about the intervention assignments from individuals (i.e. participants, intervention providers, data collectors and data analysts) who may potentially introduce bias into the study through this knowledge. These people may respond differently if they are aware of the assigned intervention, for example an un-blinded outcome assessor may provide encouragement to the participant during completion of outcome measurements. As MBSR is an educational group intervention, it is often difficult to blind either participants or researchers (Hulley, Cummings, Browner, Grady, & Newman, 2013; Mars & Abbey, 2010). However, Moher et al. (2010, p. 15) has suggested that "regardless of whether blinding is possible, authors can and should always state who was blinded". Of the sixteen studies included in this review only two studies (Kang et al., 2009; Shapiro et al., 1998) reported that they utilised research assistants who undertook the administration of the outcome measurements while blinded to the allocation of participants and were not involved in the delivery of the intervention. Four studies (de Vibe et al., 2013; Oman et al., 2008; Shapiro et al., 2011; Shapiro et al., 2008) used an electronic assessment of the outcomes which enabled the assessment to remain free from possible influence by outcome assessors.

Self-report measures

All studies in this review used psychological self-report scales as outcome measures; such measures have the potential for responses to be influenced by participants' perceptions of socially desirable responses (Chiesa & Serretti, 2009). This effect might result from a positive relationship between participants and researchers established during the delivery of the intervention and/or any particular process or stage of the study. As a result participants may wish to please the researchers and complete self-administered scales accordingly (Shapiro et al., 1998). In the studies reviewed, this potential bias may well be compounded by the failure to use blinded assessors to administer outcome measures.

2.4 SUMMARY OF LITERATURE REVIEW

The purpose of this review was to evaluate existing evidence for the effectiveness of MBSR on the psychological health of university students, from studies published from January 1979 to January 2015. A total of 16 studies met inclusion criteria and were included in the literature review. The outcomes of the critical review of the literature can be summarised in relation to the guided questions for the review:

1. Do the reviewed studies report on different formats and time frames for the MBSR programs evaluated?

Only one study utilised the standard MBSR program as an intervention. The remainder modified the number and length of sessions and the content of the MBSR intervention. Such modifications impact upon the capacity to determine the effectiveness of the main components of MBSR. It is also noteworthy that the qualifications and professional experience of the MBSR instructor/s were not provided in most studies.

2. Can MBSR improve psychological health? And what are the common psychological outcomes measured by the reviewed studies?

Regardless of the study design employed, the findings consistently demonstrated that MBSR produced significant effects in increases in positive psychological health (mindfulness, self-compassion, hope, empathy, spirituality, and resilience) as well as decreases in negative psychological outcomes (stress, anxiety, depression, mood states, rumination, and burnout). The outcomes were measured using a wide range of valid and

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reliable psychological self-report scales. Of these outcomes, stress was the most common outcome assessed. Mindfulness, anxiety, depression and self-compassion were also measured by several studies. The reported evidence supports claims for the long-term beneficial effects of MBSR on stress, mindfulness, and anxiety, using multiple time-point assessments ranging from a 3-week to 1-year follow-up. However, none of the studies investigated the effect of MBSR on self-esteem in university students.

3. What are the methodological issues in studies undertaken to date that should be addressed in future studies?

Many of the studies reviewed had significant methodological issues such that caution is required for those wishing to utilise these findings to support the effectiveness of MBSR as an intervention in the university student population. The issues identified included study populations involving largely female participants, Caucasian students, insufficient information on the process of randomisation, relatively small sample sizes, use of waiting-list and no-treatment control groups, and lack of blinding in the administration of self-report measures. Accordingly, future research should employ research designs ensuring the inclusion of a large and more representative sample; implementation of a sound randomisation procedure; use of a blinded research assistant for data collection; utilisation of an active control group and the inclusion of validated objective measures.

2.5 JUSTIFICATION OF THE STUDY

The decision to conduct this study was based on a number of considerations. It is well recognised that nursing students may experience high levels of stress over the course of their university studies. Strong evidence has demonstrated that high stress levels may lead to depression, lowered self-esteem and decreased academic performance in Thai nursing students (Jomsri, 2009; Ross et al., 2005; Tunkoon, 1999; Vatanasin, 2005). The results of the reviewed studies indicate that participation in MBSR may decrease stress and depression and increase mindfulness in university student populations including nursing students. However, important methodological limitations were evident in all the studies reviewed. Moreover, there are no reported studies addressing the use of MBSR in the Thai context; and only two Korean studies (Kang et al., 2009; Song & Lindquist, 2015) that evaluate the effectiveness of MBSR in non-Western settings. Accordingly, the present study set out to design and implement a randomised

controlled trial to evaluate the effects of a standardised MBSR program on primary outcomes – perceived stress, depression, self-esteem, and mindfulness, and secondary outcomes – utilisation of health and counselling service and grade point average in Thai nursing students. The RCT study also tested whether either stress or mindfulness mediated the outcomes of MBSR intervention. A qualitative component examining participants' experiences of participation in the MBSR program was included to expand upon the RCT results. It was anticipated that the results of the study would indicate the extent to which the MBSR program can decrease perceived stress and depression, and increase self-esteem and mindfulness in Thai nursing students. The study also aimed to evaluate the social and cultural acceptability of this psychosocial intervention in the Thai context.

CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

Chapter two provided a critical review of research literature examining the effectiveness of MBSR among university students on specific outcome variables – stress, depression, and mindfulness; and discussed methodological considerations relevant to implementation of MBSR in this population.

This chapter describes the methodologies or what is often referred to as the research approaches (Graue & Karabon, 2013) and research designs implemented to undertake the present study. To begin, the chapter explains the reasons for using the chosen research approaches and the philosophical underpinnings of each. Next, consideration is given to the characteristics of each research design (RCT, qualitative descriptive design and embedded experimental mixed methods design) used in the study as well as the strengths and limitations of each. The chapter concludes with a summary of the procedures used in the study overall.

3.2 RESEARCH APPROACHES

The term 'research approach' is used to denote the specific conceptions of all aspects of inquiry (Graue & Karabon, 2013), including philosophical assumptions, research designs (procedures of inquiry), and research methods of data collection, analysis, and interpretation (Creswell, 2014). Of primary importance to the choice of research approach is the nature and type of the research question (Creswell, 2014; Houser, 2015).

3.2.1 Rationale for using the chosen research approaches

The present study sought to evaluate the impact of an 8-week MBSR program undertaken with Thai nursing students. The primary objective was to examine the effects of the MBSR program on stress, depression, self-esteem and mindfulness. This aspect of the research addressed the research question: 'Can an MBSR program reduce perceived stress and depression and enhance self-esteem and mindfulness in Thai nursing students participating in the MBSR program?' A question calling for data demonstrating the effectiveness of an intervention based on specific outcomes requires a quantitative approach (Creswell, 2014). Such a predictive question investigates a causeand-effect relationship among two or more variables (DePoy & Gitlin, 2011); and a true experimental design or RCT is needed to answer the question (Houser, 2015).

Since the standard MBSR program was delivered to a population of Thai nursing students in Thailand - a very different socio-cultural context to that of Western countries in which the MBSR was developed and initially implemented, a secondary objective was added to the study. That was to explore participants' experience of involvement in the MBSR program. This latter aspect of the research addressed the question: 'How do Thai nursing students taking part in the MBSR program describe their experience of participation in the program after completion of the program?' This question focused on understanding participants' experiences of a particular phenomenon, pointing to the need for a qualitative approach (Streubert & Carpenter, 2011). In this study, a qualitative descriptive design was embedded, or nested, within the RCT to interpret how the qualitative results provide enhanced understanding of the experimental outcomes. It was intended that integration of the two sources of data (quantitative and qualitative) would provide an in-depth understanding of the MBSR program, its implementation and outcomes, thereby assisting with the future application of the program. Thus, the overall research approach used in the study was mixed methods comprising an RCT and embedded qualitative descriptive study; another way of thinking about this approach is as an embedded experimental mixed methods design.

3.3 PHILOSOPHICAL ASSUMPTIONS UNDERPINNING THE CHOSEN RESEARCH APPROACHES

Philosophical assumptions that drive the methodology of a study are rooted in what have been referred to as *paradigms* (Houser, 2015) or worldviews (Creswell & Plano Clark, 2011). Thomas Kuhn, a key figure in the philosophy of science, used the term paradigm in two ways: in relation to the overall group of beliefs, values and techniques shared by specialists within the scientific community; and as an accepted model or pattern that can replace explicit rules as a basis for a solution (Kuhn, 1996, p. 175). For Guba (1990) the term referred to a basic belief system of researchers that guides action to conduct research and consists of three components: ontology, epistemology, and methodology. In definitional terms ontology refers to the nature of reality;

epistemology to what counts as knowledge, how knowledge claims are justified and the relationship between the researcher and that being researched; and methodology to the process of conducting research (Creswell, 2013; Creswell & Plano Clark, 2011). These three elements will be used as a framework to describe the philosophical assumptions underpinning the research approaches used in the study.

3.3.1 Quantitative research approaches

Quantitative research approaches are best thought of in relation to the methods and techniques of conventional science. They are based on the positivist and postpositivist paradigms, the latter being a modification of positivism. Conventional *positivisim* works within a *realist ontology*. The key assumption here is that a single reality exists 'out there' separately to our perception of it (Rolfe, 2013) and is governed by natural laws and theories (Guba, 1990); and can be measured and studied as facts (Guba & Lincoln, 2005). Such realism leads to an objectivist/dualist epistemology - researchers can objectively observe and measure reality with 'a distant and non-interactive posture' (Guba, 1990; p. 20). In other words, researchers and what is being studied are independent (dualism) enabling unbiased or detached observations and value-free inquiry, so as to obtain true knowledge of objects in the world (Lincoln & Guba, 1985). In order to achieve total objectivity, positivist researchers thus rely on scientific method or empirical experimentalism methodology (Guba, 1990). Empirical tests must be undertaken under strictly controlled conditions and systematic methods must be used to eliminate bias and confounding factors, and to gain objectivity (Christensen, Johnson, & Turner, 2015). Also, following belief in a singular reality, an explicit theory or theoretical framework is used to explain a specific phenomenon (a single reality) in terms of causal relationships/determination. This contributes to the purpose of research being to predict and control natural phenomena (Guba, 1990) using the hypothetical deductive method. That is, researchers deduce a phenomenon of interest based on a priori theory into specific variables and hypotheses; and also reduce operationalised variables into numerical data to empirically test whether the hypothesis is supported and to generalise true findings to larger populations (Creswell & Plano Clark, 2011; Guba & Lincoln, 2005; Patton, 2002; Rolfe, 2013).

The basic beliefs supporting *postpositivism* are adjusted slightly from those of positivism and tend to be more flexible and neutral. Ontologically, postpositivism

represents a shift from a naïve realist to *critical realist ontology*. For the critical realist there is an independently single reality, but it can only be incompletely understood because of extraneous factors and a lack of absolutes in nature (Guba, 1990; Guba & Lincoln, 2005). Epistemologically, those influenced by postpositivism believe in *modified objectivist epistemology* – objectivity is considered to be a regulatory ideal that can only be approximated with findings probably being true (Guba, 1990). However, researchers should distance themselves from research subjects to gain objectivity (Guba & Lincoln, 2005). Methodologically, postpositivists still use the scientific method to test a priori theory based on causal relationships, but acknowledge the limitations of the positivist paradigm to achieve realistic and objective inquiry. Therefore, *modified experimental/manipulative methodology* is applied to move as close to the truth as possible by using methods reducing human bias (Guba & Lincoln, 2005); undertaking research in more natural settings, using statistics to interpret findings accurately; and increasing multiple sources of inquiry such as rigorously defined qualitative methodologies (Guba, 1990; Lincoln et al., 2011).

Currently, postpositivism is considered to be the most common philosophical stance for quantitative researchers because it modifies some aspects of realism in response to criticism raised by anti-realists (Creswell & Plano Clark, 2011; Rolfe, 2013). A postpositivist philosophical stance has informed the quantitative approach used in the present study. RCT or a true/classical experimental design is considered the strongest approach for testing the effectiveness of a treatment due to the rigorous control of variables (Burns & Grove, 2011; Grove, Gray, & Burns, 2015). This approach has been used in answering the main research question of the study. A postpositivist philosophical stance informs the specific methodological framework of the RCT used in this study as follows:

1. The phenomenon of interest was the effects of the MBSR program.

2. The researcher worked deductively from the 'top' down, from a theory to hypotheses to data to add to or contradict the theory (Creswell & Plano Clark, 2011).

3. The research aimed to predict the causal relationships of interest, based on a priori theory (previous research findings), between the cause or independent variable (MBSR program) and the outcomes or dependent variables (stress, depression, self-esteem, and

mindfulness). Four outcome variables were measured by using four valid and reliable instruments. The cause-effect relationships between variables were posed in terms of research hypotheses.

4. The research was carried out with human subjects (Thai nursing students) in a reallife setting (School of Nursing), rather than a strictly controlled laboratory setting. Consequently, it is well suited to the study's external validity, or generalizability of the findings (Buckwalter, Mass, & Wakefield, 1998). Although in such a setting it was difficult to control extraneous variables, which are factors other than the independent variables that could impact on the dependent variables, the RCT was designed to test hypotheses under experimental conditions which controlled for all possible extraneous variables.

5. The hypotheses were tested statistically using appropriate inferential statistics depending on what the hypotheses predict, the level of measurement, and assumptions related to the data.

Characteristics of RCT

The RCT is regarded as the 'cornerstone of scientific research'(Ingersoll, 1982, p.625 cited in Buckwalter et al., 1998) and as the 'gold standard' for intervention studies (Polit & Beck, 2014). An RCT design is characterized by the three following elements (Buckwalter et al., 1998; Burns & Grove, 2011; Christensen et al., 2015; DePoy & Gitlin, 2011; Pierce, 2013; Polit & Beck, 2014):

1. Randomization is the process in which subjects are assigned by equal probability to an experimental group (the group receiving the intervention) or a control group (the group not receiving the intervention; but receiving usual methods, a placebo or no intervention). Random assignment can be undertaken by a coin toss, a random number table or the computerized generation of random numbers.

2. *Manipulation* is the process in which the researchers manipulate the intervention (independent variable) being administered to the experimental group so that its effect on the dependent variable can be measured.

3. *Control* is the set of action processes implemented to minimise the effect of extraneous variables on the outcomes of intervention. The methods to establish control

typically are randomization, active manipulation, use of a control group, and control of the experimental conditions.

Details of the RCT methods conducted in this study will be explained more fully below in the section 4.2 (RCT design) of Chapter Four.

Strengths and limitations of RCT

The characteristics of the RCT support its strengths. That is, it provides the most rigorous test for hypotheses of causal relationships, and yields the highest quality evidence about the effectiveness of the intervention (Houser, 2015; Polit & Beck, 2014). In other words, the main advantage of the RCT is the degree of confidence with which cause-effect relationships can be inferred (Buckwalter et al., 1998). In spite of its clear strengths, the RCT has some limitations especially in relation to human experimentation. First, a number of human characteristics and health care aspects cannot be deliberately manipulated, such as gender and health habits (Christensen et al., 2015; Houser, 2015). Second, many variables cannot be ethically manipulated (Polit & Beck, 2014). Third, based on its reductionism, translation of variables into numerical data might entail loss of information (Rolfe, 2013). Lastly, increasing control might lead to more artificial study outcomes and limitation of generalisability of findings (Houser, 2015). A potential limitation of the RCT used in this study was that taken alone the findings might provide an insufficient view of the human engagement with the intervention (Christensen et al., 2015). For instance, was it acceptable to the participants culturally and also in terms of time commitment and personal comfort. The RCT might also provide limited understanding of the contexts or perspectives of participants (Creswell, 2015; Johnson & Onwuegbuzie, 2004) that cannot completely be expressed with numbers (Dombro, 2007). Therefore, to enrich and/or expand upon the RCT results, a qualitative approach was included to address the secondary research question of this study.

3.3.2 Qualitative research approaches

Qualitative approaches are influenced by different paradigms to those informing quantitative approaches. They are typically rooted in constructivism (Creswell, 2014), which is sometimes also referred to as naturalism (Lincoln & Guba, 1985) or interpretivism (Lincoln et al., 2011). Regarding ontology, constructivists take a position

of *relativism* – multiple realities exist and are dependent on the individual in terms of mental constructions developed socially and experientially (Guba, 1990). As such, researchers must participate in the research process and interact with research participants to construct knowledge of their 'reality' (Lincoln et al., 2011). This relationship has been referred to as *subjectivist epistemology*. Accordingly, the purpose of research based on constructivism is to understand and interpret the meaning of phenomena (Lincoln et al., 2011), which rely as much as possible on the participants' views of the phenomenon being studied (Creswell, 2014). To achieve this research aim, interpretive and dialectical methodological procedures are applied via the research process (Guba, 1990). *Interpretive and dialectical methodology* relies on naturalistic inquiry which is characterised by an openness to whatever emerges naturally, rather than manipulation and control (Patton, 2002). Examples of naturalistic inquiry are analysed inductively to generate themes/patterns of meaning (Creswell, 2014; Patton, 2002).

A constructivist philosophical framework underpins and provides the methodological framework of the qualitative descriptive design used to answer the secondary research question of this study, as follows:

1. The phenomenon of subjective meaning was the participants' experiences of participating in the MBSR program.

2. Based upon a belief in multiple realities and subjectivism, the researcher facilitated a focus group interview with open-ended questioning as a form of naturalistic inquiry to seek a multiplicity of views and experiences from participants. This activity reflects a belief in the *'human instrument'* (Lincoln & Guba, 1985). That is, the researcher used herself as the key data-collection instrument.

3. The researcher worked inductively from the 'bottom' up (Creswell & Plano Clark, 2011), using the participants' perspectives or the 'emic' or insider's perspective to build broader themes and generate a comprehensive set of themes regarding the experience of participation in the MBSR program.

4. As 'inquiry is value-bound' (Lincoln & Guba, 1985, p. 37), the researcher positioned herself in the research so as to acknowledge how her interpretation of findings was

shaped by her own experiences and background, particularly in the context of Thai culture and understanding of mindfulness.

Characteristics of qualitative descriptive design

The qualitative descriptive design can be thought of as the basic or generic qualitative study (Caelli, Ray, & Mill, 2003; Merriam, 1998). It exhibits similar characteristics to other qualitative approaches. That is, it is based on the general premises of naturalistic inquiry (Sandelowski, 2000), which imply a commitment to study a phenomenon as it occurs naturally (Lincoln & Guba, 1985). In addition to naturalistic inquiry, the other characteristics of the qualitative descriptive design are the goal of eliciting understanding and meaning, the researcher as a primary instrument of data collection and analysis, the use of fieldwork or a natural setting, an inductive orientation to analysis, and richly descriptive results (Merriam, 1998). In terms of difference, the qualitative descriptive design does not align with specific qualitative approaches or disciplinary traditions (e.g. phenomenology) (Caelli et al., 2003; Polit & Beck, 2014). Rather, it is founded in existing knowledge and a thoughtful linkage to the work and clinical experience of others in the field (Neergaard, Olesen, Andersen, & Sondergaard, 2009). Additionally, the qualitative descriptive design differs from other theory-driven qualitative approaches in that it produces data-near analysis and low-inference interpretation, as well as presenting straight forward comprehensive summaries of an experience or an event in everyday language similar to the participants' own language (Neergaard et al., 2009; Polit & Beck, 2014; Sandelowski, 2010). This contrasts with other qualitative approaches which focus on an in-depth interpretive description linked to underpinning theories. Thus, the qualitative descriptive design provides a combination of sampling, collection and analysis techniques organised in a way that best fits the data (Sandelowski, 2000). In this study, a qualitative descriptive design was chosen to provide a straight forward description of the experience of Thai nursing students who participated in MBSR program, using everyday terms.

Strengths and limitations of qualitative descriptive designs

Similar to the strengths of any qualitative approach, a qualitative descriptive design is useful for the research purposes of exploration and description of people's personal experiences of phenomena (Christensen et al., 2015; Johnson & Onwuegbuzie, 2004), and discovering essences that are difficult to express using numbers (Dombro, 2007). A specific strength is its straightforwardness (Smythe, 2012). That is, this approach simply describes research findings in everyday language (Sandelowski, 2010) without being guided by the jargon of an established discipline or methodological tradition (Caelli et al., 2003; Polit & Beck, 2014). Such an approach seeks to facilitate gaining a first insight into the informants' views of a particular topic (Neergaard et al., 2009). However, as qualitative results contribute to understanding a phenomenon in a particular situation, they typically have limited generalizability (Burns & Grove, 2011). In addition, the findings are more easily influenced by the researcher's personal biases (Johnson & Onwuegbuzie, 2004). Moreover, different qualitative researchers may provide different interpretations of the phenomena being studied (Christensen et al., 2015) due to the differing perspectives of individuals involved. These limitations, however, may be minimised using strategies to enhance the trustworthiness will be discussed in greater detail further on in this chapter.

3.3.3 Mixed methods approaches

Pragmatism or the pragmatist paradigm is most associated with mixed method approaches (Creswell, 2014; Tashakkori & Teddlie, 2010). It derives from the work of the classical pragmatists (e.g. Charles Sander Peirce, William James, and John Dewey) (Johnson & Onwuegbuzie, 2004) and contemporary pragmatists such as Richard Rorty and Michael Quinn Patton. In terms of ontology, for the pragmatist there are both singular and multiple realities (Creswell, 2011) that are oriented toward solving practical problems in the real world (Feilzer, 2010). Epistemologically, pragmatists thus value both objective and subjective inquiry (Creswell & Plano Clark, 2011) to derive knowledge that best represents reality (Creswell, 2014). Consistent with this, Biesta (2010) posited intersubjectivity as an alternative to the either-or of subjectivism and objectivism. Moreover, pragmatism is problem centred – focusing on a research question rather than methods (Creswell & Plano Clark, 2011) as well as outcomeoriented methods of inquiry (Johnson & Onwuegbuzie, 2004). Therefore, pluralistic and practical approaches that reflect both deductive and inductive evidence are used as methodologies to understand the problem under study (Creswell, 2013; Patton, 2002). Teddlie and Tashakkori (2010) used the term *methodological eclecticism* in selecting and integrating synergistically the most appropriate techniques from quantitative,

qualitative and mixed methods to investigate a phenomenon of interest. Accordingly, pragmatic approaches rely on an abductive process (Morgan, 2007), or cyclical approach (Teddlie & Tashakkori, 2010) which moves back and forth between induction and deduction, or from qualitative data to quantitative data, and vice versa.

However, mixed methods researchers have taken different stances regarding the philosophical assumptions implicit in their research. Following Creswell and Plano Clark (2011) four main stances may be applied to mixed methods research.

1. First, some hold that a single paradigm provides a foundation for mixed methods research such as pragmatism, transformative approaches, and critical realism.

2. Second, others believe that multiple paradigms based on how the researcher attempts to know and value the social world might be used in a mixed methods study, for example a dialectical perspective.

3. Third, multiple paradigms best related to the type of mixed methods design used are embraced to inform mixed methods research.

4. Fourth, paradigms underpinning mixed methods research depend on the perspectives held by a community of scholars.

In the present study, the third stance, paradigms related to the type of mixed method design, was used as a philosophical framework for the overall mixed methods approach. This was due to the belief of the researcher that paradigms can change during a study and be linked to different approaches in the study. The paradigms used for each approach, thus, must be respected and written about (Creswell & Plano Clark, 2011; Morse, 2010) so that the strengths of each paradigmatic position can be realised. This stance can be supported by a belief in *paradigm pluralism* (Teddlie & Tashakkori, 2010), that is, a variety of paradigms might serve as the underpinning philosophy for mixed method research. To delineate the philosophical assumptions more clearly, the main characteristics and procedures for the mixed methods design used in this study will now be outlined.

Characteristics of the embedded experimental mixed methods design

The mixed methods approach is defined by Creswell (2015) as a research approach in which the researcher collects both quantitative and qualitative data, integrates the two,

and then interprets them based upon a rationale that aims at combining the strengths of both sets of data to address the research questions. The current study involved both primary and secondary research questions, for which different approaches (quantitative and qualitative) were employed to address each question. Specifically, the qualitative data plays a supplemental role to answer the secondary research question within the predominantly quantitative experimental design. Accordingly, the type of mixed methods design used is called an 'embedded experimental mixed methods design' (Creswell & Plano Clark, 2007, 2011); or 'embedded integration approach' (Curry & Nunez-Smith, 2013); or 'the intervention design' (Creswell, 2015). The first term will be used throughout this thesis as it more clearly specifies characteristics of the research design utilised.

The procedures of the embedded experimental mixed methods design consist of two main foci. First, the timing of the collection and analysis of the qualitative (supplementary) data within a largely experimental study; and second, the reasons for adding in the supplementary data (Creswell & Plano Clark, 2011). The two foci are logically related to each other. Considering the first focus, the qualitative component can be added before, during, or after the experiment (Sandelowski, 1996); or some combination of all three (Creswell, 2015). In this study, qualitative data collection occurred at week 8 after completion of the 8-week MBSR intervention. That is, the implementation of the qualitative strand involved sequential timing – after the experiment. While quantitative data collection also occurred at 16 and 32 weeks, these time points did not include a qualitative data collection component, due to the limited timeframe of the PhD candidature and associated tight timeframe for data collection in Thailand. In relation to the timing of data analysis, the quantitative and qualitative data set were analysed separately to address the different research questions. After that, the supplementary qualitative findings were integrated into the core quantitative findings at the 'results point of interface' (Morse, 2010). The timing of data collection and analysis described above related to the second focus - reason for adding the qualitative data into the experimental trial. The rationale for this embedded study was that the qualitative results were used to complement the quantitative results by providing richer data on participants' experiences regarding their involvement in the program. The intention was also to expand understanding of the MBSR program process and to explain the outcomes in the words of participants more broadly and deeply than the statistical

results alone would yield (Creswell, 2015; Kettles, Creswell, & Zhang, 2011). In terms of the priority of the research questions and methods, the embedded qualitative component was secondary in the study. Nevertheless, this component was intentionally employed as an important and valued aspect of the overall purpose of the study.

The details of the embedded experimental mixed methods design outlined above linked to the philosophical assumptions guiding the overall research approach. As the study began with the primary quantitative approach – an RCT, postpositivist assumptions underpinned the specific methodological framework informing that component of the study. After the completion of the MBSR program, the study then moved to the qualitative descriptive component using a focus group to collect data. Accordingly, the underpinning paradigm shifted to constructivism to provide a methodological framework for this qualitative work. At the results point of interface, where the qualitative findings were integrated into the main quantitative findings, a pluralistic approach was used to more deeply understand the MBSR program process and outcomes by integrating both quantitative and qualitative databases. A pragmatic approach thus informed the methodological eclecticism at this phase.

Strengths and limitations of the embedded experimental mixed methods design

There are several advantages specific to the embedded experimental mixed methods design. Firstly, this design can be used to address different questions within the same study using approaches guided by different assumptions (Plano Clark et al., 2013). Consequently, a broader and more complete range of research questions can be answered (Johnson & Onwuegbuzie, 2004). Secondly, the synergistic integration of the RCT and qualitative findings can provide stronger evidence for the conclusions drawn and enhanced understandings; and produce a more complete knowledge contributing to theory and practice (Johnson & Onwuegbuzie, 2004). Thirdly, the design is rigorous and popular in the health sciences because the embedded qualitative data extend the RCT results, rendering these more believable in regard to the human element of the research project (Creswell, 2015). In addition, this approach provides for the application of specific interventions in the real-life contexts of the study participants (Plano Clark et al., 2013; Sandelowski, 1996). Finally, it has been argued that this design is cost-effective in that increased knowledge is generated through methodological integration within a single project (Plano Clark et al., 2013).
However, claims surrounding cost-effectiveness have been challenged on the basis that mixed methods approaches can also be more time consuming and resource intensive (Johnson & Onwuegbuzie, 2004). An additional challenge in conducting an embedded experimental mixed methods design is researcher competence in integrating the results when the two approaches are used to answer different research questions (Creswell & Plano Clark, 2011). To deal with this, this research was undertaken following the integration strategies suggested by Creswell and Plano Clark (2011) and Morse (2010). Accordingly, the RCT data and the focus group data were analysed separately and the two datasets were also kept apart. The RCT results formed the basis or analytic core of the overall results, and then the textual results of the qualitative supplementary component were imported into the RCT results to complement and further explain these.

In summary, the details of the embedded experimental mixed methods design implemented for the overall study can be summarised according to the four key decisions (Creswell & Plano Clark, 2011) as illustrated in Figure 2 (Adapted from Creswell and Plano Clark (2011) and Morse (2010)), with the following explanation:

1. *The level of interaction between the quantitative and qualitative strands*. The study has 'an independent level of interaction'(Greene, 2007) because the two strands were implemented independently – specifically the research questions, data collection and data analysis. The findings were integrated only at the point of overall interpretation of the study findings.

2. *The priority of the quantitative and qualitative strands*. The study utilised a quantitative priority, or quantitatively driven design (Morse, 2010); and the qualitative approach was used in a secondary role.

3. *The timing of the quantitative and qualitative strands*. The study was implemented sequentially with the qualitative data collection occurring after the completion of the intervention program.

4. *Where and how to mix the quantitative and qualitative strands*. The two strands were mixed at the level of design using an embedded mixing strategy i.e. embedding the supplemental qualitative strand within the larger RCT design.

3.4 SUMMARY

This chapter has described the methodology of the embedded experimental mixed methods design implemented for the overall study as well as the common elements of both the RCT component and the embedded qualitative design. In the following chapter, the methods used to conduct the RCT and qualitative design, particularly recruitment of participants, the procedures of data collection and analysis, and procedures for ensuring the rigour of the study will be presented.



Figure 2: Procedure of the overall study

CHAPTER FOUR: RESEARCH METHODS

4.1 INTRODUCTION

Chapter three discussed the methodology of the study overall. This chapter describes methods used to undertake the randomised controlled trial and the qualitative descriptive component. The chapter is divided into three sections. The first section presents information about methods and procedures for the RCT. Details of the study setting, participants, implementation and intervention are provided. Consideration is then given to outcome measures, pilot study, data collection and analysis, and establishing the rigor of the RCT. The second section regarding methods for the qualitative study begins by describing the study setting, participants, and data collection and analysis. Procedures for ensuring trustworthiness of the qualitative study are also provided. Ethical considerations are presented in the final section of the chapter.

4.2 RCT DESIGN

4.2.1 Trial study design

The study employed a parallel group randomised controlled design and was prospectively registered with the International Standard Registered Clinical/soCial sTudy Number (www.controlled-trials.com/ISRCTN62401721) where all the trial outcomes and analysis reported in this thesis were pre-specified. The RCT will be reported in accordance with the requirements of the CONSORT (CONsolidated Standards Of Reporting Trials) 2010 guidelines (Moher et al., 2010; Schulz, Altman, & Moher, 2010).

In terms of the structural relationship of the RCT design, the notation system of Campbell and Stanley (1973) has been widely adopted to diagram the design as shown in Figure 3. X symbolises the independent variable, O the dependent variable, and R denotes random sample selection and assignment.



Figure 3: Campbell and Stanley's RCT design

However, DePoy and Gitlin (2011) indicated that it is frequently difficult and inappropriate for health professionals to select a sample from a larger, predefined population based on random selection. Rather, participants typically enter studies on a volunteer basis, and are then randomly assigned to either the experimental or the control group. Accordingly, the symbol 'r' is substituted for 'R' to refer to random group assignment in the absence of random sample selection. The modified notation system of DePoy and Gitlin (2011) as illustrated in Figure 4 was used to diagram this RCT study. The researcher undertook the parallel group design in which participants were randomly assigned (r) to either the experimental condition (intervention) or control condition. Before the intervention, all participants were tested on the dependent measures (O) – perceived stress, depression, self-esteem, and mindfulness. Only the experimental group received the independent variable (X) – the 8-week Mindfulness-based Stress Reduction (MBSR) program. After the intervention, all participants were tested on the dependent variables (O).



Figure 4: DePoy and Gitlin's RCT design

To assess the efficacy of the MBSR program, the dependent or outcome measures were to be administered to all participants at baseline (occurring 1 week prior to commencement of intervention delivery) and 8 (immediately following completion of the intervention), 16 and 32 weeks following baseline data collection.

4.2.2 Participants and recruitment

The target population for this study were nursing students aged 18-20 years, studying in the first and the second years of the nursing program of the School of Nursing, the University of Phayao, Thailand. In Thailand, students typically apply to study nursing after finishing Grade 12 of secondary school. Therefore, first year nursing students usually commence their studies aged 18-19. Consistent with this, first and second year nursing students of the target university are aged between 19 and 20 years, and approximately 95 % are female (Student Management System, 2012). The nursing curriculum of the target university requires that first and second year student learning takes place mainly in conventional classrooms, with practice components taking place in the learning resource centre. The third and fourth years of the curriculum are largely undertaken in hospital placements of a month or more duration. The pattern of student release required for the senior undergraduate years of the nursing curriculum would thus have made it difficult for students to engage with the study. Importantly, a number of studies have found that the level of stress experienced by nursing students varies according to the year of study (i.e. first year, second year, third year) (Lo, 2002). Similar patterns have also been identified in relation to depression (Vatanasin, 2005); and to self-esteem (Lo, 2002). In addition, Thai nursing students were most likely to experience stress in their first year of study (Naiyapatana et al., 2008); Insawang, Sornketsatrin, and Paenoi (2005) also found that second year Thai nursing students experience higher stress levels than their counterparts in the more senior years of study. Similarly, the level of depression of first and second year Thai nursing students has been shown to be higher than that for those in the third and fourth years (Vatanasin, 2005). Therefore, students studying in the first and second years of the nursing program were included in this study. In addition, all students including those recruited to the study, who apply for admission to the University of Phayao are required to provide a medical certificate confirming that the applicant has normal mental status and no history of mental illness (University of Phayao, 2015). The inclusion criteria for the study were as follows:

Inclusion criteria: 1) nursing students; 2) aged 18-20; 3) studying in the first and second years of the nursing program; 4) no history of mental illness.

Information about the study was distributed to potential participants in two ways: 1) a brief description of the purpose, what is involved in the study and the Thai language version of the information sheet and consent form were provided for the potential participants in a face to face meeting conducted by research assistant A (Appendix 1). Research assistant A is an academic staff member in the School of Nursing, the University of Phayao, who was not involved in the delivery of the MBSR program or in teaching potential participants due to having recently returned to the University from

doctoral studies being undertaken elsewhere; 2) an advertisement flyer outlining details of the study was posted on the student notice board of the School of Nursing. Prospective participants were able to contact the researcher by telephone or electronic mail to have questions answered prior to completing a consent form; completed consent forms were placed in a sealed box located in the main office of the School of Nursing, University of Phayao. Research assistant A checked the eligibility of the 127 nursing students agreeing to participate in the study. All potential participants met inclusion criteria and were recruited to the study.

4.2.3 Study setting

The study was conducted in the School of Nursing, which is one of 17 schools of the University of Phayao. The study university is located in Phayao province, a rural area of Northern Thailand. It is also a relatively new public university receiving official approval in the Royal Gazette in the year 2010 (University of Phayao, 2011). The School of Nursing offers the Bachelor of Nursing program. The program requires 4 years of study; with about 80 students enrolled in each year of nursing study. The study was undertaken from November 2013 to July 2014. The MBSR program was implemented in the activities room which is located on one side of the top floor of the Nursing Building. This venue is well-ventilated, spacious (10m x 20m), and has good lighting. The internal space can be reconfigured to maximise flexibility of usage and thus is a suitable venue in which to deliver the MBSR program.

4.2.4 Sample size

Sample size calculations were conducted prior to commencing the study by a biostatistician. Based upon a previous study examining effect sizes for psychological outcomes in published studies of MBSR (Carmody & Baer, 2009), the mean pre-and post- effect sizes for the stress outcome was 0.56 standard deviations (SD). With a two-sided 0.05 significance level (type 1 error) and the minimum acceptable power level of 0.80 (Cohen, 2013), a sample size of 63 participants per group would be required to detect a 0.5 SD difference on the study's primary outcome (stress score at 32 weeks). Anticipating a dropout rate of 10 %, 70 participants would need to be recruited in each group or 140 participants totally. In the time allocated for the study, 127 totally eligible participants agreed to participate in the research project.

4.2.5 Randomisation

Prior to randomisation, all 127 consenting participants had completed base-line data measures of demographic data, stress, depression, self-esteem and mindfulness, as well as utilisation of health and counselling services. They were then randomly assigned into either an experimental group or a control group by a biostatistician of the University of Newcastle, who was not involved in participant recruitment. A randomisation sequence was created using Stata V13 (Statacorp, College Station, TX), and allocation of the participants was undertaken using a randomised block design with blocks of size two and four. This design was used to ensure that the number of participants were equally distributed among the study groups (Hulley et al., 2013). Sixty three and sixty four participants were assigned to the experimental and control groups, respectively. The details of the allocated group based on participants' student identification numbers were then returned to the researcher, who sent these to research assistant A. Research assistant A had face to face meetings with participants in each group on the same day but at different times to advise about group allocation, to assign participants to the intervention or control groups, and to provide details of study arrangements (i.e. meeting dates for the researcher and the experimental participants, the dates for all participants to complete outcome measurements at week 8, 16 and 32 following baseline measurement, and usual treatment from the Mental Health Counselling Centre, the School of Nursing, the University of Phayao).

Since the number of participants per MBSR class as suggested by Kabat-Zinn (2014) was 15-40, the 63 experimental group participants were divided into subgroups. Following randomisation, participants in the experimental group were allocated to one of three subgroups to receive the MBSR intervention program delivered by the researcher over an eight-week timeframe for each experimental subgroup, within the same week but on different days (afternoon of Monday, Tuesday and Friday). The allocation of the experimental participants into three subgroups was based on the time availability of each participant, and coordinated by research assistant A. The number of participants in each experimental subgroup prior to commencing the MBSR program was 26, 18, and 19, respectively.

4.2.6 The control group

Participants in the control group received no intervention, but were able to receive usual treatment by accessing mental health services from the Mental Health Counselling Centre, School of Nursing, the University of Phayao on an as-needed basis. The Centre is run by lecturers of the Department of Mental Health and Psychiatric Nursing, and provides mental health services for nursing students and other university students. However, 95% of clients are nursing students. The services provided include: 1) assessment of individual mental health; 2) counselling services which include individual, group, phone and e-mail counselling, with a focus on mental health problems resulting from study and daily life pressures; 3) relaxation interventions for stress such as an electrical massage chair, music therapy and aromatherapy. Services are available during standard business hours Monday to Thursday on a walk-in basis, although students may also make appointments for consultations and stress reduction sessions in advance.

After completion of all data collection in week 32 (the third week of July 2014), the researcher provided a 2-day intensive mindfulness workshop for the ten control group participants who wished to take up this opportunity. Contents and duration of the workshop were the same as a pilot program described later in the section entitled 'Pilot study of the MBSR program'. The workshop was held in the third and fourth week of July 2014, with the first and second days being separated by 1 week to allow participants to practice MBSR techniques prior to attending the second day.

4.2.7 Blinding

While the participants involved in the study and the researcher were aware of the group allocations, those involved in data collection (research assistant B) and analysis were blinded to group allocation. Research assistant B (Appendix 2) is an academic staff member in the School of Energy and Environment at the University of Phayao, and was not involved in any other aspect of the study. He coordinated data collection at baseline as well as at weeks 8, 16 and 32 following baseline measurement.

4.2.8 Intervention

The intervention used in the study was the 8-week Mindfulness-based Stress Reduction (MBSR) program developed by Jon Kabat-Zinn (Kabat-Zinn, 2009). The MBSR program comprised 8 weekly, 2.5-hour group sessions and one 7.5-hour, full-day silent mindfulness session, conducted during the sixth week of the program.

The structure and methods

The structure and methods of the MBSR program were as follows (Baer & Krietemeyer, 2006; Blacker et al., 2009; Kabat-Zinn, 2009, 2014; McCown et al., 2011; Stahl & Goldstein, 2010):

1) Formal mindfulness practices

Formal mindfulness practices comprise a body scan practice, mindful yoga (gentle Hatha yoga), sitting meditation, and walking meditation.

- Body scan practice is a technique for developing both concentration and flexibility. It involves paying attention in an ordered fashion to each part of the body from toes to head. Participants are instructed to notice sensations that are present with openness and acceptance, regardless of how pleasant or unpleasant the experience. The body scan was practiced for 45 minutes in the class, and assigned for homework practice during the first 4 weeks.

- Mindful yoga is a technique to cultivate moment-to-moment awareness of body and breathing while undertaking body movements in each yoga posture. Participants were encouraged to be aware of their limits, to avoid any postures they feel would cause injury or a setback, to experiment with caution and care when in doubt, to accept the body as it is, and to avoid striving to make progress. Participants practiced lying yoga in sessions 3-4, and standing yoga in sessions 5-6.

- Sitting meditation, the heart of formal meditation practice, is the focusing of attention on breathing and other objects while sitting. The participants were instructed to observe all sensations, thoughts, and emotions that may arise, without judging or analysing them. Participants practiced sitting meditation with mindfulness of breathing for 10-20 minutes at a time in sessions 1-4. In sessions 5-6 they practiced sitting meditation while expanding the field of their awareness to other objects including body sensations, sounds, thoughts, feelings and no particular objects (choiceless awareness). This technique was also assigned for homework.

- Walking meditation involves intentionally attending to the experience of walking itself, rather than simply getting from point A to point B. The participants were encouraged to be with each step, and to realise that they are just where they are.

2) Informal mindfulness practices

Informal mindfulness practices are the application of mindfulness in everyday life. These practices include awareness of breathing, awareness of pleasant and unpleasant events and awareness of routine activities and events such as eating, showering, doing chores, walking, driving, and awareness of interpersonal communications.

3) Group dialogue and inquiry

Group dialogue and inquiry was oriented around in-session and weekly home practices and focused on participants' experiences of the practices described above. The researcher's roles were a) listening attentively to the needs and variety of participants' expressions; b) inquiring directly into the participants' experiences, instead of giving advice or using formulaic responses; c) creating a safe space and encouraging participants to assist in the co-creation of a sensitive and safe environment.

4) Didactic presentations

To enable participants to understand the relationship between mindfulness practice and their ability to cope more effectively with stress, the researcher provided relevant information such as physiology of stress, stress reactivity and the learned ability to respond, and communication patterns. Rather than lecturing to the participants, the researcher encouraged the participants to share their direct experience; these experiences were then used as much as possible as examples and didactic materials for each presented topic. Additionally, the researcher read poems regarding mindfulness; some were written by Thai poets, Thai monks, and the researcher, and some were translated from English to Thai by the researcher.

5) Home assignments

Home assignments were used to help participants develop on ongoing and consistent practice and to apply mindfulness in their daily lives. Assignments included a minimum

of 45 minutes per day of formal mindfulness practices, and various informal practices of approximately 5-15 minutes duration. Towards the end of each session, the researcher outlined the homework exercises to be practiced during the six days prior to the next session and encouraged participants to undertake these regularly.

6) A full day silent retreat

In addition to the weekly sessions outlined above, participants engaged in formal mindfulness practice in silence (except for the researcher's instructions) at a full day (7.5hours) retreat held in the sixth week of the MBSR program. Practices include a mountain meditation, loving- kindness meditation, and a fast/slow walking exercise. This retreat provided the opportunity to practice nonjudgmental awareness of experience without being disturbed by habitual activities.

The overview of the MBSR program is presented in Table 2.

| Table 2: | Overview | of the MBSR | program |
|----------|----------|-------------|---------|
|----------|----------|-------------|---------|

| Weeks | Themes | Class sequence practices | Home practices | Materials |
|-------|-----------------------------------|--------------------------------------|---------------------------------------|------------------------|
| | | 1. Welcome and introduction | 1. Practice Body scan 6 days | 1.MBSR practice manual |
| 1 | 'Opening to new possibilities' | 2. Opening meditation | 2. Complete 9 dots exercise | week 1 |
| | - An introduction to mindfulness. | 3. Guideline for participation | 3. Eat one meal mindfully | 2.Nine Dots Exercise |
| | - Mindfulness is fundamental to | 4. Individual internal reflection | | 3.Body scan recording |
| | work with challenges and | 5. Yoga practice | | |
| | difficulties. | 6. Sultana exercise | | |
| | | 7. Abdominal breathing | | |
| | | 8. Guided body scan | | |
| | | 9. Home practice assignment | | |
| | | | | |
| | | 1. Guided body scan | 1. Practice body scan 6 times, or | 1. MBSR practice |
| 2 | Perception and Creative | 2. Standing yoga | more | manual week 2 |
| | Responding | 3. Group discussion | 2. Sitting meditation with | 2. Pleasant Events |
| | - How we perceive will determine | 4. Sitting meditation with awareness | awareness of breatning (10-15 | Calendar |
| | now we will respond to them that | 5 Home prestice essignment | 2 Fill out 'Placent Events | |
| | and mind | 5. Home practice assignment | 5. Fill out Pleasant Events | |
| | and mind. | | 4 Mindfulness of routing activities: | |
| | | | 4. Windfulless of fourile activities. | |
| | | | showering shopping esting etc. | |
| | | | snowering, snopping, eating etc. | |
| | | 1 Sitting meditation with awareness | 1 Alternate body scan practice | 1 MBSR practice |
| 3 | 'Pleasure and Power in Reing | of breathing | with lying-down yoga, every | manual week 3 |
| | Present' | 2. Group discussion of home | other day 6 days, or more | 2. Unpleasant Events |
| | - We can have pleasant moments in | practice | 2. Sitting meditation with | Calendar |
| | spite of being in crisis, and | 3. Introduction of walking | awareness of breathing (10-15 | |
| | unpleasant moments in situations | meditation | minutes per day) | |

| Weeks | Themes | Class sequence practices | Home practices | Materials |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| | perceived as pleasurable. | 4. Lying- down yoga 5. Group discussion about yoga experience and Pleasant Events Calendar 6. Home practice assignment | 3. Complete Unpleasant Events Calendar | |
| 4 | <i>'The Shadow of Stress'</i> - Cultivating mindfulness can reduce the negative effects of 'stress reactivity', an develop more effective ways of responding positively and pro-actively to stress experiences. | Standing Yoga Postures Sitting meditation Group discussion of in- session and home practice Group discussion about experience of stress Home practice assignment | Alternate body scan with lying- down yoga, every other day 6 days, or more. Sitting meditation 20 minutes per day with attention to breathing, other physical sensations, and awareness of the whole body. Be aware of stress reactions and behaviours during the week, without trying to change them. Awareness of feeling stuck, blocking, numbing, and shutting off to the moment when it happens this week. Review information about stress in the practice manual. | 1.MBSR practice manual week 4 |
| 5 | <i>'Finding the Space for Making Choices'</i> - Connecting mindfulness with the perception/appraisal in the critical moment, and with the arising of | Standing Yoga Sitting meditation Guided reflection: Midway Assessment Group discussion Home practice assignment | Alternate sitting meditation with either body scan or lying- down yoga. Fill out 'Difficult Communications Calendar'. Bring awareness to moments of | MBSR practice manual week 5 Difficult communication calendar |

| Weeks | Themes | Class sequence practices | Home practices | Materials |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| | reactive physical sensations, emotions, cognitions and behaviours. - Emphasis on stress responding rather than stress reacting. | | reacting and explore options for responding with greater mindfulness, spaciousness and creativity, in formal meditation practice and in everyday life. | |
| 6 | <i>'Interpersonal Mindfulness'</i> - Developing awareness of interpersonal communication patterns and barriers. - Cultivating capacity to be more flexible and to recover more rapidly while facing interpersonal situations. | Standing Yoga Sitting meditation with less instruction Group discussion Home practice assignment | Alternate sitting meditation with body scan and/or standing or lying down yoga. | 1.MBSR practice manual week 6 |
| A full- day silent practice | <i>'Dive in'</i> - Integrating and deepening the learned mindfulness practiced in silence over an extended period of time. - Being open to any experience arising as an opportunity to practice mindful awareness. | Morning session 1. Brief sitting meditation in silence 2. Welcome, guidelines for the day 3. Sitting meditation: focus on AOB 4. Guided yoga ending with short body scan 5. Slow walking meditation: with introductory guidance 6. Sitting meditation with less guidance | | 1. MBSR practice manual: A full-day silent retreat |

| Wooks | Thomas | Class seguence practices | Homo prosticos | Matarials |
|-------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Weeks | Themes | 7. Slow walking meditation with less guidance 8. Mountain meditation 9. Talk- giving inspiration and encouragement 10. Silent lunch and mindful eating | | Materials |
| | | Arternoon session Fast/slow walking exercise, with specific, well-paced verbal guidance by teacher Loving-kindness meditation Short sittings alternated with short walking Dissolving the silence by whispering in pairs, then in groups of four, discussing experiences of participation Group discussion and dialogue Sitting meditation | | |
| | | 7. Closing ceremony | | |
| 7 | <i>Cultivating Kindness towards Self</i> <i>and Others</i> ' - Integrate mindfulness practice more fully and personally into | Changing seats exercise: Awareness of attachment to place Yoga choice exercise Sitting meditation with choiceless awareness | Practice formal sitting, yoga, walking and/or the body scan on one own, every day for 45minutes. Practice informally by being as | 1.MBSR practice manual week 7 |
| | daily life. - Reflecting on life-style choices | 4. Group discussion5. Home practice assignment | aware and awake as possible each day. | |

| Weeks | Themes | Class sequence practices | Home practices | Materials |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------|
| | that are adaptive and self- nourishing as well as those that are maladaptive and self-limiting. | | | |
| 8 | <i>'The Eight-Week is the Rest of</i> <i>Your Life'</i> - Keeping up the momentum and discipline developed over the past 7 weeks in the mindfulness practice. | Body scan Yoga stretching Sitting meditation Nourishing and draining exercise Guided reflection : Letter to self Group dialogue and discussion: review of course, written evaluation forms Group go round Final meditation and acknowledgement of ending of the group. | Keep up the practice and make it one's own. | 1.MBSR practice manual week 8 |

Equipment and materials

The only equipment needed for mindfulness practice in the MBSR program is a yoga mat and cushions. The researcher provided each experimental group participant with a yoga mat to use for home practice. A number of shared cushions were also provided for the participants during in-session practice. In addition, all experimental participants were given a Thai version of MBSR practice manual in each week (Appendix 3). The researcher conducted the MBSR program following an MBSR teaching manual (Appendix 4) developed in accordance with the standard MBSR program.

Measures of adherence to the intervention

To record participants' weekly attendance/absence, the experimental participants were asked to sign their names on the attendance sheet record and pick up their name tags prior to commencing each class.

Preparation of the researcher to conduct the MBSR program

As no other persons trained in MBSR could be identified in Thailand, the intervention was delivered by the researcher. The researcher is a qualified MBSR instructor trained by Openground, Australian mindfulness training and consulting. The organisation maintains close professional links with the Centre for Mindfulness in Medicine, Health Care, and Society (CFM) at the University of Massachusetts Medical Centre, USA where MBSR was developed by Jon Kabat-Zinn.

The researcher has undertaken the following MBSR-related training since commencing the research higher degree candidacy:

1) Participation in and completion of the 8-week MBSR program, taught by an experienced MBSR teacher of the Openground organisation, and held at Newcastle, NSW, Australia (5th May- 23rd June, 2011)

 Participation in and completion of a teacher-led, 10-day silent meditation course held at the International Meditation Centre (IMC), Sunshine, NSW, Australia (24th June- 4th July, 2011) 3) Participation in and completion of the 7-day Intensive MBSR and MBCT Teacher Training Program, taught by the Openground teaching team, and held in Sydney, NSW, Australia (18th - 25th July, 2011).

In addition, the researcher has also completed NURS6035: Therapeutic Engagement and Psychosocial Interventions (the University of Newcastle) in Trimester 2, 2011 (23rd May- 2nd August, 2011). The core content of this course involves a range of psychosocial interventions including individual, group-based, e-therapies and mindfulness-based in terms of therapeutic engagement, analysing and critiquing their theoretical foundations, techniques, value, applications and research evidence. Completing this course assisted the researcher to develop further knowledge and skills in an intervention of her own choosing i.e. MBSR.

Currently, the researcher has not met the 'high bar' or all the qualifications for 'Standard of Practice for MBSR teachers' developed by the CFM, the University of Massachusetts Medical Centre (Kabat-Zinn et al., 2014). Nevertheless, she has regularly attended teacher-led silent meditation retreats (Vipassana meditation) of 3-10 days duration and maintained an ongoing personal mindfulness practice, particularly sitting meditation, mindful yoga, and mindfulness practices in daily life. In addition, the researcher has maintained contact with mindfulness networks (i.e. Openground, MBSR teacher team in Newcastle and throughout Australia, and the meditation community of IMC, Sunshine). The researcher's level of training is consistent with Kabat-Zinn et al's (2014) statement that not all MBSR teachers will be able to meet all criteria when they begin to undertake teaching, and "they can be grown into overtime according to each individual's background, training, motivation, and life circumstances" (p. 2).

4.2.9 Outcome measures

The primary outcome measures for the present study were perceived stress, depression, self-esteem, and mindfulness; and the secondary outcome measures were utilisation of health and counselling services, and grade point average (GPA) scores. Following the initial recruitment process, all consenting participants completed baseline assessment; and then post-test measures were conducted immediately post-intervention at week 8 and at weeks 16 and 32 after baseline measurement. Participants' demographic information and five outcome measures were collected using self-administered

questionnaires. Research assistant B conducted all assessments. Prior to assessment, research assistant B was trained to administer all questionnaires by the researcher.

Demographic Questionnaire

A researcher-developed questionnaire was used to collect demographic data on participants, including gender, age, educational level (years of study), educational achievement (accumulated grade point average), family status, religion, experience of mindfulness practice. The English-version of the Demographic Questionnaire (Appendix 5) was translated into the Thai language by the researcher; and the translated version (Appendix 6) was verified by a qualified bilingual validator. The process to ensure the validity of the translation process will be explained more fully in the section entitled 'Cross-language validity of the RCT study'.

The Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) (Cohen et al., 1983) was used to measure participants' perceived stress (Appendix 7). This is a widely used well-validated 10-item scale that measures the degree to which participants appraise their life situation over the past month as unpredictable, uncontrollable and overwhelming. Items are rated on a 5-point Likert scale ranging from 1 (never) to 5 (very often), with higher scores indicating higher perceived stress. Items 4, 5, 7, and 8 are scored in the reverse direction. Cohen et al. (1983) tested the PSS in college students and community participants. The scale demonstrated coefficient alpha reliability of 0.84-0.86, and the test-retest stability was 0.85 for student subjects and 0.55 for community samples at 6 weeks interval. The instrument was also supported by evidence of good concurrent and predictive validity. The PSS has been translated into the Thai language by Wongpakaran and Wongpakaran (2010). The PSS-Thai version has been used with medical students and patient participants. The overall Cronbach's alpha for the scale was 0.85, and the test-retest reliability at a 4-week interval was 0.83. Correlation with measures of anxiety, depression and self-esteem supported its concurrent validity. Construct validity using factor analysis showed excellent goodness of fit for the two factor solution model. The Thai language version of the instrument was used in this study (Appendix 8).

The Centre for Epidemiology Studies- Depression Scale (CES-D)

The Centre for Epidemiology Studies- Depression Scale (CES-D) (Radloff, 1977) was used to measure symptoms of depression among participants (Appendix 9). This instrument comprises 20 items assessing the frequency of depressive symptoms experienced in the past week, using a 4-point Likert scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). High scores reflect high levels of depression symptoms. Items 4, 8, 12, and 16 are scored in the reverse direction. The original scale was tested using household and psychiatric patient samples. The instrument's reliability using Cronbach's alpha ranges from 0.84 to 0.90, and test-retest reliability coefficient was in moderate range (0.51-0.67) in 2-8 week intervals. In addition, the CES-D has demonstrated excellent validity by clinical and self- report criteria, and relationships with other variables support good construct validity. The CES-D scale has been translated into the Thai language (Worapongsathorn, Pandee, & Triamchaisri, 1990). This version of the instrument has been tested in teachers, college students and depressive adolescents. It has been shown to have internal consistency of 0.86, but the cut-off point of the scale at 19.5 was higher than that of the original scale at 16. The Thai version of the CES-D has also been tested by Kuptniratsaikul and Ketuman (1997) using medical officers and psychiatric patients. In this case scores of 19 or higher were considered indicative of depression with coefficient alpha reliability of 0.92, 93.33% sensitivity and 94.2% specificity. The Thai language version of the CES-D was used in this study (Appendix 10).

The Rosenberg Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1972) was used to measure participants' self-esteem (Appendix 11). The instrument comprises 10 items, both negative and positive, and uses a 4-point Likert scale. The score criteria range from 1 (strongly disagree) to 4 (strongly agree). Higher scores indicate higher levels of self-esteem. Items 2, 5, 6, 8, and 9 are scored in the reverse direction. The original version of the RSES was tested using high school students. The scale had a coefficient of reproducibility of 0.92, and 2-week test-retest stability of 0.85 and 0.88 (Fischer & Corcoran, 1994). This instrument has been widely used across various samples, and has shown acceptable reliability with Cronbach's alpha of 0.77-0.88 and test-retest stability of 0.82-0.88 (Blascovich & Joseph, 1991). The RSES has been translated into Thai

language by Piyavhatkul et al. (2011). The Thai version was tested using normal volunteers and psychiatric patients. Content validity of the scale was checked using back translation, and comprehensibility of the language was then tested in 15 normal Thai volunteers. The Cronbach's alpha reliability was 0.849. The Thai language version of the RSES was used in this study (Appendix 12).

The Mindful Attention Awareness Scale (MAAS)

The Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2003) was used to assess participants' mindfulness (Appendix 13). The MAAS is a 15-item scaled instrument that measures participants' tendency to attend to present moment experiences in daily activities. The MAAS uses a 6-point Likert scale, with response options ranging from 0 (almost always) to 6 (almost never). Higher scores reflect higher levels of mindfulness. The MAAS was assessed in college students and adult community residents. It demonstrated good reliability with Cronbach's alpha of 0.82 and 4-week test-retest reliability of 0.81. It also exhibited adequate convergent, discriminant and incremental validity. The MAAS has been firstly translated into Thai by Christopher et al. (2009) to examine the measurement equivalence of the instrument among Thai and American college students. Only Thai participants were investigated using the Thai version of the MAAS. The instrument's content validity was established using back translation, and confirmatory factor analysis supported its construct validity. Christopher et al. (2009) found that the MAAS demonstrated configural, metric, and partial scalar invariance, but no latent mean difference between Thais and Americans. This indicated at least partial support for the stability of the MAAS among Thais. The Thai language version of the MAAS was used in the study (Appendix 14).

The Health and Counselling Service Utilisation Questionnaire

To assess the participants' use of health services other than the MBSR intervention, the researcher developed a questionnaire to seek information on accessing health and counselling services, including the kind of services accessed, reasons for accessing, and frequency of accessing (Appendix 15). The English version of the Health and Counselling Service Utilisation Questionnaire was translated into the Thai language by the researcher; and the translated version (Appendix 16) was verified by a qualified bilingual validator. The process to ensure the validity of the translation process will be outlined later in the topic 'Cross-language validity' of the RCT study.

The grade point average scores

There is evidence in the literature indicating that high stress is associated with depression and low self- esteem in nursing students and may affect their academic performance. Academic results provide one measure of academic performance. In this study, the grade point averages (GPA) of all participants were accessed by the Vice Dean for Academic Affairs of the School of Nursing, the University of Phayao. Access to and extraction of nursing students' GPA is a routine part of responsibilities of this officer of the University. The GPA is measured from 0.00-4.00; higher scores indicate a higher academic performance. Participants' GPAs were extracted for the trimesters corresponding with the collection of outcome measures (i.e. trimesters 1/2013, 2/2013, 3/2013, and 1/2014 for baseline, week 8, week 16, and week 32 measurements, respectively).

4.2.10 Pilot study

Pilot testing of the research instruments

Permission to use the four outcome measurements (the PSS, the CES-D, the RSES, and the MAAS) was sought from the respective authors prior to their use in the study (Appendix 17-20). After receiving permission, the researcher conducted pilot testing for internal consistency reliability of the Thai PSS, the Thai CES-D, the Thai RSES, and the Thai MAAS, using 15 nursing students studying in the third year of the nursing program of School of Nursing, the University of Phayao, Thailand. The characteristics of pilot samples were similar to those of the prospective participants. Internal consistency was evaluated by calculating the Cronbach's alpha coefficient. Results showed that the Cronbach's alpha coefficient for Thai PSS, the Thai CES-D, the Thai RSES, and the Thai MAAS were 0.81, 0.92, 0.89, and 0.87, respectively.

Based upon the participants' response to the data collection instruments, items within the scale were clear and the length of all scales was appropriate. Completing the instruments took approximately 20-25 minutes.

Pilot study of the MBSR program

The standard MBSR program was developed by Professor Jon Kabat-Zinn, an American scientist; the researcher was trained to be an MBSR teacher in Australia while

the study was to be conducted in Thailand using the Thai language. It was thus necessary to pilot the program. The purpose of the pilot study was to determine how best to deliver the program within the Thai context. The expectation was that the pilot study would provide feedback and recommendations from participants that could be used to improve the teaching methods planned for use in the program.

After receiving ethics approval from Human Research Ethics Committee, the University of Newcastle, the researcher conducted the pilot program in the School of Nursing and Midwifery, the University of Newcastle, Australia; this enabled the academic supervisors to attend and supervise delivery of the pilot study. In addition, the researcher provided a teaching manual for the MBSR pilot study (Appendix 21) for the supervisors to review. The pilot study was conducted over two consecutive days; each day a 3.5- hour group session was conducted. The pilot totalled seven hours. The MBSR pilot program consisted of all the formal mindfulness practices used in the standard MBSR program – the body scan, sitting meditation, mindful yoga, and walking meditation. It also included the main informal mindfulness of responding to stressful-life events, and homework practices. Although the pilot study was a brief and intensive program, it covered all core mindfulness practices of the standard MBSR program.

The volunteering participants in the pilot study were five Thai students (four females and one male) undertaking postgraduate studies on the Callaghan campus of the University of Newcastle, Australia. Four of these participants were PhD students in the School of Nursing and Midwifery and are nursing university lecturers in Thailand. The other participant was a Masters Degree student in the Faculty of Education and Arts. Participants' ages ranged from 27 to 43 with an average of 32.4 years. Two of the five participants had previously learned sitting meditation and walking meditation from Thai monks. Prior to commencing the pilot program, all participants received an information sheet and a consent form for the pilot study; they also completed consent forms. The researcher gave each participant the Thai version of the practice manual for the MBSR pilot study (Appendix 22) as well as a yoga mat and a blanket for practice. The pilot study was undertaken in the Thai language.

At the end of the program, participants were asked to share their experience and feedback of participation in the program in a 20-minute focus group facilitated by the

researcher. Three main questions were used in the focus group discussion: 1) What was it like for you participating in the program? 2) Has participation in the program been useful for you and if so how? 3) Is there any feedback and suggestions you would like to tell us about your experience of participation in the program? Although there were only five participants, whose average age was considerably different from that of the prospective participants in the main study, the feedback and recommendations were useful for improving the delivery of the standard MBSR program. All participants expressed their appreciation and gave positive and constructive feedback. Participants' feedback and comments can be summarised as follows:

The program

It was a useful program consisting of various mindfulness practices that could be applied to help reduce stress in daily life. Participating in the program was like taking a peaceful break from the stressors of study. The participants also felt the program would be beneficial to Thai nursing students. One participant pointed out that during instruction in mindfulness practices the researcher's voice tone was clear and soft enabling her to be relaxed. For the participants who had previous experiences of meditation, the MBSR program had enabled the use of a more simplified form of meditative practice in everyday life, especially informal mindfulness practices that could be used in any place at any time.

The outcomes

One participant indicated that whenever she felt stressed, she would be able to calm herself by focusing on her breathing and find a solution to why she was feeling stressed later. Another participant felt strongly drawn to 'the nine dots exercise', the theme of which was expansion of awareness by thinking 'outside of an imaginary box'. This exercise enabled the participant to become more aware of and flexible in dealing with a tendency to have fixed ideas surrounding important and difficult tasks. This participant also felt the program had helped in becoming more aware of what he was doing at the moment. Another participant felt she had learnt a new way to encounter difficulties in her life – mindfully seeing and accepting them as they are.

The recommendations

As the body scan was a practice that participants had not previously experienced, it was suggested that the researcher allow more time following formal instruction in the technique so participants could focus attention on each body area. It was also suggested in relation to mindful yoga that the researcher should model each posture first and then repeat it together with the participants. It was felt that this would be a better approach than asking participants to perform each posture without these having first been modelled. The researcher agreed with these suggestions and the teaching methods of the standard MBSR program were adjusted accordingly.

4.2.11 Data collection process

The procedure of RCT data collection as detailed above is illustrated by Figure 5.



Figure 5: Data collection process of the RCT study

4.2.12 Data analysis

All statistical analyses were conducted using SAS version 9.4 statistical software (SAS Institute Inc., Cary, North Carolina, USA).

The demographic data for participants were analysed using descriptive statistics and summarised as the number of observations, means, standard deviations, medians, minimums and maximums where the data are continuous and as the number of observations and frequencies where the data are categorical. The data were presented separately by study groups (i.e. experimental and control group). As randomisation enhances the probability that participants in experimental and control groups will be theoretically equivalent on all major dependent variables at the baseline measure (DePoy & Gitlin, 2011), formal tests of difference in participant characteristics were not presented.

Outcome measures were analysed using an intention-to-treat analysis, with measures completed by all participants according to their original group assignment, regardless of what subsequently occurred (Moher et al., 2010). Primary and secondary measures were analysed using linear mixed models for repeated measures. The response at each scheduled completion of the assessment measures is the dependent variable. Predictor variables in the model included fixed effects for group (usual care as reference vs experimental group), time (baseline as reference, week 8, week 16 and week 32) and the interaction between group and time. The interaction remained in the model regardless of significance. A subject level random intercept was included in the model to allow for correlations arising from repeated measures and a compound symmetric covariance pattern was used to estimate the variance-covariance of the within-subject repeated measures (i.e. the R side random effects). The primary comparison is of the slopes at the last follow up (change scores) between the experimental group and the control group. A secondary analysis examined the difference in changes of each outcome variable at all time-points. Sub-group analyses were conducted by sex.

In addition, the effects of the mediators (perceived stress and mindfulness) on the outcomes (depression and self-esteem) were determined. The mediator variables may account for a significant portion of the correlation between the independent (the MBSR intervention) and the outcome variables (Baron & Kenny, 1986). Where effect sizes

were significant, it was decided to examine indirect intervention effects in the presence of the mediators. Statistical analyses were programmed using Stata v13.1 (StataCorp LP, College Station, Texas, USA). Linear regression was employed to determine the effects of the mediators on the outcomes. The Sobel-Goodman test and Bootstrapping, which are inferential methods, were used to test the significance of a mediator variable effect or indirect effect (Hayes, 2009). In other words, these are techniques for testing whether a mediator variable effect significantly carries the influence of an independent variable to an outcome variable. In addition, Bootstrapping does not require the assumption that the sampling distribution of the indirect effect is normal, but relies on random sampling with replacement during analysis. With this procedure, Bootstrapping can produce a percentile-based bootstrap confidence interval (i.e. a 95% confidence interval) (Hayes, 2009).

4.2.13 Ensuring the rigour of the RCT study

With regard to rigour or quality of the RCT study, Christensen et al. (2015) suggest that the best way to ensure that an experimental study yields empirical results from which accurate inferences can be made is by maximizing all four types of validity (statistical conclusion validity, construct validity, internal validity and external validity). The researcher develops a plan for methodological decision-making and implements this carefully so as to increase the likelihood that the outcomes can be attributed to the intervention. No matter how well designed a study, various threats to validity will almost certainly occur during any experiment (Houser, 2015). To maximise the rigour of study, such threats should be eliminated, controlled, or accounted for. The details of how to control such threats and enhance the validity of an RCT are as follows:

Statistical conclusion validity

Statistical conclusion validity is the validity of the inference about whether the independent and dependent variables are statistically related; and it can be threatened by a lack of sufficient number of participants for a study (Christensen et al., 2015). In this RCT study, the number of participants was a sufficient sample size as determined by power analysis calculation. Therefore, the statistical test used has sufficient power to detect the relationship between the independent and dependent variables.

Construct validity

Construct validity refers to the validity of inference from the particulars of the study to the higher-order constructs used to represent them (Christensen et al., 2015; Polit & Beck, 2014). Christensen et al. (2015) identify two major threats to construct validity: participant effects and researcher effects.

Participant effects Participants' behaviours in a study can be influenced by the perceptions and motivations they bring with them. Importantly, information that participants receive at the beginning of a study probably shapes their perceptions of the experiment and influences positive self-presentation (participants' motivations to perform the tasked required in a positive way) (Christensen et al., 2015). To produce identical perceptions in all participants, researchers should constantly administer the conditions of the independent variable causing the variation in the dependent variable. One of the best techniques to do so is the double-blind method in which both the researcher and participants are blind to the treatment condition that a given participant receives (Christensen et al., 2015). That is, all participants are told the same thing. However, blinding of either participants or researchers is often difficult and impossible in an educational intervention (Hulley et al., 2013) or a group intervention. Similarly, the present RCT study could not use such a blinding technique because the intervention program was delivered by the researcher. However, as outlined in section 4.2.7 of this chapter, blinding was attempted wherever possible.

Researcher effects refer to unintentional biasing effects of a researcher impacting on research participants. Researcher attributes or characteristics are factors affecting changes in performance by research participants. Concerning control of researcher attributed errors for this RCT study, only the researcher delivered the intervention program so the influence of researcher attributes could be held constant across all treatment conditions (Christensen et al., 2015).

Internal validity

Internal validity is the primary purpose of experimental methodology (Buckwalter et al., 1998). This refers to the validity of the inference supporting the causal relationship between the independent and dependent variables (Christensen et al., 2015), and whether anything else is responsible for the outcome, or dependent variable (Houser, 2015). Thus, the presence of an extraneous variable that could have confounded the

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results is the main threat to internal validity. To achieve internal validity, confounding extraneous variables must be controlled. As described previously, the RCT is regarded as the gold standard of experimental studies; with its main characteristics (randomisation, manipulation and control) seen as the best techniques for controlling threats to internal validity.

Randomisation is considered the most powerful method to control both known and unknown extraneous variables. With an adequate sample size, random assignment, and a control group in this RCT study, it was reasonable to assume that the distribution and influence of extraneous variables would be approximately the same in both groups of participants (Buckwalter et al., 1998; Christensen et al., 2015). In this study, extraneous variables that were controlled by randomisation were (Buckwalter et al., 1998; Campbell & Stanley, 1973; Christensen et al., 2015): 1) events other than treatment, occurring between pre-test and post-test, that might cause the outcome (*history*); 2) changes that may have occurred in the internal conditions of participants as a function of the passage of time (*maturation*); 3) changes that might have occurred in post-test scores as a result of taking the same test administered at pre-test (*testing*); 4) that there has been selection of participants having extreme (high or low scores) on a measure (*regression artefact*; and 5) that participants were selected on a non-random basis (*selection bias*).

In addition, there are three other important threats to internal validity. Firstly, *instrumentation* involves changes occurring over time in the measurement of the dependent variables (Christensen et al., 2015). The research instruments used to measure the outcome variables at the pre-test and the post-test in the present RCT study were self-report questionnaires. These were well validated measures which had also been pilot tested. In addition to the chosen outcome measures, the MBSR program itself was an instrument in the study. Intervention fidelity (how well the interventionist delivered the intervention as planned) is an important factor that may impact intervention effects on outcomes (Song, Sandelowski, & Happ, 2010). Fidelity can be assessed by adherence (the number of prescribed behaviours shown) and competence (the skilfulness shown in the delivery of the intervention) (Song et al., 2010). The section above entitled 'preparation of the researcher to conduct the MBSR program' outlines the procedures used to enhance intervention fidelity in the study.

Secondly, *attrition* means differential loss of participants from the comparison groups (Campbell & Stanley, 1973). To preserve fully the advantages of randomisation, one widely recommended technique is 'intention-to-treat analysis', whereby all randomised participants are included in the analysis (Moher et al., 2010). In addition to the methods of analysis undertaken, expected attrition and oversampling were estimated in this RCT study. Lastly, *diffusion or contamination of treatment* was a main concern. Since the experimental and control participants in the study were in the same setting, they might be able to interact with one another and access information intended for others. The following activities were employed to minimize the contaminating effects as much as possible:

1) During MBSR class 1, the researcher informed the experimental participants about guidelines for participation, one of which was maintaining confidentiality outside of class; i.e. not repeating what was said in class;

2) The content of the MBSR practice manual provided for the experimental participants each week consisted of the necessary information (i.e. guidelines for practice, concept of stress), poems related to mindfulness practices, and home practice assignment; it did not include any techniques or steps of practices;

3) MBSR is an education program which must be taught by a qualified MBSR teacher who can provide effective teaching of the MBSR curriculum (Kabat-Zinn, 2014). Also, mindfulness practice in MBSR is attained via participation in 'group-work skills' and rooted in the co-creation of mindfulness among teacher and participants (McCown et al., 2011). This key characteristic implies that it would be difficult for MBSR to be passed on by participants in the experimental group to those in the control group;

4) During the middle of the program at week 5, research assistant A had a face-to-face meeting with the control participants to ask whether they had talked to their friends who participated in the MBSR program regarding any information on the program and what they had heard or known about. The responses revealed that control participants only knew experimental participants attended the program every week. There was no evidence of MBSR-related information or practices being passed onto control group participants. Some experimental participants approached by control group participants had indicated that they would maintain confidentiality as agreed.

External validity

Christensen et al. (2015) defined external validity as an inferential process focusing on whether the research finding can be generalised to other people (population validity), other settings (ecological validity), other times (temporal validity). In the present RCT study, the target population were Thai nursing students and the population available or the accessible population were Thai nursing students from the School of Nursing, at the University of Phayao. The samples were thus representative of the accessible population, rather than that of the target population. However, as suggested by Grove et al. (2015), if a study is high quality and produces results consistent with previous research, researchers can be more confident in generalising their findings to the target population (*population validity*). Accordingly, the present RCT findings may be generalised to the target population of nursing students in Thailand. As the effects of the MBSR intervention are independent of the experimental settings and times, the results of the RCT study can be generalised across different settings and times. In other words, they can demonstrate *ecological validity* and *temporal validity*, respectively.

Cross-language validity

Besides ensuring that the four main types of validity above were addressed, the validity of the translation process needed to be established for this study as data collection was undertaken in Thailand using the Thai language which is the native language of both the participants and the researcher. The documents translated from English to Thai were the Information Sheet for the RCT study (Appendix 23, 24), the Consent Form (Appendix 25, 26), the Demographic Questionnaire, the Health and Counselling Service Utilisation Questionnaire, and the advertisement flyer (Appendix 27, 28). The approaches that the researcher used to ensure the validity of the RCT study in terms of the quality of translation process were as follows:

1) The English versions of the above documents were reviewed and edited by the researcher's supervisors;

2) The researcher initially translated these documents from English to Thai, and then a qualified bilingual validator (Appendix 29) checked the translated documents against the original English document for accuracy of translation. Considering translator qualifications, it has been recommended that translators for research purposes have at a

minimum sociolinguistic language competence (Savignon, 1997). The competencies indicative of sociolinguistic language competence are having "oral and written communication functions on a sophisticated level; integrating understanding of cultural norms into communication processes and knowing how and when, for example, to be polite and show respect in social situations" (Squires, 2008, p. 266). The researcher as an initial translator is highly competent in the Thai language and has been developing sociolinguistic language competence in English since commencing PhD studies in 2011. Translators with this level of language competence ensure translated data is less likely to have errors related to translation (Jandt, 2015). The qualified bilingual validator who verified the initial translation is an experienced university English teacher, and highly competent in both Thai and English. She holds Bachelor and Master Degrees in English as well as a PhD (Education) from the University of New South Wales, Australia. Thus, both the initial translator and the qualified bilingual validator met the recommended language competence levels;

3) The researcher and the qualified bilingual validator reviewed, discussed and clarified changes to the translation.

As a research higher degree candidate, mechanisms to monitor the conduct and progress of the research during the data collection phase in Thailand were utilised. These included; 1) regular contact with the research supervisors in Australia by e-mail and Skype; 2) having an academic mentor in Thailand (Appendix 30), who was a University of Newcastle PhD (Nursing) graduate – whose doctoral research had been supervised by Professor Hazelton, and is also a conjoint academic staff member of the School of Nursing and Midwifery, the University of Newcastle.; and 3) one of the research supervisors, Dr Rossiter visited the researcher in Thailand during the first two weeks of August, 2013.

4.3 QUALITATIVE DESCRIPTIVE DESIGN

The previous section presented the methods used to undertake the RCT. In this section, the focus shifts to the specific method of qualitative descriptive design used to answer the research question 'How do Thai nursing students taking part in the MBSR program describe their experience of participation in the program after completion of the

program?' Also outlined is the process of data collection and analysis and strategies employed to demonstrate trustworthiness.

4.3.1 Study setting

Similar to the RCT study setting, the qualitative study was conducted in the School of Nursing, the University of Phayao, Thailand. The study was undertaken after completion of the 8-week MBSR program– in the first two weeks of February 2014. The qualitative data were collected using a focus group interview, held in a meeting room of the Nursing Building where it was private, quiet and comfortable.

4.3.2 Participants and recruitment

Qualitative inquiry typically focuses on obtaining an in-depth understanding of a phenomenon rather than empirical generalisation. Therefore, homogeneous purposive sampling was employed to recruit potential participants for this study. This technique selects participants that will provide rich and in-depth information relevant to the study aim (Holloway & Wheeler, 2010; Polit & Beck, 2014). This is used specifically in qualitative descriptive design because it enables the researcher to explore the common and unique manifestations of a target phenomenon across a broad range of phenomenally and/or demographically varied cases (Sandelowski, 2000). The technique is also well suited for focus group interviews in which participants with similar backgrounds and experiences are required to share different opinions and perspectives of the same experience (Krueger & Casey, 2015; Patton, 2002). Accordingly, the potential participants recruited for this qualitative descriptive study were volunteers from the group of 63 Thai nursing students recruited to the experimental arm of the RCT study who had completed the MBSR program. The focus was to gain an in-depth understanding of what it was like to take part in the MBSR program.

In terms of sample size, Krueger and Casey (2015) suggested that to maximise effectiveness a focus group ought to contain between five to eight participants, and not more than ten. The protocol proposed to recruit eight to nine participants to a single focus group. This number is sufficient to capture a good range of responses and to allow everyone the opportunity to share their experience.

Participants were recruited to the focus group in two ways: 1) During the initial orientation to the MBSR program the researcher distributed information about the focus group to the experimental group participants; 2) Following completion of the 8-week MBSR program at the end of the 8th session, an invitation was extended to participants to join the focus group. Those interested in taking part in the study received an information sheet and a consent form for the focus group interview. Prospective participants were given the opportunity to have questions answered prior to signing the consent form. There were nine participants willing to participate in the focus group interview. Once their signed consent forms were received, the researcher contacted each participant to arrange a convenient date and time for the focus group interview.

4.3.3 Data collection

Rationale for using a focus group interview

Data collection in qualitative descriptive design aims at discovering the 'who', 'what', and 'where' of experiences or phenomena and usually includes minimally to moderately structured open-ended individual and/or focus group interviews (Sandelowski, 2000). A focus group interview in preference to individual interviews was chosen as the method of data collection for a number of reasons. First, a focus group held at the end of the study provided explanations or alternative interpretations to the quantitative data (Goodman & Evans, 2015). Second, it was resource-effective because it allowed the researcher to explore the perspectives of a number of participants on a focused topic at one time (Holloway & Wheeler, 2010). Third, it presented a more natural environment than that of an individual interview as group interactions were similar to the everyday interactions of the nursing students and to the MBSR group format (Krueger & Casey, 2015). Lastly, a group may give a sense of 'safety in numbers' (Grove et al., 2015, p. 85), for example, participants were not singled out to respond to specific questions (Milne & Oberle, 2005); and they could express their opinions in relation to the ideas and experiences of others without feeling pressure to respond all the time.

Preparation for the focus group

As suggested by Krueger and Casey (2015), two essential factors influencing the success of a focus group are well-developed questions and a skilful facilitator. A draft guide of focus group interview prompts was initially developed by the researcher based
on the qualitative research question and the MBSR program. A semi-structured format was proposed comprising a combination of open and closed questions. This was then reviewed and revised by the research supervisors in terms of the wording of questions and order. The draft was fine tuned in response to their comments to produce the final draft. Five categories of questions were used in the flow of the focus group interview opening, introductory, transition, key, and ending (Krueger & Casey, 2015). The opening question aimed to encourage participants to speak early in the group and to help them feel comfortable (i.e. Please tell us your name and the study year). The introductory question raised the topic of the MBSR program (i.e. Could you please tell me what you expected from MBSR before you commenced the program?) while the transition question was designed to elicit deeper information about their experiences (i.e. Can you please tell me what it was like for you participating in the MBSR program?). Key questions were significantly related to the focus group topic and required a greater period of time and the greatest attention in the analysis (i.e. What aspects of the MBSR program were most helpful for you?). The questioning route finished with an ending question or invitation to ensure that critical aspects had not been overlooked (i.e. Is there anything else you would like to tell us about your experience of participating in the MBSR program?). The interview schedule was initially translated into the Thai language by the researcher and was then verified by the same qualified bilingual validator as used for the RCT study. Prior to using the interview schedule with the Thai nursing student focus group, the schedule was tested with research assistant A, who would be an observer and note taker during the focus group interview. From her responses, it appeared that the questions were conversational, clear and short.

Secondly, a focus group requires the researcher to give time to preparation and to have skills in facilitating group interviews (Goodman & Evans, 2015). The researcher undertook the role of facilitator for this focus group with qualifications comparable to those of the capable facilitator as outlined by Guest, Namey, and Mitchell (2013) and Krueger and Casey (2015). These included being fully grounded in the research objectives, understanding what kind of information was most useful to the study and having adequate background knowledge on the topic of discussion. As a mental health nursing lecturer at the university in Thailand for over ten years, the researcher has had extensive experience in teaching group process and conducting various types of group interventions. During the focus group, the facilitator's roles were to create a comfortable

environment, ask questions, listen, keep the conversation on track and encourage all participants to share their experience.

In addition to a prepared interview schedule and experienced facilitator, the focus group included research assistant A as a non-participant observer and field note taker. She was responsible for providing a written capture of key quotes and the general flow of the discussion. Since she had coordinated the recruitment and allocation procedures for the RCT study, she was very familiar with the MBSR context. She also had prior experience conducting focus groups and note taking during her own doctoral studies. Prior to undertaking the focus group, the researcher and the note taker talked through the anticipated process, the interview schedule and ensuring the seating arrangement was such that everyone could see each other.

Implementing the focus group

The focus group session commenced with an introduction that included a welcome, the purpose and format of the focus group interview, ground rules, audio recording, the presence of observer, and maintaining confidentiality. Following the introduction, the interview schedule was used as a guide to carefully direct the flow of the focus group interview. Probes were used to seek additional information from group participants (Krueger & Casey, 2015). For example, when a participant offered an answer that was unclear "*I used the Facebook as a friend for reading*", she was prompted to explain more about what she meant "*Can you clarify further*?" The focus group lasted 1.5 hours (4.00 pm-5.30 pm); the session was audio- recorded. After completion of the focus group interview, light meals in take-away boxes and gifts were provided to thank all the participants.

4.3.4 Data analysis

The analysis of qualitative data was primarily focused on answering the research question (Guest, MacQueen, & Namey, 2012). That is, to explore the experiences of Thai nursing students' participating in the MBSR program. The verbatim transcript of the focus group interview which was the data for analysis, was analysed using the qualitative data analysis process described by Bazeley (2013). This process involves preparing the data, working with data, analysing data, and refining analysis (Bazeley,

2013). These steps were applied to the data analysis for this qualitative descriptive study as follows:

Preparing data for analysis

The researcher transcribed verbatim the focus group interview audio recording and checked the verbatim transcript against the audio recording for accuracy. This enabled the researcher to 'get inside the data' (become familiar with the data and get closer to the qualitative data) much more rapidly than if an independent transcriber had been employed to undertake this activity (Richards & Morse, 2007). The transcript and field notes were initially translated to English for analysis by the researcher, and were then validated by the qualified bilingual validator. These were stored using word processor software while the interview recording was kept in an audio file. The focus group transcript and field notes were analysed manually using 'pencil and paper' method and Microsoft Office software. Data were de-identified using a pseudonym for each participant. The transcript was formatted for the second step using a two-column table, with the text recorded on the left hand column and a right hand column for writing codes and notations.

Working with data

The next step utilised was a pathway to analysis through a process of *read*, *reflect* and *code* strategies (Bazeley, 2013). The researcher initially read through the whole transcript and then reread more actively by paying attention to, and thinking about the contents of each particular data item. During the reading of the transcript, notes were made of key descriptive words or points; and reflections upon the experiences and ideas from the reading were written down. Annotations to clarify the text were also made. After this initial exploration of the data, the data were taken to coding as the next step in qualitative analysis (Bazeley, 2013).

In this study, the structural coding method was employed to identify the structure imposed on the qualitative data set by the use of the interview schedule employed to focus the group interview in a manner that would ensure the required information was obtained (Guest et al., 2012). Saldaña (2013) asserts that a question-based code is more suitable both for interview transcripts, and qualitative studies employing multiple participants. With this coding method, the transcript was segmented based on the focus

group interview schedule questions as a structure guide; there was a clear beginning and end point in the transcript for each guide-driven text segment. In addition, all associated probes and responses from identifiable participants were captured within the segment related to a given question. Each question formed the basis for a structural code (Guest et al., 2012), a broad topic code (Bazeley, 2013), or a starting list of codes (Miles & Huberman, 1994). Such codes can be used as a starting strategy for organising the data, to be followed by more detailed coding (Bazeley, 2013; Richards, 2005). Accordingly, the topic code was employed to code the data of each text segment which were relevant to and provided a clear instance of the particular topic. A coding system was then established by developing a list of codes for each topic, sorting and connecting the codes sharing some characteristics based on similarity and regularity to create categories (Bazeley, 2013). After that, the researcher worked back and forth through the categories, transcript data and field notes to conceptualise relationship between categories (Saldaña, 2013). As a result, themes as a meaningful essence through the data were identified (Morse, 2008). This process was undertaken independently by the researcher in conjunction with suggestions from the research supervisors. The researcher and the supervisors finally reviewed and refined the initial themes and subthemes together to develop consistent coding, to make further, finer themes, and to visualise the data. This process was conducted manually using a pencil-and-paper tool and a large white board.

Analysing data

To analyse the data, Bazeley (2013) suggested that researchers repeat a *describe*, *compare*, *relate* sequence for each of themes and subthemes and then write preliminary results. Each theme and subtheme was described in terms of its characteristics and boundaries, compared for differences across cases and contexts, and related to other themes and subthemes. Consequently, the description of themes and subthemes including excerpts from the transcript was arranged under the appropriate theme and subtheme. Also, a visual diagram of relationships between themes and subthemes as well as analytic text clarifying and formalising the first finding were generated.

Refining analysis

The purpose of this step is to make sense of it all. Additionally, this step helps to deepen the initial explanation (Miles & Huberman, 1994). The researcher extracted and 104

explained the data through description and a visual diagram demonstrating coherence and firm evidence. This process resulted in conclusions that answered the research question.

Throughout the process of data analysis, the field notes undertaken during the focus group interview were used to add depth and context to the data collected. The notes helped to give contextual information surrounding the data and provided an additional perspective outside of the awareness of the researcher during the interview process.

4.3.5 Ensuring the trustworthiness of the qualitative descriptive study

Rigour reflects the overall quality of the process of data collection and analysis in qualitative research (Rebar & Gersch, 2015). The term 'rigour', however, is most often used in the quantitative paradigm (Morse, Barrett, Mayan, Olson, & Spiers, 2002). The quality of many qualitative studies is based on 'trustworthiness' (Harding & Whitehead, 2013; Houser, 2015), the parallel term for 'rigour' in qualitative research (Morse et al., 2002). Lincoln and Guba (1985) established four criteria for enhancing the trustworthiness of qualitative findings – credibility, transferability, dependability, and confirmability. These criteria for trustworthiness have long been considered the gold standard (Whittemore, Chase, & Mandle, 2001), being regarded as seminal and pertinent (Morse et al., 2002), and are still widely used today (Creswell, 2013) for qualitative research. In this study these four criteria were used to establish the trustworthiness of the qualitative findings.

Credibility

Credibility refers to confidence or believability in the truth of the findings of a study (Leininger, 1994; Lincoln & Guba, 1985). The strategies used in this study to ensure credibility were as follows:

Ensuring researcher credibility

To establish researcher credibility, personal and professional information that may have affected data collection, analysis and interpretation should be reported (Patton, 2002). The researcher had worked as a mental health nursing lecturer in a university in Thailand for over ten years prior to commencing her PhD studies in Australia. She has had extensive experience in teaching group process and conducting various types of group interventions. She is also a qualified MBSR teacher trained in Australia as detailed in section 4.2.8 of this chapter. In addition, the researcher debriefed regularly throughout the data collection and analysis phases with her research supervisors who are experienced qualitative researchers.

Methodological coherence

The credibility of qualitative studies must be related to their objective (Milne & Oberle, 2005), and design considerations (Whittemore et al., 2001). Consistent with this, Morse et al. (2002) suggested that ensuring methodological coherence which involves congruence between the research question and the research method, be used as a strategy to ensure rigour in qualitative research. In this study, a qualitative descriptive design using a focus group was chosen to explore a straightforward description of the experience of Thai nursing students who participated in the MBSR program. This research design and method also produced data-near analysis and low-inference interpretation where qualitative data were much less interpretively transformed than other theory-driven qualitative approaches (Sandelowski, 2010). Therefore, the study findings are likely to reflect the participants' perspectives.

Appropriate sampling decision

The participants who are most representative or have knowledge of the research topic can provide in-depth information relevant to the research question and ensure credibility of the findings (Miles, Huberman, & Saldaña, 2014; Morse et al., 2002). Accordingly, homogeneous purposive sampling was employed to recruit participants (Holloway & Wheeler, 2010; Polit & Beck, 2014) for this study as detailed in section 4.3.2 of this chapter.

Member checking

Member checking is 'the most crucial technique for establishing credibility' (Lincoln & Guba, 1985, p. 314). This strategy means that the data or findings are brought back to original participants for credibility checking as to the accuracy, completeness of interpretation, and fair representation of their perspectives (Holloway & Wheeler, 2010; Rebar & Gersch, 2015). The process of member checking for this study was undertaken in the School of Nursing, the University of Phayao when the researcher went back to Thailand to provide the 2-day intensive mindfulness workshop for control group

participants. The researcher invited the nine interested participants to join in a focus group for member checking. She then presented the Thai version of the preliminary findings consisting of themes, associated sub-themes (Appendix 31), and descriptions; and provided participants with an opportunity to discuss and verify the findings.

A concern for member checking as mentioned by Holloway and Wheeler (2010) is a close researcher-participant relationship that may prevent the participant from adopting a critical stance, for example, hesitating to disagree. In this study the researcher holds an academic staff position at the School of Nursing, the University of Phayao, where the study participants were undertaking the nursing program. However, she had left for Australia to undertake PhD studies before the participants enrolled in the nursing study. In addition, the information statement for the qualitative study clearly stated that the study was being conducted under the auspices of her position as a student researcher within the University of Newcastle; and the participants' responses to the (MBSR) focus group interview would also not affect any current or future relationships with the researcher. Nevertheless, it was possible that the participants might have built a close relationship with researcher as they had participated in the MBSR program led by the researcher. Thus, at the beginning of the focus group for member checking the researcher encouraged participants to speak freely and stressed again that feedback and comments on the preliminary findings would not have any impact on any future relationships with the researcher. All participants agreed that the findings represented their experiences and perspectives accurately and completely. Most participants expressed support for the themes and sub-themes using simple sentences such as 'It is mine [experience]", "It is hers/his [experience]", and "That is right [interpretation]'. Also, three participants stated that the findings reminded them of the importance of continuing to practice mindfulness and the enjoyment associated with practicing mindfulness.

Transferability

Transferability refers to whether particular findings can be transferred or are applicable to other similar participants in other similar contexts or situations (Lincoln & Guba, 1985); and retain the meanings, interpretations, and inferences from the original study (Leininger, 1994). Provision of detailed description of the study participants, setting and research process enables readers to make decisions regarding transferability (Creswell,

2013; Houser, 2015; Lincoln & Guba, 1985). The information described in section 4.3 (Qualitative descriptive design) of this chapter will assist readers to determine the extent to which the findings can be transferred to other university nursing students in Thailand or internationally. Information provided includes the context and process of the study, recruitment setting, participants who contributed data, data collection methods and timeframes for each point of data collection.

Dependability

Dependability refers to the repeatability of the findings with similar participants in similar contexts resulting in consistent findings (Houser, 2015; Lincoln & Guba, 1985). To establish dependability, the research process undertaken needs to be consistent, reasonably stable over time and across researchers and methods (Miles et al., 2014). With a clear decision trail made for the research process, other researchers who want to replicate the study can audit and follow the decision-making process of the researcher (Holloway & Wheeler, 2010). In the present study, the criterion of dependability was met through the provision of a clear outline of the research process as explained in the section 3.3.2 (Qualitative research approaches) of Chapter Three and section 4.3 of this chapter, including research design, method and procedures.

Confirmability

Confirmability refers to the characteristics of findings that obtain direct and often repeated affirmations with regard to the phenomena of study and participants' perspectives (Leininger, 1994), rather than the result of researcher's prior assumptions and pre-conceptions (Holloway & Wheeler, 2010). Confirmability involves relative neutrality and reasonable freedom from unacknowledged researcher biases as well as explicitness regarding the inevitable biases in method and procedures (Miles et al., 2014). Strategies used in this study to ensure confirmability of the findings included:

1) The detailed explanation of study methods and procedures of data collection and analysis to enable auditing the research process (Lincoln & Guba, 1985);

2) Excerpts from interview transcripts were used to provide details which demonstrate that the findings of the study are grounded in the data;

3) To the extent to which researchers can be considered to be instruments within the research process, it is important that those involved in the conduct of the research consciously and critically reflect on how personal values, biases and experiences might have influenced the study; this process is called as reflexivity (Creswell, 2013; Miles et al., 2014). In this qualitative study, the researcher used a reflective journal to describe and analyse her thoughts, motivations and actions in the context of the study. A reflection on the experience of undertaking doctoral research is provided in the final section of Chapter Seven. This reflective journal consists of two parts as suggested by Creswell (2013). In the first part the researcher wrote about her experiences with mindfulness practice and the MBSR program which was the phenomenon under investigation. In the second part the focus was on how these experiences might have shaped the researcher's thoughts and feelings about the interpretation of the data. The process of writing a reflective journal in which her beliefs and actions were carefully considered, ensured the researcher was in a better position to approach the topic honestly and openly (Streubert & Carpenter, 2011).

Trustworthiness in cross-language study

The qualitative data in this study were collected using the Thai language and were analysed and presented using the English language. The study was thus undertaken as a cross-language project in which a translator or interpreter is used to bridge the language barrier (Squires, 2009). Esposito (2001) stated that the important task in cross-language qualitative research is to translate the researcher's questions and meanings into a form understood by the participants (i.e. the focus group interview schedule) and then to translate the participants' communicated meanings into a form understood by the researcher (i.e. the focus group transcription). Translation-related decisions made by the researcher and the translation process are significant methodological challenges impacting upon the trustworthiness of such a study and its reported outcomes (Birbili, 2000; Squires, 2009). Accordingly, guidelines or criteria for evaluating transparency and trustworthiness of cross-language research are essential.

Squires (2009) established 14 criteria for ensuring cross-language trustworthiness grouped under four main criteria – conceptual equivalence, translator credentials, translator role/competence, and study methods. These criteria were synthesised by Squires from the methods literature discussing cross-language research. These were

then tested against 40 purposively selected cross-language research projects published in nursing and health sciences journals. The findings revealed only 6 of 40 articles met all 14 criteria. Currently, Squires' criteria are seen as the most comprehensive indicators against which to evaluate the quality of cross-language qualitative research (Croot, Lees, & Grant, 2011). In this study, Squires' criteria were utilised in planning how to systematically manage methodological challenges associated with language barriers and establish cross-language trustworthiness. The application of Squires' criteria to ensure trustworthiness of this cross-language qualitative study is summarised in Table 3. Following the table, further explanation of each criterion as it applies in this study is provided.

| 14 criteria to ensure cross-language trustworthiness | The present study |
|--------------------------------------------------------------------------|-------------------|
| Conceptual equivalence | |
| 1. Rational for why analysis occurred in chosen language, especially | \checkmark |
| if it was not the same language as the participants | |
| 2. Translation lexicon for multi-language studies to ensure conceptual | N/A |
| equivalence | |
| 3. Translation validated by qualified bilingual individual not directly | \checkmark |
| involved with data collection or initial translation | |
| Translator credentials | |
| 4. Translator's qualifications or previous experience with translation | \checkmark |
| 5. Researcher's level of language competence | \checkmark |
| 6. Researchers' or translators' identity in contrast to that of | \checkmark |
| participants | |
| Translator role | |
| 7. Translators' role in study | \checkmark |
| 8. At what points translation used in research process | \checkmark |
| 9. Who conducted analysis and in what language | \checkmark |
| 10. Rationale for using multiple translators if study took place in only | N/A |
| one language | |
| Methods | |
| 11. Research method fit for cross-language qualitative study | \checkmark |
| 12. Pilot tested translated interview guide prior to conducting study | IN PART |
| 13. Country of origin given of all participants, even if they came from | \checkmark |
| linguistically similar regions | |
| 14. Statement regarding possible effects of translation on findings | \checkmark |

Table 3: Application of Squires' criteria to ensure cross-language trustworthiness

 \checkmark = criteria met

IN PART = criteria met partially

N/A = non-applicable

Conceptual equivalence

Conceptual equivalence refers to a technically and conceptually accurate translated communication of a concept spoken by a study participant (Jandt, 2015).

1) A rational for why the analysis occurred in the chosen language, especially if it was not the same language as the participants

This qualitative descriptive study was undertaken in Thailand using the Thai language which is the native language of participants and the researcher (RHD candidate), and the data were analysed and presented using the English language. This was because the study is a part of the researcher's PhD studies undertaken in a Western country, and English is the language common to the researcher and her research supervisors. Furthermore, the research team wanted to ensure that research findings are accessible to a global population, rather than restricted to the Thai population only.

2) A translation lexicon for multi-language studies to ensure conceptual equivalence

This is non-applicable for this study as the translation was conducted from one language to another one (i.e. from Thai to English and from English to Thai). Thus, a translation lexicon was not required for this study.

3) The translation validated by a qualified bilingual individual not directly involved with data collection or the initial translation

The translated documents from English to Thai were the Information Sheet of the Qualitative Descriptive Study (Appendix 32, 33), the Consent Form of the Qualitative Descriptive Study (Appendix 34, 35), and the focus group interview schedule (Appendix 36, 37). The English version of these documents was reviewed and edited by the researcher's supervisors. The researcher initially translated the documents from English to Thai. The translated documents were then validated by the same qualified bilingual validator as used for the RCT study, who was not involved with data collection and initial translation. After data collection, the Thai transcript and field notes were initially translated to English for analysis by the researcher, and were then validated by the qualified bilingual validator. Prior to data analysis, the researcher and the qualified bilingual validator reviewed, discussed and clarified changes to the translated transcript.

Translator credentials

4) The translator's qualifications or previous experience with translation

The researcher as an initial translator and the qualified bilingual validator met the required translator qualifications as described in the section entitled 'cross-language validity' of the RCT study in this chapter.

Squires (2009) recommended that translators employed in a cross-language study possess certification from a professional translator's association or meets the standards described by the translator's association. In this study, instead of hiring a professional or certified translator, the researcher conducted all initial translations and the qualified bilingual validator verified accuracy of the translated documents. The research team considered use of this criterion as an adaptive guide rather than a technical fix for a number of reasons. First, Guest et al. (2013) asserted that the researcher who conducted the interview and performed the translation of transcription could enhance the validity of the process as she more clearly articulated the thoughts or ideas into their English equivalents. Second, the researcher was qualified as suggested by Choi, Kushner, Mill, and Lai (2012), i.e. a translator who fully understand the culture and language of participants would reduce potential treats to the validity of translated data. The researcher not only is a Northern Thai and native Thai speaker, but worked as a nursing lecturer in the study university for four years prior to commencing her PhD studies in Australia. Third, a translator's goal is to develop transcripts that are accurate, clear and as close to reality as possible (Esposito, 2001). To achieve this goal, the person well qualified to translate the transcription of this study should be one with knowledge of the topic under investigation (MBSR program) or closest to participant group.

5) Researcher's level of language competence

The researcher is highly competent in both Thai and the Northern Thai dialect and has been developing sociolinguistic language competence in English for five years. The research supervisors are monolingual English speaking experienced researchers.

6) Researchers' or translators' identity in contrast to that of participants

The researcher and the qualified bilingual validator are native Thai speakers, as are the participants. The research supervisors are Australian/New Zealand English speakers.

Translator role

7) The translators' role in study

The researcher conducted all initial translations and the qualified bilingual validator verified accuracy of the translated documents as detailed above.

8) At what point(s) translation used during the research process

As described in item 3) of the topic entitled 'Conceptual equivalence' above.

9) Who conducted the analysis and in what language it took place

The qualitative data were analysed using English language by the researcher under supervision of the research supervisors.

10) A rationale for using multiple translators when the study took place in only one language

This is non-applicable for this study as a single translator was used for the translation.

Methods

11) Research method fit for cross-language qualitative study

The qualitative research approach chosen was qualitative description using a focus group interview as the method of data collection. This method produces data-near analysis and low-inference interpretation, as well as presenting straight forward comprehensive summaries of an experience or an event in everyday language similar to the participants' own language (Neergaard et al., 2009; Polit & Beck, 2014; Sandelowski, 2010). It could thus capture the experiences of participants with fewer methodological issues associated with translation (Squires, 2009). The study is considered to have satisfied this criterion.

12) Pilot tested the translated interview guide prior to conducting study

The study partially met this criterion although the translated interview schedule was not tested with pilot participants. Rather, the researcher worked with the Thai research assistant who was a non-participant observer and field note taker for the focus group to review and discuss the interview schedule.

13) Country of origin given of all participants, even if they came from linguistically similar regions

All participants were residents in Thailand.

14) Statement regarding possible effects of translation on findings

The section entitled 'Trustworthiness in cross-language study' described above indicates consideration of the potential impact of translation on analysis and findings.

4.4 ETHICAL CONSIDERATIONS

Ethics approvals to conduct the study were obtained from the University of Newcastle Human Research Ethics Committee (H-2012-0347; Appendix 38) and the University of Phayao Human Research Ethics Committee (HE 56-02-04-0008; Appendix 39). Permission to conduct the study was also received from the President of the University of Phayao (Appendix 40). Prospective participants were fully informed about the research procedure and issued with Information Statements; and Consent forms were signed by each participant who voluntarily consented. The statements clearly indicated that due ethical concern and attention had been given to protect participants' rights with an emphasis on beneficence, respect for human dignity and justice (Polit & Beck, 2014).

4.4.1 Beneficence

Beneficence involves maximizing benefits and minimizing harm. In the RCT study component of the project participants in the experimental group were likely to benefit by learning to use mindfulness techniques to manage stress. Participants in the control group did not attend the MBSR program, but they were able to access services from the Mental Health Counselling Centre, School of Nursing, the University of Phayao on an as-needed basis. They were also offered the opportunity of being involved in the 2-day intensive mindfulness workshop led by the researcher after completion of study. Although the likelihood of participants experiencing lasting harm as a result of their participation in this study was very low, it was possible that during participation in the MBSR program, some participants might have experienced temporary bodily discomfort including pain, numbness, cramping in the legs, and drowsiness. The participants were advised to reposition themselves if they were feeling uncomfortable; and the researcher was able to provide assistance as required to ease discomfort. In addition, it was possible that some participants in both groups who completed the outcome measures might indicate that they were in need of further support, assessment or referral. In this case, the researcher planned to advise or refer the participants to counselling services provided by the Mental Health Counselling Centre, School of Nursing, the University of Phayao.

In the qualitative study participants who joined the focus group interview had an opportunity to tell the researcher what it was like to take part in the MBSR program. There were no risks associated with participating in this component of the overall study.

4.4.2 Respect for human dignity

Respect for human dignity includes the right to full disclosure and to self-determination. In this study, the informed consent included a clear statement of the study, the participants' right to decline participation and possible risks and benefits. Participation in the study was entirely voluntary. Only the participants who gave their informed consent were included in the study. Whether or not participants decided to participate, their decision would not disadvantage them in any way. It was also made clear to participants that they had the right to withdraw from the study at any time without giving a reason and to withdraw any data which identified them.

4.4.3 Justice

Justice includes the right to fair treatment and to privacy. Participants were informed that declining to participate or withdrawing from the study would not affect their status in the undergraduate nursing program at the University of Phayao as well as any current or future relationships with the researcher who holds an academic staff position at the University of Phayao. If participants wished to make a complaint about the study but were unwilling to do so directly to the researcher, they could send their complaint to the Vice-President for research and Quality Assurance of the University of Phayao who was the ethics representative in Thailand for the study (Appendix 41). He would then pass the complaint on to the Human Research Ethics Office at the University of Newcastle. To protect participants' privacy, any information that could be used to identify participants at all times was treated as private and confidential; only the research team

members would have access to this information. All data provided within written reports, publications or presentations from the study were de-identified. During the active phase of the study, all electronic files containing research data were password protected, and all paper records were kept in a locked filling cabinet in the School of Nursing & Midwifery at the University of Newcastle. After completion of the study, all electronic research data will be transferred to the University on CDs, and the hard copies of documents will be shredded. Collected data will be securely stored for the required period of five years.

4.5 SUMMARY

This chapter has outlined in detail the research designs and research methods implemented to undertake the study. An embedded experimental mixed methods design was employed to conduct the overall study; comprising an RCT study as the core quantitative component and a qualitative descriptive study as the embedded qualitative component. The methods of the parallel group randomised controlled design were detailed following the CONSORT statement in order to answer the main research question 'Can an MBSR program reduce perceived stress and depression and enhance self-esteem and mindfulness in Thai nursing student participating in the MBSR program?' Procedures for ensuring the rigor of the RCT study have also been explained. A focus group interview was used as the method of qualitative data collection. The data were then analysed based on qualitative descriptive analysis to answer the second research question 'How do Thai nursing students taking part in the MBSR program describe their experience of participation in the program after completion of the program?' The procedures undertaken to establish the trustworthiness of the qualitative findings are described. The study was conducted following the approved ethics protocol with ethical concern for protecting participants' rights. The following chapter will present the results of the RCT study as conducted using the research methods explained in this chapter.

CHAPTER FIVE: RESULTS OF THE RANDOMISED CONTROLLED TRIAL

5.1 INTRODUCTION

The results of the randomised controlled trial undertaken using the methods described in the previous chapter are presented in this chapter, in accordance with the requirements of the CONSORT 2010 statement (Moher et al., 2010; Schulz et al., 2010). Statistical analyses were undertaken with the assistance of Dr Christopher Oldmeadow and Mr Joseph Hanna, statisticians from the Clinical Research Design, IT and Statistical Support (CReDITSS), Public Health Stream, Hunter Medical Research Institute, NSW, Australia.

The chapter commences by presenting data on the demographic characteristics of the study participants. This is followed by coverage of the effects of the intervention on outcome measures for the control and experimental groups across time analysed both over the whole sample and by sex subgroups. The effects of the mediators on the outcomes are also reported. The chapter concludes by addressing potential harms during the conduct of the study.

5.2 PARTICIPANT FLOW

Recruitment was commenced on 2nd September 2013 and follow up was completed on 20th July 2014. One hundred and twenty-seven eligible Thai nursing students returned their signed consent forms indicating a willingness to participate in the study. All of the participants undertook baseline assessment prior to randomisation. They were then assigned randomly into two groups: 64 to the control arm and 63 to the experimental arm. The experimental participants were divided into three subgroups. Full details of randomisation and allocation appear in section 4.2.5 of Chapter Four. Throughout the RCT study, only one participant in the control group dropped out, during the week 8 follow-up measurement point, due to withdrawal from University study. There was an 84% (53/63) attendance rate for all MBSR classes (8 classes and a full day retreat) in the experimental group. Of the 10 participants who missed one or more MBSR classes, three did not attend four classes due to study reasons; and seven did not attend one class

due to University activities (4), illness (2), or family activities (1). One hundred and twenty-six participants (99.2%) completed the study and follow-up measurements. Based on intention-to-treat analysis, all 127 randomised participants were analysed. Figure 6 outlines participant flow throughout the trial.



Figure 6: CONSORT flow diagram of participants throughout the trial

5.3 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

The demographic data of the participants at baseline were analysed using descriptive statistics and are presented separately by each of the control and experimental groups as displayed in Table 4. Formal tests of differences in participant characteristics are not presented since randomisation ensures any differences that are found are type-1 errors. There were fairly similar distributions of each variable for the control and experimental groups.

The mean age of the control group participants was 19.08 years with a standard deviation of 0.93 and a range from 17 to 21 years. The mean age of the experimental group participants was 19.27 years with a standard deviation of 0.79 and a range from 18 to 21 years. The majority of participants in the control and experimental groups were female (95% and 87%). There was a slightly higher fraction of males in the experimental group. Over half the participants in the control group (56%) and the experimental group (59%) were undertaking the second year of nursing studies, while the remainder were studying in the first year. All the control group participants and 98.4% of the experimental group participants were Buddhists, while only one experimental group participant (1.58%) was Christian. Most participants in the control and experimental groups had parents living together (70% and 62%); and had sufficient financial support in terms of an allowance (92% and 94%). More than half the participants in the control group (55%) and the experimental group (59%) reported having had previous experience of mindfulness practice. These 72 participants were the second year nursing students who attended a 2-day mindfulness course provided by the University of Phayao for university students in the year prior to participating in the present study. The mean accumulated grade point average (GPA) of the control group participants was 3.01 (SD. = 0.41) with a range from 2.14 to 3.80, while the mean accumulated GPA of the experimental group participants was 2.86 (SD. = 0.42) with a range from 1.75 to 3.54.

In summary, the demographic data of the control and experimental participants were similar including age, gender, year of nursing study, family status, sufficiency of allowance, experience of mindfulness practice and accumulated grade point average. The two groups were thus considered as having an equal foundation for further comparisons.

| | Control group | Experimental | Total |
|------------------------------------|------------------|---------------|--------------|
| Demographic characteristics | (n= 64) | group (n= 63) | (n= 127) |
| Age (years) | | | |
| 17 | 1 (1.6%) | | 1 (0.8%) |
| 18 | 18 (28%) | 9 (14%) | 27 (21%) |
| 19 | 24 (38%) | 32 (51%) | 56 (44%) |
| 20 | 17 (27%) | 18 (29%) | 35 (28%) |
| 21 | 4 (6.3%) | 4 (6.3%) | 8 (6.3%) |
| Range | 17-21 | 18-21 | 17-21 |
| Mean (SD) | 19.08 (0.93) | 19.27 (0.79) | 19.17 (0.86) |
| Gender | | | |
| Female | 61 (95%) | 55 (87%) | 116 (91%) |
| Male | 3 (4.7%) | 8 (13%) | 11 (8.7%) |
| Year of nursing study | | | |
| First year | 28 (44%) | 26 (41%) | 54 (43%) |
| Second year | 36 (56%) | 37 (59%) | 73 (57%) |
| Religion | | | |
| Buddhism | 64(100%) | 62(98.4%) | 126(99.2%) |
| Christianity | 0(0%) | 1(1.58%) | 1(0.8%) |
| Family status | | | |
| Parents living together | 45 (70%) | 39 (62%) | 84 (66%) |
| Parents separated or divorced | 7 (11%) | 10 (16%) | 17 (13%) |
| Father deceased | 10 (16%) | 11 (17%) | 21 (17%) |
| Mother deceased | | 2 (3.2%) | 2 (1.6%) |
| Both father and mother deceased | 2 (3.1%) | 1 (1.6%) | 3 (2.4%) |
| Sufficiency of participants | | | |
| allowance | | | |
| Sufficient | 59 (92%) | 59 (94%) | 118 (93%) |
| Insufficient | 5 (7.8%) | 4 (6.3%) | 9 (7.1%) |
| Experience of mindfulness practice | | | |
| No | 29 (45%) | 26 (41%) | 55 (43%) |
| Yes | 35 (55%) | 37 (59%) | 72 (57%) |
| Accumulated grade point average | | | |
| Range | 2.14-3.80 | 1.75-3.54 | 1.75-3.80 |
| Mean (SD) | 3.01 (0.41) | 2.86 (0.42) | 2.94 (0.42) |

Table 4: Demographic characteristics of participants

5.4 OUTCOME MEASURES

The analysis was conducted on an intention-to-treat basis, and involved all participants who were randomly assigned. Linear mixed models were employed to provide repeated measures analysis of data at each time point in order to identify whether there were any changes over the time periods of the study. The primary outcome measures were perceived stress, depression, self-esteem, and mindfulness; and the secondary outcome measures were the utilisation of health and counselling services, and the accumulated grade point average (GPA) scores.

5.4.1 Perceived stress

The perceived stress scores were measured using the Perceived Stress Scale (PSS-10) Thai version.

Changes in perceived stress of the experimental and control groups across time

As Figure 7 and Table 5 below show, compared to baseline, there was a significant decrease in the perceived stress score for the experimental group immediately on completion of the MBSR intervention (week 8) (mean = 2.52, 95% CI = 1.36 - 3.69) and at the follow-up (week 16) (mean = 2.03, 95% CI = 0.60 - 3.47). In the control group, the decrease in perceived stress scores was slightly less than for the experimental group from baseline to week 8 (mean = 0.07, 95% CI = 0.93 - 1.07) and week 16 (mean = 0.05, 95% CI = 1.09 - 1.20). The perceived stress scores increased at week 32 follow-up as compared to baseline for both groups. However, the experimental group perceived stress score (mean = 0.73, 95% CI = 0.67 - 2.13) was lower than that of the control group (mean = 2.47, 95% CI = 1.20 - 3.74).

In summary, for the experimental group there was a significant reduction in perceived stress at week 8 and week 16 as compared to baseline. However, the effect was non-significant at week 32 from baseline.

Difference in change of perceived stress between the control and experimental groups

There was a significant difference between the control and experimental groups for change overtime in perceived stress scores (p = .0190). The experimental group had a significantly lower perceived stress score than the control group at weeks 8 and 16 as

compared to baseline, but not at week 32. The perceived stress scores for the experimental group were less than those of the control group by 2.45, 1.98, and 1.74 immediately on completion of the intervention (week 8) (95% CI = 0.92-3.99), at week 16 (95% CI = 0.14-3.82), and week 32 (95% CI = 0.15-3.63) from baseline respectively. The results are presented in Table 5.



Figure 7: Model means for overall perceived stress score at each follow-up time

| Outcome | Time | Mean change | e from baseline | Adjusted | Time X |
|-----------|----------|----------------------|-----------------|----------------|---------|
| | from | (959 | (95% CI) | | Group |
| | baseline | Control Experimental | | difference | p-value |
| Perceived | week 8 | -0.07 | -2.52 | -2.45 | .0190 |
| Stress | | (-1.07, 0.93) | (-3.69, -1.36) | (-3.99, -0.92) | |
| | week 16 | -0.05 | -2.03 | -1.98 | |
| | | (-1.20, 1.09) | (-3.47, -0.60) | (-3.82, -0.14) | |
| | week 32 | 2.47 | 0.73 | -1.74 | |
| | | (1.20, 3.74) | (-0.67, 2.13) | (-3.63, 0.15) | |

 Table 5: Mean change in perceived stress from baseline to all time points and difference in change of perceived stress between the treatment groups

5.4.2 Mindfulness

The mindfulness scores were measured using the Mindful Attention Awareness Scale (MAAS) Thai version.

Changes in mindfulness of the experimental and control groups across time

As Figure 8 and Table 6 below show, there was a significant improvement in mindfulness at all-time points as compared to baseline for the experimental group. The mindfulness scores of the experimental group increased markedly from baseline to immediately on completion of the intervention (week 8) (mean = 4.75, 95% CI = 3.15 - 6.34), week 16 follow-up (mean = 3.00, 95% CI = 1.56 - 4.44), and week 32 follow-up (mean = 5.63, 95% CI = 4.19 - 7.08). In the control group, the mindfulness scores increased slightly from baseline to week 8 (mean = 1.57, 95% CI = 0.12 - 3.25), week 16 (mean = 0.31, 95% CI = 1.51 - 2.13), and week 32 (mean = 0.61, 95% CI = 1.07 - 2.30).

Difference in change of mindfulness between the control and experimental groups

There was a significant difference between the control and experimental group for change overtime in mindfulness scores (p = .0002). The experimental group had significantly higher mindfulness scores than the control group at all-time points as compared to baseline. There was a difference of 3.18, 2.69, and 5.02 in the mindfulness scores for the experimental group compared to the control group immediately completion of the intervention (week8) (95% CI = 0.86 - 5.50), at week 16 follow-up (95% CI = 0.37 - 5.01), and week 32 follow-up (95% CI = 2.80 - 7.24), respectively. The results are presented in Table 6.



Figure 8: Model means for overall mindfulness score at each follow-up time

| | Time | Mean change from baseline | | Adjusted | Time X |
|-------------|----------|---------------------------|--------------|--------------|---------|
| Outcome | from | (959 | % CI) | mean | Group |
| | baseline | Control Experimental | | difference | p-value |
| Mindfulness | week 8 | 1.57 | 4.75 | 3.18 | .0002 |
| | | (-0.12, 3.25) | (3.15, 6.34) | (0.86, 5.50) | |
| | week 16 | 0.31 | 3.00 | 2.69 | |
| | | (-1.51, 2.13) | (1.56, 4.44) | (0.37, 5.01) | |
| | week 32 | 0.61 | 5.63 | 5.02 | |
| | | (-1.07, 2.30) | (4.19, 7.08) | (2.80, 7.24) | |

 Table 6: Mean change in mindfulness from baseline to all time points and difference in change of mindfulness between the treatment groups

5.4.3 Self-esteem

The self-esteem scores were measured using the Rosenberg Self-Esteem Scale (RSES) Thai version.

Changes in self-esteem of the experimental and control groups across time

As Figure 9 and Table 7 below show, there was a significant improvement in selfesteem at all-time points as compared to baseline for the experimental group. The experimental group self-esteem scores increased markedly from baseline to immediately on completion of the intervention (week 8) (mean = 1.81, 95% CI = 1.07 - 2.55), week 16 follow-up (mean = 2.16, 95% CI = 1.32 - 3.00), and week 32 follow-up (mean = 2.49, 95% CI = 1.77 - 3.21). In the control group, the self-esteem scores increased slightly from baseline to week 8 (mean = 0.25, 95% CI = 0.43 - 0.94), week 16 (mean = 0.33, 95% CI = 0.55 - 1.22) and week 32 (mean = 0.10, 95% CI = 0.70 - 0.89).

Difference in change of self-esteem between the control and experimental groups

There was a significant difference between the control and experimental groups for change overtime in self-esteem scores (p < .0001). The experimental group had significantly higher self-esteem scores than the control group at all-time points as compared to baseline. There was a difference of 1.56, 1.83, and 2.59 in the self-esteem scores for the experimental group compared to the control group at the end of the MBSR intervention (week 8) (95% CI = 0.54-2.57), week 16 follow-up (95% CI = 0.61-3.04), and week 32 follow-up (95% CI = 1.51-3.66), respectively. The results are presented in Table 7.



Figure 9: Model means for overall self-esteem score at each follow-up time

| Outcome | Time | Mean change | e from baseline | Adjusted | Time X |
|---------|----------|---------------|----------------------|--------------|---------|
| | from | (959 | % CI) | mean | Group |
| | baseline | Control | Control Experimental | | p-value |
| Self- | week 8 | 0.25 | 1.81 | 1.56 | <.0001 |
| esteem | | (-0.43, 0.94) | (1.07, 2.55) | (0.54, 2.57) | |
| | week 16 | 0.33 | 2.16 | 1.83 | |
| | | (-0.55, 1.22) | (1.32, 3.00) | (0.61, 3.04) | |
| | week 32 | -0.10 | 2.49 | 2.59 | |
| | | (-0.89, 0.70) | (1.77, 3.21) | (1.51, 3.66) | |

 Table 7: Mean change in self-esteem from baseline to all time points and difference

 in change of self-esteem between the treatment groups

5.4.4 Depression

The depression scores were measured using the Centre for Epidemiology Studies-Depression Scale (CES-D) Thai version.

Changes in depression scores of the experimental and control groups across time

Figure 10 and Table 8 below show that there was no significant decrease in CES-D scores for depression in the experimental group. The depression scores as compared to baseline for the experimental group decreased immediately on completion of the intervention (week 8) (mean = 1.78, 95% CI = 0.37 - 3.18), and decreased slightly at week 16 from baseline (mean = 0.33, 95% CI = 1.54 - 2.21). However, the depression score increased at week 32 from baseline (mean = 0.65, 95% CI = 1.02 - 2.32). In the control group, the depression score decreased slightly from baseline to week 8 (mean = 0.03, 95% CI = 1.34 - 1.40), but increased at both week 16 (mean = 0.84, 95% CI = 1.21 - 2.90) and week 32 (mean = 3.35, 95% CI = 1.01 - 5.69).

Difference in change of depression scores between the control and experimental groups

There was no significant difference between the control and experimental groups for change overtime in CES-D scores for depression (p = .1904). That is, there was no treatment effect on CES-D scores for depression. There was a difference of 1.75, 1.18, and 2.70 in the depression scores for the experimental group compared to the control group at week 8 (95% CI = 0.22 - 3.71), week 16 (95% CI = 1.60 - 3.96), and week 32 (95% CI = 0.17 - 5.58) from baseline, respectively. The results are presented in Table 8.



Figure 10: Model means for overall depression score at each follow-up time

| Outcome | Time | Mean change from baseline | | Adjusted | Time X |
|------------|----------|---------------------------|----------------|---------------|---------|
| | from | (959 | % CI) | mean | Group |
| | baseline | Control Experimental | | difference | p-value |
| Depression | week 8 | -0.03 | -1.78 | -1.75 | .1904 |
| | | (-1.40, 1.34) | (-3.18, -0.37) | (-3.71, 0.22) | |
| | week 16 | 0.84 | -0.33 | -1.18 | |
| | | (-1.21, 2.90) | (-2.21, 1.54) | (-3.96, 1.60) | |
| | week 32 | 3.35 | 0.65 | -2.70 | |
| | | (1.01, 5.69) | (-1.02, 2.32) | (-5.58, 0.17) | |

 Table 8: Mean change in depression from baseline to all time points and difference

 in change of depression between the treatment groups

5.4.5 Utilisation of health and counselling services

Health and counselling service utilisation including kinds of accessed services, reason for access, and frequency of access was assessed using the Health and Counselling Service Utilisation Questionnaire developed by the researcher.

The data on the utilisation of health and counselling services were not analysed because only two experimental group participants reported use of health and counselling services at the week 16 follow-up point of measurement. One participant used the Health Service Centre, the University of Phayao on one occasion, in relation to a health problem affecting study. The other participant used a health service other than that provided by the University of Phayao once, in relation to study-related stress.

5.4.6 Accumulated grade point average (GPA)

Participants' accumulated GPA for trimesters 1/2013, 2/2013, 3/2013, and 1/2014 were collected for the baseline, week 8, week 16, and week 32 points of measurements, respectively.

Changes in GPA of the experimental and control groups across time

Figure 11 and Table 9 below show that there was no significant increase in GPAs for the experimental group. As compared to baseline the GPAs for the experimental group increased at the end of the MBSR intervention (week 8) (mean = 0.15, 95% CI = 0.01-0.28), the follow-up (week 16) (mean = 0.37, 95% CI = 0.24-0.50), the follow-up (week 32) (mean = 0.22, 95% CI = 0.06-0.38). In the control group, the GPAs increased from baseline to week 8 (mean = 0.05, 95% CI = 0.07-0.17), week 16 (mean = 0.25, 95% CI = 0.15-0.36), and week 32 (mean = 0.10, 95% CI = 0.05-0.26).

Difference in change of GPA between the control and experimental group

There was no significant difference between the control and experimental groups for change overtime in GPA (p = .5917). That is, there was no a treatment effect on participants' GPAs. There was a difference of 0.10, 0.12, and 0.12 in the GPA scores for the experimental group compared to the control group at week 8 (95% CI = 0.08-0.28), week 16 (95% CI = 0.05 - 0.28), and week 32 (95% CI = 0.10-0.34), from baseline respectively. The results are presented in Table 9.



Figure 11: Model means for grade point average at each follow-up time

| Outcome | Time | Mean change | e from baseline | Adjusted | Time X |
|---------|----------|----------------------|-----------------|---------------|---------|
| | from | (95% | % CI) | mean | Group |
| | baseline | Control Experimental | | difference | p-value |
| GPA | week 8 | 0.05 | 0.15 | 0.10 | .5917 |
| | | (-0.07, 0.17) | (0.01, 0.28) | (-0.08, 0.28) | |
| | week 16 | 0.25 | 0.37 | 0.12 | |
| | | (0.15, 0.36) | (0.24, 0.50) | (-0.05, 0.28) | |
| | week 32 | 0.10 | 0.22 | 0.12 | |
| | | (-0.05, 0.26) | (0.06, 0.38) | (-0.10, 0.34) | |

 Table 9: Mean change in grade point average from baseline to all time points and difference in change of grade point average between the treatment groups

5.4.7 Outcome measures for females

Following analysis of the whole of group data (n = 127) referred to above, subgroup analysis by sex was conducted. As indicated in the demographic data presented earlier in this chapter, female participants constituted the majority of the sample (females = 116 and males = 11). The number of males was insufficient to perform analysis on that sub-group. Table 10 presents the results of outcome measures for females only.

| Outcome | Time | Mean change from baseline | | Adjusted | Time X |
|-------------|----------|---------------------------|----------------|---------------|---------|
| | from | (95) | % CI) | mean | Group |
| | baseline | Control | Experimental | difference | p-value |
| Perceived | week 8 | -0.01 | -2.55 | -2.53 | .0309 |
| stress | | (-1.04, 1.01) | (-3.86, -1.23) | (-4.20,-0.87) | |
| | week 16 | -0.13 | -2.00 | -1.87 | |
| | | (-1.32, 1.06) | (-3.59, -0.41) | (-3.86, 0.12) | |
| | week 32 | 2.56 | 0.80 | -1.76 | |
| | | (1.24, 3.88) | (-0.77, 2.37) | (-3.81, 0.29) | |
| Mindfulness | week 8 | 1.56 | 5.04 | 3.47 | .0003 |
| | | (-0.19, 3.32) | (3.33, 6.74) | (1.02, 5.92) | |
| | week 16 | 0.45 | 2.73 | 2.28 | |
| | | (-1.43, 2.33) | (1.15, 4.30) | (-0.17, 4.73) | |
| | week 32 | 0.60 | 5.44 | 4.84 | |
| | | (-1.14, 2.34) | (3.95, 6.92) | (2.55, 7.13) | |
| Self-esteem | week 8 | 0.33 | 1.82 | 1.48 | .0003 |
| | | (-0.36, 1.03) | (1.07, 2.57) | (0.46, 2.51) | |
| | week 16 | 0.50 | 2.00 | 1.50 | |
| | | (-0.37, 1.37) | (1.09, 2.91) | (0.24, 2.76) | |
| | week 32 | 0.07 | 2.29 | 2.22 | |
| | | (-0.70, 0.83) | (1.54, 3.04) | (1.15, 3.30) | |
| Depression | week 8 | -0.27 | -1.64 | -1.37 | .2388 |
| | | (-1.67, 1.13) | (-3.21, -0.06) | (-3.47, 0.74) | |
| | week 16 | 0.48 | 0.05 | -0.43 | |
| | | (-1.59, 2.55) | (-2.03, 2.14) | (-3.36, 2.51) | |
| | week 32 | 3.43 | 0.91 | -2.52 | |
| | | (1.11, 5.75) | (-0.83, 2.64) | (-5.42, 0.37) | |
| Grade Point | week 8 | 0.04 | 0.18 | 0.15 | .3555 |
| Average | | (-0.09, 0.16) | (0.04, 0.33) | (-0.04, 0.34) | |
| | week 16 | 0.24 | 0.38 | 0.14 | |
| | | (0.13, 0.35) | (0.25, 0.51) | (-0.03, 0.32) | |
| | week 32 | 0.09 | 0.24 | 0.16 | |
| | | (-0.07, 0.24) | (0.07, 0.42) | (-0.08, 0.39) | |

Table 10: Mean change in outcomes from baseline to all time points and differencein change of outcomes between the treatment groups for females

Changes in outcomes of the experimental and control groups across time for females

Table 10 shows changes in perceived stress, mindfulness, self-esteem, depression and accumulated grade point average across time for female participants.

1) Perceived stress

As compared to baseline, there was significant decrease in perceived stress scores for the experimental group at week 8 (mean = 2.55, 95% CI = 1.23-3.86) and week 16 (mean = 2.00, 95% CI = 0.41-3.59). In the control group, the decrease in stress scores was slightly less than that for the experimental group from baseline to week 8 (mean = 0.01, 95% CI = 1.01-1.04) and week 16 (mean = 0.13, 95% CI = 1.06-1.32). The perceived stress scores increased at week 32 as compared to baseline for both the experimental and control groups. However, the experimental group perceived stress score (mean = 0.80, 95% CI = 0.77-2.37) was lower than that of the control group (mean = 2.56, 95% CI = 1.24-3.88). In summary, for the experimental group there was a significant reduction in perceived stress as compared to baseline at week 8 and week 16. However, the effect was non-significant at week 32 from baseline.

2) Mindfulness

There was a significant improvement in mindfulness at all-time points as compared to baseline for the experimental group. The mindfulness scores of the experimental group increased markedly from baseline to immediately on completion of the MBSR intervention (week 8) (mean = 5.04, 95% CI = 3.33-6.74), week 16 (mean = 2.73, 95% CI = 1.15-4.30), and week 32 (mean = 5.44, 95% CI = 3.95-6.92). In the control group, the mindfulness scores increased slightly from baseline to week 8 (mean = 1.56, 95% CI = 0.19-3.32), week 16 (mean = 0.45, 95% CI = 1.43-2.33), and week 32 (mean = 0.60, 95% CI = 1.14-2.34).

3) Self-esteem

There was a significant improvement in self-esteem at all-time points as compared to baseline for the experimental group. The experimental group self-esteem scores increased markedly from baseline to immediately on completion of the MBSR intervention (week 8) (mean =1.82, 95% CI = 1.07 -2.57), week 16 (mean = 2.00, 95% CI = 1.09-2.91), and week 32 (mean = 2.29, 95% CI = 1.54-3.04). In the control group,

the self-esteem scores increased slightly from baseline to week 8 (mean =0.33, 95% CI = 0.36-1.03), week 16 (mean = 0.50, 95% CI = 0.37-1.37) and week 32 (mean = 0.07, 95% CI = 0.70-0.83).

4) Depression

There was no significant decrease in CES-D scores for depression for the experimental group. The depression scores as compared to baseline for the experimental group decreased immediately on completion of the MBSR intervention (week 8) (mean = 1.64, 95% CI = 0.06-3.21), but increased slightly at week 16 (mean = 0.05, 95% CI = 2.03-2.14) and week 32 from baseline (mean = 0.91, 95% CI = 0.83-2.64). In the control group, the depression scores decreased slightly from baseline to week 8 (mean = 0.27, 95% CI = 1.13-1.67), but increased at week 16 (mean = 0.48, 95% CI = 1.59-2.55) and week 32 (mean = 3.43, 95% CI = 1.11-5.75).

5) Accumulated grade point average

There was no significant increase in GPA for the experimental group. As compared to baseline the GPA for the experimental group increased immediately on completion of the MBSR intervention (week 8) (mean = 0.18, 95% CI = 0.04-0.33), at week 16 (mean = 0.38, 95% CI = 0.25-0.51) and week 32 (mean = 0.24, 95% CI = 0.07-0.42). In the control group, the GPAs increased from baseline to week 8 (mean = 0.04, 95% CI = 0.04-0.35) and week 32 (mean = 0.04, 95% CI = 0.07-0.42).

Differences in changes of outcomes between the control and experimental groups for females

Table 10 shows differences in perceived stress, mindfulness, self-esteem, depression and accumulated grade point average for female participants between the control and experimental groups.

1) Perceived stress

There was a significant difference between the control and experimental groups for change overtime in perceived stress scores (p = .0309). The experimental group had significantly lower perceived stress scores than the control group at week 8 as compared to baseline, but not at weeks 16 and 32. There was a difference of 2.53, 1.87, and 1.76 in

the perceived stress scores for the experimental group compared to the control group at week 8 (95% CI = 0.87-4.20), week 16 (95% CI = 0.12-3.86), and week 32 (95% CI = 0.29-3.81), respectively.

2) Mindfulness

There was a significant difference between the control and experimental groups for change overtime in mindfulness scores (p = .0003). The experimental group had significantly higher mindfulness scores than the control group at weeks 8 and 32, but not at week 16 as compared to baseline. There was a difference of 3.47, 2.28, and 4.84 in the mindfulness scores for the experimental group compared to the control group at week 8 (95% CI = 1.02-5.92), week 16 (95% CI = 0.17-4.73), and week 32 (95% CI = 2.55-7.13) from baseline, respectively.

3) Self-esteem

There was a significant difference between the control and experimental groups for change overtime in self-esteem scores (p = .0003). The experimental group had significantly higher self-esteem scores than the control group at all-time points as compared to baseline. There was a difference of 1.48, 1.50, and 2.22 in the self-esteem scores for the experimental group compared to the control group at week 8 follow-up (95% CI = 0.46-2.51), week 16 (95% CI = 0.24-2.76), and week 32 (95% CI = 1.15-3.30) from baseline, respectively.

4) Depression

There was no significant difference between the control and experimental groups for change overtime in CES-D scores for depression (p = .2388). That is, there was no a treatment effect on the CES-D scores for depression. There was a difference of 1.37, 0.43, and 2.52 in the depression scores for the experimental group compared to the control group at week 8 (95% CI = 0.74-3.47), week 16 (95% CI = 2.51-3.36), and week 32 (95% CI = 0.37-5.42) from baseline, respectively.

5) Accumulated grade point average

There was no significant difference between the control and experimental groups for change overtime in GPA (p = .3555). That is, there was no treatment effect on GPAs. There was a difference of 0.15, 0.14, and 0.16 in the GPA scores for the experimental

group compared to the control group at week 8 (95% CI = 0.04 - 0.34), week 16 (95% CI = 0.03-0.32), and week 32 (95% CI = 0.08-0.39) from baseline, respectively.

5.5 THE EFFECTS OF MEDIATORS ON THE OUTCOMES

The results of the primary analysis of outcome measures showed that there were significant effects of the MBSR intervention on stress, mindfulness and self-esteem. The purposes of secondary analysis were 1) to determine the effects of the mediators (stress and mindfulness) on the outcomes (depression and self-esteem) using linear regression; and 2) to examine the indirect intervention effects in the presence of the mediators using Sobel-Goodman mediation analysis with Bootstrapping used to produce confidence intervals. The mediation model of the analysis is outlined in Figure 12 (Adapted from Hayes (2009)).



A: The total effect of the MBSR intervention on outcomes

B: The mediated effect of the MBSR intervention on outcomes

Figure 12: Mediation model of analysis

5.5.1 Effects of the mediators on depression

Estimates of the mediators and intervention effects on CES-D scores for depression in the presence of the mediators are displayed in Table 11 below. As Figure 12 and Table 11 indicate, the total effect (c) is the sum of the indirect effect (ab) and the direct effect (c') (Hayes, 2009). It can be seen from Table 11 that the total intervention effect on the CES-D scores for depression was non-significant at all-time points. Therefore, a mediation analysis was not useful in this case.

 Table 11: Estimates of intervention effects on depression in the presence of the mediator

| Outcome | Mediator | Time from baseline | Effect of Mediator (b) | Intervention Total Effect (c) | Intervention Indirect Effect (ab) | Intervention Direct Effect (c') |
|------------------|-----------|--------------------------|---------------------------|-------------------------------------|-----------------------------------------|---------------------------------------|
| | | | (est | imate and 95% | confidence inter | val) |
| Depression | Perceived | week8 | 0.56 (0.37, 0.76) | -1.83 (-3.82, 0.17) | -1.37 (-2.39, -0.35) | -0.45 (-2.52, 1.62) |
| S | stress | week16 | 0.89 (0.68, 1.10) | -1.25 (-4.07, 1.57) | -1.81 (-3.38, -0.24) | 0.56 (-1.78, 2.90) |
| | | week32 | 0.91 (0.69, 1.13) | -2.78 (-5.70, 0.14) | -1.58 (-3.43, 0.27) | -1.20 (-3.62, 1.23) |
| Mindful- ness | Mindful- | week8 | -0.24 (-0.38, -0.09) | -1.83 (-3.82, 0.17) | -0.70 (-1.44, 0.03) | -1.12 (-3.07, 0.83) |
| | ness | week16 | -0.44 (-0.64, -0.25) | -1.25 (-4.07, 1.57) | -1.22 (-2.28, -0.16) | -0.03 (-2.76, 2.70) |
| | | week32 | -0.48 (-0.68, -0.28) | -2.78 (-5.70, 0.14) | -2.38 (-3.99, -0.77) | -0.40 (-3.48, 2.68) |

5.5.2 Effects of the mediators on self-esteem

Estimates of the mediators and intervention effects on self-esteem in the presence of the mediators are displayed in Table 12 below.

As perceived stress was considered the mediator, the results revealed that the effect of stress on self-esteem (b) was significant at all-time points. Estimated effects of stress on self-esteem at week 8, week16, and week 32 were 0.22 (95% CI = 0.11-0.33), 0.32 (95% CI = 0.22-0.43), and 0.25 (95% CI = 0.15-0.35), respectively. Also, the indirect effect of the MBSR intervention on self-esteem through stress (ab) was significant at all-time points (increasing from 27% to 35% of the total effect over time). Estimated
indirect effects of the MBSR intervention on self-esteem through stress at week 8, week 16, and week 32 were 0.48 (95% CI = 0.05-0.90), 0.60 (95% CI = 0.04-1.17), and 0.38 (95% CI = 0.06-0.83), respectively.

As mindfulness was considered the mediator, the results revealed that the effect of mindfulness on self-esteem (b) was significant at all-time points. Estimated effects of mindfulness on self-esteem at week 8, week16, and week 32 were 0.15 (95% CI = 0.08-0.22), 0.22 (95% CI = 0.14-0.31), and 0.22 (95% CI = 0.15-0.30), respectively. Also, the indirect effect of the MBSR intervention on self-esteem through mindfulness (ab) was significant at all-time points (increasing from 27% to 35% of the total effect over time). Estimated indirect effects of the MBSR intervention on self-esteem through mindfulness at week 8, week 16, and week 32 were 0.43 (95% CI = 0.02-0.84), 0.57 (95% CI = 0.02-1.11), and 0.91 (95% CI = 0.29-1.53), respectively.

| Outcome | Mediator | Time from baseline | Effect of Mediator (b) | Intervention Total Effect (c) | Intervention Indirect Effect (ab) | Intervention Direct Effect (c') |
|-------------|-----------|--------------------------|--------------------------------------|-------------------------------------|-----------------------------------------|---------------------------------------|
| | | | estimate and 95% confidence interval | | | |
| Self-esteem | Perceived | | -0.22 | 1.56 | 0.48 | 1.08 |
| | stress | week8 | (-0.33, -0.11) | (0.53, 2.58) | (0.05, 0.90) | (0.03, 2.12) |
| | | | -0.32 | 1.83 | 0.60 | 1.22 |
| | | week16 | (-0.43, -0.22) | (0.59, 3.06) | (0.04, 1.17) | (0.09, 2.35) |
| | | | -0.25 | 2.59 | 0.38 | 2.20 |
| | | week32 | (-0.35, -0.15) | (1.50, 3.68) | (-0.06, 0.83) | (1.22, 3.19) |
| | Mindful- | | 0.15 | 1.56 | 0.43 | 1.13 |
| | ness | week8 | (0.08, 0.22) | (0.53, 2.58) | (0.02, 0.84) | (0.12, 2.14) |
| | | | 0.22 | 1.83 | 0.57 | 1.26 |
| | | week16 | (0.14, 0.31) | (0.59, 3.06) | (0.02, 1.11) | (0.05, 2.46) |
| | | | 0.22 | 2.59 | 0.91 | 1.68 |
| | | week32 | (0.15, 0.30) | (1.50, 3.68) | (0.29, 1.53) | (0.57, 2.79) |

 Table 12: Estimates of intervention effects on self-esteem in the presence of the mediator

5.6 HARMS

There were no reported adverse events for the participants observed or reported during the RCT study.

5.7 SUMMARY

The demographic data of the control and experimental participants were similar. The results from the analyses of the whole of participants and female participants only revealed that for the experimental group there was a significant reduction in perceived stress as compared to baseline at week 8 and week 16 but the effect was non-significant at week 32. There was also a significant improvement in self-esteem and mindfulness at all-time points for the experimental group. In addition, there was a significant difference between participants in the experimental and control groups for change over time for the analyses of both the whole of participants and female participants in perceived stress (p = .0190, p = .0309), self-esteem (p < .0001, p = .0003) and mindfulness (p = .0002, p = .0002.0003), respectively. The analysis of the whole of participants revealed that the experimental group participants appeared to experience significantly lower perceived stress than the control group participants at week 8 and 16 but not week 32 as compared to baseline. The experimental group participants also experienced significantly higher self-esteem and mindfulness than the control group participants at all-time points as compared to baseline. However, the results from the analysis of the female participants showed that compared to controls, the experimental group participants appeared to experience significantly lower perceived stress only at week 8 and higher mindfulness levels at weeks 8 and 32. Interestingly, there was no treatment effect on depression or grade point average for the analyses results of both the whole of participants and female participants. Furthermore, the results from mediation analysis showed that the effect of perceived stress on self-esteem was significant at all-time points. The indirect effect of the MBSR intervention on self-esteem through perceived stress was also significant at all-time points. Similarly, the effect of mindfulness on self-esteem was significant at alltime points; and the indirect effect of the MBSR intervention on self-esteem through mindfulness was significant at all-time points.

CHAPTER SIX: FINDINGS FROM THE QUALITATIVE DESCRIPTIVE STUDY

6.1 INTRODUCTION

The analysis of the qualitative data collected from the focus group interview outlined in the latter part of Chapter Four, forms the basis for the findings presented in this chapter. This chapter begins by describing the demographic characteristics of the study participants. The key themes and sub-themes that describe the experience of the Thai nursing students participating in the MBSR program are then presented. Illustrative quotations taken from the transcript are provided for each theme.

6.2 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

| Demographic characteristics | Number of participants (n=9) | | | |
|-----------------------------|------------------------------|--|--|--|
| Gender | | | | |
| Female | 6 | | | |
| Male | 3 | | | |
| Age (years) | | | | |
| 19 | 6 | | | |
| 20 | 3 | | | |
| Year of nursing study | | | | |
| First year | 6 | | | |
| Second year | 3 | | | |
| Religion | | | | |
| Buddhism | 9 | | | |
| | | | | |

Table 13: Demographic characteristics of the study participants

Nine Thai nursing students consented to participate in the focus group interview. Data on the demographic characteristics of the participants were collected at the beginning of the focus group. Details collected included gender, age, year of nursing study and religion. The data are illustrated in Table 13 above.

Of the nine participants, six were female and three were male. The majority of participants were first year nursing students aged 19 while the remainder were in the second year of the nursing program and were 20 years old. All participants were Buddhists and had attended all sessions of the MBSR program.

6.3 SUMMARY OF FINDINGS

Participants described a rich and varied range of experiences encountered during their participation in the MBSR program. These experiences were formulated under two main themes: pre-participation and participation experiences. The associated sub-themes were organised under each theme; and together they form the qualitative findings. These findings are represented diagrammatically in Figure 13.



Figure 13: Summary of qualitative findings

6.4 PRE-PARTICIPATION EXPERIENCES

Analysis and interpretation of the focus group transcript revealed that some participants had previous experience of mindfulness which influenced their expectations regarding the likely outcomes of participating in the MBSR program. These were identified as two sub-themes of the 'pre-participation experience' theme: prior mindfulness practices and expectations.

6.4.1 Prior mindfulness practices

Five participants reported prior experience of mindfulness before commencing the MBSR program. They identified their experiences as either based on Buddhist principles or non-Buddhist practices.

Buddhist mindfulness practices

The three participants who identified their previous experience as Buddhist had learned Buddhist-based mindfulness practice from Thai monks located at Thai temples. The mindfulness practices identified were primarily sitting meditation and walking meditation. The practices learned involved a 3-day Satipathana Sutra meditative practice ¹, a 1-month meditation retreat, and weekly attendance at religious activities on Buddha day. One participant had practiced walking meditation at a 'Buddhism-Oriented School'² while studying in high school. The outcomes of these practices were experienced as positive and negative.

One participant had continued to practice mindfulness at home after participating in mindfulness instruction at a Thai temple during high school study:

¹ Refers to 'The Four Foundations of Mindfulness' which are the Buddha's basic set of instructions for meditation practice consisting of mindfulness of body, feelings, mind and Dhamma – Buddha's teaching (Gunaratana, 2012).

² As part of a project organised by the Thai Ministry of Education which involved approximately 18,000 schools (Office of the Basic Education Commission of Thailand-Ministry of Education, 2007).

...I applied Satipathana Sutra meditative practices to my sitting meditation every day at home while I studied in high school. (Nut)

In contrast, one participant who had attended a 1-month meditation retreat described her experience as difficult:

I practiced sitting meditation under one of the long handled umbrellas which were set around the temple. I didn't get anything from the retreat. It was suffering and I just wanted to get free from there. (Pat)

In addition, both participants described the limitations of the practice in terms of the duration of the practice session. One participant explained that it was too short:

...But just 3 days [3-day Satipathana Sutra meditative practice], I hadn't learned a lot. When I practiced alone without reporting to the monk teacher, I didn't know what I should do, for example when my mind wandered over and over. I didn't know what was right or wrong as well. (Nut)

Another participant had the opposite experience:

It was too long a time to practice like that [1-month meditation retreat]. (Pat)

Non-Buddhist mindfulness practices

One participant participated in a nonreligious mindfulness practice – a 4-week Qigong³ project run by the Faculty of Allied Health Sciences, the University of Phayao. Qigong is categorised as a moving meditation practice that can be performed without a specific spiritual or religious belief (Ospina et al., 2007). The practice was beneficial in improving her memory:

My memory was assessed after finishing the project and had improved. (Fern)

However, she did not continue to practice after completing the project:

I hadn't kept practicing after it [the Qigong project] finished. (Fern)

³ Qigong is an ancient Chinese practice integrating physical postures, breathing techniques and focused intentions (National Qigong Association, 2015).

6.4.2 Expectations

The participants were asked about what they had expected from the MBSR program before they commenced it. Expectations focused on four key areas – reduction in levels of stress, enhanced capacity for mindfulness, improved ability to regulate emotion, and improved capacity for study.

Stress reduction

A number of participants described their expectation that participation in the MBSR program would decrease their stress levels in relation to their everyday life, relationships and study.

One participant's description captured the responses of participants as a whole:

I would like to lower my stress about daily life, study, family, and friends. (Toon) Regarding decreasing study-related stress, another participant added:

I think that being a nursing student one has to face many difficulties. This participation would help me to overcome them during my nursing study. (Fa)

A participant who felt she had acquired some techniques for stress management expected that she would learn further strategies:

I want to get more stress reduction techniques from this program. (Mook)

Mindfulness enhancement

Most participants attending the MBSR program not only expected to decrease their stress levels. They also hoped to increase their mindfulness for a range of reasons.

For one participant such enhancement would benefit everyday life:

For me after I heard about this program, what I expected was that I would have more mindfulness and concentration in my daily life. (Mook)

For enhanced emotion regulation:

I want to have mindfulness about, well, when I face any difficulties I can't control my emotions. So I would like to control emotions mindfully. (Fern)

And also for a reduction in stress:

I want to increase my mindfulness to be able to face stress mindfully. (Toon)

I joined this program with the expectation that my stress would reduce and I could be with stress more mindfully. (Nut)

Emotion regulation

An enhanced ability to regulate their emotions was an outcome anticipated by several participants. As exemplified by one participant:

I would like to control my emotions when I encounter situations such as group work where we usually use emotions to fix any problems like conflict or arguments happening in the group. (Pat)

Study improvement

One participant who sought stress reduction expected to improve her nursing study:

I also expected to study better. (Earn)

6.5 PARTICIPATION EXPERIENCES

The second theme entitled participation experiences covers the descriptions of participants' experiences that occurred both during and after the program. Analysis revealed that data in this theme could be organised into two sub-themes. These were identified as 'individual preferences for different practices' and 'benefits of mindfulness practice'. These two sub-themes were found to be overlapped and intertwined. Each sub-theme is described below.

6.5.1 Individual preferences for different practices

A range of mindfulness meditation practices and yoga techniques are taught in the MBSR program. The participants' responses to what components of the MBSR program they preferred varied from person to person. The findings are presented in terms of which practices participants liked most and which they liked least.

The most preferred practices

The most preferred practices were mountain meditation, yoga, walking meditation, sitting meditation, and group dialogue and inquiry.

Mountain meditation is a sitting meditation which uses a mountain image as the focus of the meditation. This was practiced in the full-day of silent practice, and was the most

preferred practice for several participants. One participant explained its benefits in terms of 'steady and longer sitting':

First time I practiced mountain meditation, I was steady like a mountain – didn't move at all. On the day of this practice, I had sat for a longer time than that before. Normally if our body feels numb, we usually feel pain. But during sitting I didn't feel even numb or painful, just noticed that after I finished the practice. (Fern)

Standing and lying yoga is a series of techniques that assist in cultivating moment-tomoment awareness of body movement and breathing. It was also reported as a practice a number of participants liked the most because it offered a way to 'become aware of their body in the present moment'; as one participant described:

What I like in the program is yoga because it helps me be with myself and know what I am doing. (Pat)

Another participant added that:

Yoga can develop my mindfulness, like knowing what I am doing, where I am moving this part or that part of my body. (Toon)

Walking meditation involving intentionally attending to the experience of walking itself was for one participant, a most helpful practice in terms of 'being where she is' or 'being with each pace', as she described below:

I like walking meditation. I always walk quickly – when I arrive at my dorm ladder, I will run to my room. After I practiced walking meditation in the program, when I was at the ladder I knew that I was stepping on to the ladder, lifting my left foot and lifting my right foot. When I got to my room, I wasn't tired like before. Previously, I had never known I was walking, I just focused on my destination and where I was going. (Fa)

Sitting meditation, a practice where the focus of attention is on breathing and other objects while sitting, was a favourite practice of one participant that she ascribed to enabling her to 'be with one's own self':

For me, I like sitting meditation. I like to spend time staying with myself following your [the researcher] instructions. I am happy. I like sitting. (Mook)

Group dialogue and inquiry In addition to the mindfulness practices described above, the group dialogue and facilitated inquiry method used to conduct the program, was an

aspect of the program that one participant liked the most because of 'learning from shared experience':

Another thing I get from the program was sharing experience with you [the researcher] and friends during group discussion. I like to listen to others' experience, to learn about it, and apply it to my living. (Fa)

The least preferred practices

Besides the most preferred practices, the participants were asked what aspects of the MBSR program they disliked or liked least. The participants had different opinions about their least preferred aspects of the MBSR program, as identified below.

Body scan which involves paying attention in an ordered fashion to each part of body and noticing the sensations that are present with openness and acceptance was reported as the least preferred option for the majority of participants. One participant reflected:

I didn't like the body scan because it was too relaxed and made me sleepy. The soft and light voice induced sleepiness. I couldn't focus my attention on any regions of my body. (Fern)

This view was confirmed by other participants:

Same as Fern's. (Fa, Pat, Toon)

Sitting meditation was identified as the practice most disliked by another participant:

I didn't like sitting meditation because I was usually restless. I felt extremely unhappy in every minute of practice (All participants laughed). I don't like something like this. I couldn't be with myself for a long time because I liked to think, think, and think. When you [the researcher] instructed me to bring my thoughts back to my breathing, I couldn't do that but I still kept thinking. (Earn)

The interviewer used a prompting question to seek clarification about adverse effects from sitting meditation:

Were there any physically uncomfortable effects during your sitting meditation? (The researcher) Some. I had numbness and body strain sometimes but I felt more mentally uncomfortable. (Earn)

While *yoga* was perceived as the most preferred practice by some participants, for one it was the least preferred:

I don't like yoga. I had problems keeping my balance (Some participants laughed, some smiled). Also, during body movements my mind usually wandered. You [the researcher] instructed that I pay attention to each movement like raising my hand up and down. But I couldn't do that; my mind often wandered. (Nut)

6.5.2 Benefits of participation in the MBSR program

The second sub-theme was derived in response to the question of how mindfulness practice played a role or became a part of participants' daily lives after they had completed the MBSR program. Data analysis yielded four areas of benefit: enhanced self-care, improved stress management, improved academic performance, and increased interpersonal effectiveness.

Enhanced self-care

The analysis of the benefits of 'self-care' was based on the concept of self-care developed by Carte and Barnett (2014) which considers self-care as the ongoing practice of self-awareness and self-regulation to achieve one's own wellbeing. In this sub-theme, participants reported four distinct components: self-awareness, improved daily living, emotion regulation, and importance of practising as displayed in Figure 14.



Figure 14: Key components of the benefits of 'self-care'

Self-awareness

A number of participants reported heightened awareness of themselves in the present moment. One participant described increased awareness of his negative thought which resulted in his becoming less preoccupied with stressors:

...The mindfulness practice helped me to be better aware of myself and not distracted by unnecessary things. If we think a lot about this, we would be stressed. ...I realised that previously when I was stressed I liked to think, think, and think about it in a negative way. Now I don't think too much about whatever I have faced. Just acknowledge that it has already happened, be with it instead of much negative thinking about it, and try to solve it instead. (Nut)

Mindfulness practice enabled participants to be aware of their unhelpful behaviours:

I am more aware of myself. Knowing whatever I am doing such as realising that I am doing an absurd and useless thing, for example, playing games or Facebook too much; I used to start playing at 8 pm, and continue to around 3am. (All members laughed and said "Ohhh") The program led me to think that I should decrease my playing time and do useful activities instead. And I can do this now. (Bee)

Another participant shared a similar experience:

I had the same experience as Bee's but I watched YouTube programs. I used to watch for a whole day. At first I intended to read textbooks in the afternoon after watching YouTube in the morning but I spent from morning to 10 pm just watching YouTube. But after joining the program I watched only one program, just one program that I choose and then shut down the YouTube. (Fern)

Improved daily living

Many participants reported that with mindfulness practice, they became more mindful of specific daily activities; and this produced positive outcomes.

First, brushing teeth mindfully led to paying more attention to building good health as one participant explained:

Since finishing the program, I've still practiced daily activities such as mindfully brushing my teeth, well, when I brushed my teeth and rinsed my mouth, then I saw blood coming out. I asked myself what is happening to my teeth. I noticed this abnormal thing occurring often. Previously, I was rarely interested in my teeth brushing, just brushed and rinsed quickly. Such noticing led me to consider whether I have to see a doctor, something like this. This teaches me that we should notice little things useful for us to have good health, like this. (Toon)

Second, mindful eating also resulted in good health:

For me, I get benefits for daily life especially in regard to eating. Normally, I eat only what I like. I don't like eggs although I know they are healthy food. Now I become aware of what I should eat, and try to eat egg every morning and also realise what I'm going to eat and buy. (Fern)

Third, an improvement in sleep patterns was reported using sitting meditation by a participant who had reported insomnia before participating in the program:

When I started my first year study here, I had a lot of pressure from friends and senior nursing students. This made me stressed, so stressed, and I had insomnia some nights because I had thought thought and thought about this. I had to take sedative tablets to help me sleep. During the program until now, I have done sitting meditation focusing on breathing around half an hour before I went to bed, and focused on my breathing again in bed before sleep. I found that I could sleep easily and well every night. It's really helpful. (Nut)

Lastly, the same participant also reported improved self-regulation in eating and spending money:

For me, I used to spend 300 Baht [about \$AUS 10] to buy my dinner (he and other participants laughed). I bought everything I want to eat at that time. But I couldn't really eat all. Joining this program enables me to more aware of how to spend money for eating – don't buy what is not necessary and don't eat too much. Now I decrease my spending, just 100 Baht [about \$AUS 3] for a dinner. Sometimes the money remains. This is also self-control. We should buy what we're going to eat, don't let our feelings of hunger lead us. If we follow it, we can't stop. (Nut)

Emotion regulation

Being less emotionally reactive, particularly in regard to anger, was a component of self-care that was enhanced by the mindfulness practice in the MBSR program.

One participant spoke of how she dealt with her anger:

Before attending the program, I totally reacted to others as I felt at that moment and usually got into trouble. What I practiced in the program helps me to be able to control my emotion as I get angry. When I feel angry, I recognise that I am feeling angry; and then I become silent, be with myself, not take it out on others. I use mindfulness instead of my emotion to deal with problem. (Pat)

Importance of practising

To obtain sustainable wellbeing, ongoing self-care practice is needed (Carte & Barnett, 2014). Several participants found regular mindfulness practice important for ongoing wellbeing.

One participant reflected on his progress with the body scan exercise:

I tried to practice activities in the program such as the body scan that the first time I had slept during practising. After that I practiced this more and more, and I could do it better and better. (Nut)

This was supported by another participant:

For me, at the beginning I didn't change at all. I then gradually noticed my changes after practicing for a few weeks, around week 2-4 of the program. I noticed that I could be with myself better and knew more what I was doing. (Nim)

Improved stress management

Participants noticed that their improved state of mind that resulted from being centred and calm as a result of meditation practice, led to a decrease in their stress as illustrated in Figure 15.



Figure 15: Key components of the benefits of 'stress management'

Being centred

One participant spoke of how he used sitting meditation to enable him to stay in a centred place when he felt stressed:

I got experience from the class that we should train our mind like a spider [in its web], *after grabbing something* [grabs an insect that has contacted the web], *bring our minds back to ourselves* [like the spider returning to the centre of its web]. *I did such a practice when I was stressed, just let go of the stress and brought my mind back to breathing. Doing the practice like this helped to lower my stress. (Nut)*

Being calm

For another participant, having a calm mind arose as a result of sitting meditation as in the 'mountain meditation'. This led to a reduction in stress:

When I was at my dorm and feeling stressed, I usually did the mountain meditation as practiced in the class. This made my mind calm and not distracted during sitting. Such a calm mind helped me feel relaxed and ready to face stressful situations. (Fa)

Improved academic performance

Enhanced academic performance was an advantage that a number of participants reported. This benefit was mainly described in terms of improved study behaviours and improved academic results as displayed in Figure 16.



Figure 16: Key components of the benefits of 'improved academic performance'

Improved study behaviours

Several participants described positive changes in their study skills especially reading, listening, and doing assignments mindfully.

Attentive reading led to an ability to focus for greater periods while reading, as one participant stated:

Previously, I could stay with reading textbooks for 1-2 hours at a time. Now I can sit and focus on reading much longer around 3-4 hours. (Mook)

One participant had previously attempted to study while also following Facebook and had found this detrimental; however, mindfulness practice enabled her to effectively switch her attention between two objects. She expressed her surprise with the outcome:

Personally, I don't like to read textbooks silently so I usually read along with accessing online Facebook. But this was not helpful because I couldn't understand what I read. After my participation in the program, I am aware that I am getting on Facebook and using it as a friend for reading. I log on Facebook and read textbooks in the same time as usual. Once any notifications [on Facebook] come up, I have a look and sometimes give a response, and then go back to reading. I am aware of and know what activity I am doing in each moment. Do you know? It was surprising that I can understand what I read well. Incredible! (Bee)

Mindfulness practice also had a positive effect on the participants' capacity for listening which, in turn, resulted in attentive reading; as one participant described:

Before joining the program, I had to read textbooks a lot because I realised that my brain ability [intellectual ability] was not good. I couldn't do the exams well. After practicing mindfulness, I learned to know what I am doing at the moment so I tried to listen to the teachers attentively when in the classroom. I found it helpful for my reading later. I don't need to read like before, where I read everything, but still failed. Now I just read to get the main idea that I heard my teachers emphasise in the class. (Nim)

In addition to mindful reading and listening, one participant applied mindfulness to enable her to do her assignment attentively and effectively:

While I was doing my assignment in my dorm, I thought about many things other than the assignment and then stopped writing. I tried to bring my attention back to the assignment, and continue to do it. Previously I couldn't take my wandering thoughts back. I am now able to be aware that I am thinking about something else and my focus can be back on my study faster than before. (Earn)

Improved academic results

Some participants who identified improved study behaviours also reported better academic results:

My friend read for the 'Pathology' subject a lot while I read twice. My friend got a score 36, and 'Fail' but I nearly passed, 41 was the lowest passing score, I got 40 (smiled). (Bee)

Likewise, another participant stated:

Last semester I enrolled in the 'Cell and Molecular Biology' subject, I couldn't do the exam and almost got 'Fail'. For this semester, I've studied a 'Pharmacology' subject that is much more difficult than the 'Cell' subject but I've passed every exam (all participants expressed appreciation and said "Ohhh") (Nim)

Enhanced interpersonal effectiveness

The last area of beneficial outcomes from mindfulness practice, that most participants reported, related to positive changes in interpersonal relationships, specifically family and peer relationships. Improved family and peer relationships were identified as 1) increased acceptance; 2) increased loving-kindness and compassion; 3) mindful communication as illustrated in Figure 17.



Figure 17: Key components of the benefits of 'enhanced interpersonal effectiveness'

Increased acceptance

Participants indicated that mindfulness practices that focused on acceptance of who others actually were and what they did resulted in increased satisfaction with their relationships with family and friends. One participant reflected on how acceptance towards her mother contributed to an increase in her connection with family and in her self-esteem.

I have three siblings. Do you know my mum rarely phones me while I've been here but she always called my younger sister while she studied in China? I thought I am also far away from home, but mum.... (muted). After participating in the program, I changed my view on this matter. Now I acknowledge what she did and realise that she did that because she trusted in my maturity but my sister was too young. Such thinking makes me have high self-esteem too. So I phone my mum instead. And also phone my sister. I hadn't talked to her earlier and had had some quarrels with her. Now we talk to each other. (Fern)

Another participant who was the president of nursing study, being responsible for collaborating with nursing student groups in joining activities of the school and university, described how mindfulness practice increased her sense of accepting her friends' decisions rather than reacting emotionally:

...About joining activities of the university, I have always done that although my friends didn't. This year I've never been angry at them and never asked why they didn't do and let me do alone. Mindfulness helps me realise that if my friends really want to help me, they will do so. Verbal negative reaction might cause a breakdown in group relationships. This situation occurred in my second year students' group before I started practicing mindfulness. (Fa)

Increased loving-kindness and compassion

A participant reported loving-kindness and compassionate interactions with her mother rather than being reactive. This resulted from her not bringing her stressful events home to make her mother become more stressed:

Previously, I reacted verbally and negatively to my mum whenever she took her emotion out on me. Now I just say um.., listen to her, and don't react emotionally to her. I realise that my mum faces stressful things every day, and usually brings them to me, so I shouldn't put more stress on her. Just listen to her, like this. Do you know my mum said to me that now I seem to be in a good mood? She could notice the changes in me. (Fern) Another participant also shared her experience of prioritising compassion and lovingkindness towards others:

For me, what I got from the program is that I focus on the community's benefits first, and my personal benefit is the second priority. Although my friends don't do activities for the university I still do. I am happy to do so for new students, my friends, and the university. (Fa)

Mindful communication

Mindfulness practice also benefited participants in terms of an increased capacity for mindful communication:

Mindfulness can shape my thinking before speaking out, that is, to be aware of how they feel towards what I am saying.(Mook)

One participant spoke of how her mindful communication expressed in an assertive manner positively influenced peer relationships:

One day I encountered many, many difficulties for a whole day, and there was a friend who upset me at the end of the day. Previously, I would have responded to such a situation by taking all my negative emotions out on that person immediately. But now I become more aware of my present emotion and changed my response from taking my emotion out to them to telling them what I had encountered on that day, for example "To day I face a lot of problems; I feel bad; I don't want to be angry with you; let me be with myself for a while". I had not managed any conflicts or problems with my friends in this way before. These also made me feel better; not hold on to my anger but express it assertively and clearly as I learned from the program. (Nim)

6.6 SUMMARY

This chapter describes the themes and sub-themes that emerged from the data collected from the focus group interview conducted with nine Thai nursing students who had participated in the MBSR program. There was a varied range of participants' experiences. Most participants attended the program with some prior experience of Buddhist-based mindfulness practice and expected to obtain useful outcomes for their daily lives, relationships and study. There were individual opinions about the most and least preferred practices in the program. The benefits of mindfulness practice that participants gained from the program seemed to meet all the expectations they had prior to commencing the program. That is, enhanced self-care, more effective stress management, enhanced academic performance, and improved interpersonal effectiveness. The components of each benefit have been identified and illustrated with supporting verbatim quotations.

The following chapter will draw together the RCT and the qualitative aspects, to provide a summation of the whole study and address the research objectives. Strengths and limitations of the study will be discussed and recommendations for future research will be made.

CHAPTER SEVEN: DISCUSSION AND CONCLUSION

7.1 INTRODUCTION

This study has employed an embedded experimental mixed methods design comprising a randomised controlled trial and a qualitative descriptive study to address the problem under investigation. The RCT data and the focus group data were analysed separately and the two sets of findings were kept apart as detailed in Chapters Four and Five. The implications of these findings are discussed in this chapter in light of other research that has addressed the use of mindfulness-based stress reduction with non-clinical populations such as health professional university students. The chapter begins with a discussion of the demographic data of the study participants. Next, the RCT results are discussed in relation to the research hypotheses in order to form an analytic core of the overall results. The textual findings of the qualitative component are then discussed and integrated into the main RCT results to provide a deeper understanding of the experimental outcomes. The strengths and limitations of the study and suggestions for future research are also considered. The chapter concludes with a personal reflection on the experience of undertaking the project and a summary of the study overall including its practical implications.

7.2 DISCUSSION ON THE DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

One hundred and twenty seven Thai undergraduate nursing students were recruited to the study. The average age of study participants was 19.17 years with a range from 17 to 21 years. In Thailand, students traditionally apply to study nursing after completing Grade 12 of secondary school at the age of 17 to 18 years. This was consistent with a previous study undertaken in an Asian country showing that the mean age of Korean nursing participants was 19.6 years in the MBSR group and 19.5 in the control group (Song & Lindquist, 2015). This stands in contrast to Western undergraduate nursing students who are likely to be more mature as many Western universities offer a range of entry options for both students completing secondary education and non-school leavers. Prior studies have reported an age range of 20-39 years in American nursing students

(Beddoe & Murphy, 2004) and 19-53 years in Australian nursing students (van der Riet et al., 2015). As mentioned in section 4.2.2 of Chapter Four, first and second year nursing students were recruited to the study due to their availability to engage with the study. In addition, there is evidence that Thai nursing students are more likely to experience higher stress levels in their first year (Naiyapatana et al., 2008) and second year (Insawang et al., 2005) than more senior nursing students. Participants in the present study were predominately female, which was similar to nursing students' gender in other studies conducted globally and also consistent with Thailand as a whole, where 95.60% of registered nurses are female (Srisupan, 2012). Almost all participants were Buddhists. This was congruent with a survey reporting Buddhism as the main religion practiced in Thailand (National Statistical Office, 2012). This connection with Buddhism was important as it raised the possibility of study participants having prior experience of mindfulness practice as the concept of mindfulness is rooted in Buddhist principles. This contrasts with studies conducted in non-Buddhist countries such as the United States of America (Beddoe & Murphy, 2004) and Israel (Tarrasch, 2015), in which it was reported that few if any participants had mindfulness experience prior to involvement in the research.

7.3 DISCUSSION OF THE RCT RESULTS

The RCT results were derived in response to the main research question of whether the MBSR program reduced stress and depression and enhanced self-esteem and mindfulness in Thai nursing students immediately on completion of MBSR program at week 8, and follow-up at weeks 16 and 32 from baseline. Accordingly, the effects of the MBSR program on each primary and secondary outcome variable are discussed in relation to the research hypotheses and compared with the results of previous studies examining effects of MBSR in university student populations. As outlined in the systematic review reported in Chapter Two, 16 studies published between January 1979 and January 2015 addressed the efficacy and effectiveness of MBSR in non-clinical university populations (Barbosa et al., 2013; Beddoe & Murphy, 2004; Bergen-Cico et al., 2013; de Vibe et al., 2013; Demarzo et al., 2014; Erogul et al., 2014; Jain et al., 2007; Kang et al., 2009; Oman et al., 2008; Rosenzweig et al., 2003; Shapiro et al., 2011; Shapiro et al., 2012; Shapiro et al., 2008; Shapiro et al., 1998; Song & Lindquist, 2015; Young et al., 2001).The following section considers the findings of the RCT

component of the present study in relation to the extant literature on the efficacy and effectiveness of MBSR in non-clinical university student populations, addressing this in four parts: participant flow, effects of the MBSR program on the outcomes – primary outcomes (perceived stress, depression, self-esteem and mindfulness), and secondary outcomes (utilisation of health and counselling service, and grade point average), effects of the MBSR program on the outcomes for female participants, and effects of mediators on the outcomes.

7.3.1 Participant flow

The number of participants in the present study represented 73.41% of the entire cohort of first and second year nursing students (127 of 173) in the participating university. Of the 16 reviewed studies, only one study (Song & Lindquist, 2015) that sampled all-year Korean nursing students reported information on the participating university, including the university's name, duration of nursing curriculum, and the total number of nursing students enrolled. The university in which the present study was undertaken is similar to that of Song &Lindquist's (2015) study in terms of offering a 4-year undergraduate nursing program; however, the number of participants in the Korean study represented 10.9% of all eligible nursing students (50 of 460). In the present study the number of participants was sufficient to satisfy sample size requirements as determined by power analysis calculation (63 participants per group). The sample size achieved in the present study was greater than in other studies, except for those reported by Rosenzweig et al. (2003) and de Vibe et al. (2013). The former study, carried out with 302 nonrandomised medical students over 4 years, offered an MBSR program as an elective seminar in which participation served to fulfil course requirements. The latter study recruited 288 medical and psychological students from two study sites. The high rate of nursing students' willingness to participate in the present study may be attributable to aspects of Thai culture and tradition, in which education is highly valued; and social respect and authority increases with the level of education (Ekintumas, 1999). Although it was made clear that participation was entirely voluntary, the respect afforded university staff by students in Thailand may well explain why so many decided to participate and remained in the study until its conclusion. In addition, the current study was undertaken in a comparatively new university, and the researcher was the first academic staff member of the School of Nursing at that university to be offered the opportunity to

undertake doctoral research in a Western university. The novelty of this situation may also partly explain the level of interest in the project among the nursing student participants, and thus the negligible attrition rate.

In this RCT, there was a 0.78% (1 of 127) attrition rate with all but one participant providing data at all measurement points. This attrition rate was lower than those reported in previous studies (Appendix 42). In addition, all experimental group participants completed the MBSR program, with 84.12% of these attending all MBSR program classes. This is a higher level of class participation compared to reported attendance rates in previous studies (de Vibe et al., 2013; Demarzo et al., 2014; Oman et al., 2008). This high class participation rate could also be explained in relation to Thai cultural values in which children are taught to be obedient, docile and submissive, and to show respect to their parents, the Buddha and other religious symbols, teachers, seniors and authority figures (Ekintumas, 1999). In particular, parents and teachers are ascribed high status and viewed as givers of vital information and essential knowledge (Ekintumas, 1999; Laopongharn & Sercombe, 2009). This belief arises from the Buddhist principle of Katannukatavedita – the quality of being a grateful person or expressing gratitude for benefits received and reciprocation of them (Bhikkhu P.A. Payutto, 2002). Most Thai people regard gratitude and caring behaviours towards parents, teachers and Thai monks as meritorious actions. Accordingly, participation in the program might have been seen as a way in which the nursing student participants could show gratitude and caring to their teacher (the researcher). Another possible explanation could be that Thai nursing students are trained to be self-disciplined, a quality regarded as a main professional characteristic for registered nurses, as stipulated by Thailand Nursing and Midwifery Council (2015). Moreover, such a high level of class attendance could also be taken to indicate that the MBSR program was culturally acceptable to participants.

7.3.2 Effects of the MBSR program on the outcome variables

Perceived stress

The results of this study showed a significant difference between the experimental and control groups for changes overtime in perceived stress scores. The experimental group had a significantly lower perceived stress score than the control group at weeks 8 and 16 as compared to baseline, but not at week 32. Therefore, the results partially support the 160

first two research hypotheses of the study. A significant decrease in perceived stress from baseline to completion of the MBSR program (week 8) for the experimental group, is consistent with the findings of several other studies of MBSR (Beddoe & Murphy, 2004; Demarzo et al., 2014; Kang et al., 2009; Shapiro et al., 2012; Song & Lindquist, 2015). Similarly, a significant difference in changes of perceived stress between the experimental and control groups from baseline to week 8 supports the findings of previous studies (Erogul et al., 2014; Kang et al., 2009; Oman et al., 2008; Song & Lindquist, 2015). In addition, the findings of the present study suggest that the reduction in perceived stress persists beyond immediate completion of the MBSR program, for at least 2-months (week 16); this is consistent with the findings of prior studies (Oman et al., 2008; Shapiro et al., 2012). This suggests the usefulness of the MBSR program in helping Thai nursing students to deal with ongoing stressors that might negatively impact on their capacity for study. However, the effect was nonsignificant at 6-months follow-up (week 32), a finding consistent with that of a previous study of MBSR with medical students (Erogul et al., 2014). In the present study, perceived stress scores increased at week 32 for both groups. This finding may reflect the timing of data collection at week 32, which was one week prior to commencement of the examination period for the first and second year nursing students, and two weeks prior to second year students commencing their first clinical nursing placement. This was likely to be a time of heightened stress that would register on the perceived stress scores of participants in both groups. Nonetheless, the perceived stress scores for the experimental group were lower than those for the control group at this time point in the study. This suggests the likelihood that the MBSR program has some long-term beneficial impact on perceived stress.

Mindfulness

The results support the research hypotheses that nursing students participating in the MBSR program had improved mindfulness after completion of the program and had higher mindfulness than those receiving usual care treatment at three-time points (weeks 8, 16 and 32) compared to baseline. These findings confirmed those of prior studies which showed significant increases in mindfulness from baseline to the program completion point for participants attending an 8-week MBSR program (Shapiro et al., 2012; Song & Lindquist, 2015), a 6-week MBSR program (de Vibe et al., 2013), and a 5-week MBSR program (Bergen-Cico et al., 2013). The effect on mindfulness was

sustained 8 weeks subsequent to the completion of the program (week 16), congruent with previous studies (Shapiro et al., 2011; Shapiro et al., 2012; Shapiro et al., 2008). This suggests that MBSR can improve mindfulness in Thai nursing students. It is worth noting that the beneficial effects of mindfulness training can endure for up to 6-months (week 32); this supports the claim that mindfulness is a learned skill that can be developed over time with practice (Bishop et al., 2004). Consistent with this, Shapiro et al. (2011) studied the effects of the MBSR intervention extending to 12 months after the completion of the training program. Their results demonstrated that relative to the control group, the MBSR participants reported significant increases in mindfulness (p < .05). Due to the limited timeframe for data collection in PhD research, it was not possible to extend follow up in the present study beyond 32 weeks. It is recommended that future research addresses the longer term impact of MBSR in nursing and other health professional students by extending follow-up time periods beyond 6 months (Shapiro & Jazaieri, 2015).

Self-esteem

The study results support the research hypotheses that exposure to MBSR training can bring about improvements in self-esteem that will be sustained over time. Of 16 previous MBSR studies conducted with university students, none investigated the impact of the intervention on self-esteem. However, findings from several studies investigating the relationship between mindfulness and self-esteem provide some support for the results of the current study. Rasmussen and Pidgeon (2011) found that mindfulness significantly predicted high levels of self-esteem (as measured using the MAAS and the RSES - two instruments used in the current study) in Australian undergraduate students; and the study of Brown and Ryan (2003) showed that individuals with higher levels of mindfulness are more likely to experience higher levels of self-esteem. The results of the RCT component of the current study provide support for suggestions and recommendations that mindfulness-based interventions may help promote higher levels of participants' self-esteem (Fennell, 2004; Heppner & Kernis, 2007; Rasmussen & Pidgeon, 2011) based on putative increased awareness and selfacceptance (Brown, Ryan, & Creswell, 2007). It is notable that the present study appears to be the first RCT to demonstrate that the MBSR program can improve selfesteem in nursing students and has sustainable effects up to at least 6-months follow-up.

Depression

The results of this study did not support the research hypotheses with respect to depression. That is, the MBSR intervention had no statistically significant effect on depression scores for the experimental group participants; and there also was no significant difference in depression scores between the two groups at all-time-points. This finding stands in contrast to other MBSR studies which reported a significant decrease in depression scores for nursing student participants in the experimental group (Kang et al., 2009; Song & Lindquist, 2015); and significant between group differences in depression scores (Shapiro et al., 1998; Song & Lindquist, 2015). However, the findings of the present study in regard to non-significant between group differences in depression scores is consistent with the findings of the study by Kang et al. (2009). In the current study, depression scores were measured using the CES-D Thai version, in which scores of 19 or higher are considered indicative of clinical depression (Kuptniratsaikul & Ketuman, 1997). The current study involved a nonclinical population, in which the mean depression scores of the control and experimental group participants were 16 and 15, respectively; and were thus lower than the depression cutoff point of the scale at 19. Another possible explanation related to the CES-D could be that the test-retest reliability coefficient of the original English version of the CES-D was in the moderate range (0.51-0.67) (Radloff, 1977). Given such weak psychometric properties the instrument may have failed to detect a significant difference in depression scores. While not statistically significant, the depression scores for the experimental group were lower than those for the control group at all time-points compared to baseline.

Utilisation of health and counselling services

As only two experimental group participants reported use of health and counselling services, the data on this outcome were not analysed. In both cases, the participants sought help from other than the Mental Health Counselling Centre, School of Nursing, the University of Phayao, which was considered the 'usual treatment' condition for participants in this study. Consistent with this, a service utilisation report of the Mental Health Counselling Centre showed that during the data collection period for the present study (November 2013-July 2014) eight nursing students used counselling services; all of whom were referred by their academic advisors rather than sought to access services

themselves. Moreover, as checked by research assistant A, who coordinated participant recruitment, none of these eight nursing students were involved in the present study. Research assistant A agreed to a confidentiality undertaking to protect the privacy of these eight nursing student participants.

Accumulated grade point average (GPA)

The results of the study revealed that there was no significant MBSR effect on participants' GPAs and thus did not support the research hypotheses. This stands in contrast to the findings of a previous study examining the effects of meditation on the academic performance of African American college students (Hall, 1999). The findings of that study showed that the semester GPAs and accumulative GPAs of the meditation group were significantly higher than those of the non-meditation group. In the present study, the non-significant finding possibly reflects the extent to which the nursing student participants' academic performance was influenced by numerous factors including age, gender, personality, admission qualifications, self-efficacy and academic engagement (Pitt, Powis, Levett-Jones, & Hunter, 2012). It was the case, however, that increases in mean GPA scores for the experimental group were higher than those for the control group from baseline compared to all-time points. The possibility that exposure to MBSR training may have a beneficial impact on academic performance warrants follow up in future research.

7.3.3 Effects of the MBSR program on the outcomes for females

The sample size for male participants was insufficient for the purposes of drawing conclusions in relation to the effect of MBSR on male students. The results of outcome measures for females (n=116) were similar to those for the whole of group participants (n=127). That is, results demonstrated significant post-MBSR program improvements in perceived stress, mindfulness and self-esteem; but not in depression scores and accumulated GPA. Therefore, the effects of the MBSR program on outcomes for female participants were similar to those presented above in section 7.3.2. However, some results of the analysis for the female participants were different from those of the whole of group participants. Relative to the control group, the female experimental group participants appeared to experience significantly lower perceived stress only immediately on completion of the MBSR intervention (week 8). Non-significant longer-term beneficial effects of MBSR on perceived stress in female participants may result 164

from contributing factors occurring during the period of outcome measurement such as examinations and clinical placements as mentioned above in the section 7.3.2. It is notable that although the findings in relation to long-term effects were not significant, the perceived stress scores for the female experimental group were lower than those for the control group at weeks 16 and 32. In addition, the female experimental group participants had significantly higher mindfulness scores than the control group at weeks 8 and 32, but not at week 16 as compared to baseline. As mindfulness is cultivated through mindfulness practice, it is possible that the female participants had departed from daily mindfulness practice at this time point of measurement.

Regarding differential gender effects of participating in the MBSR program, an RCT study conducted with medical and psychology students showed that the MBSR intervention had a significant effect for woman on mental distress, subjective well-being and student stress, but not for men (de Vibe et al., 2013). Thus, differential gender effect of participation in an MBSR program warrants future research.

7.3.4 Effects of mediators on the outcomes

The literature review reported in Chapter Two included 16 studies of MBSR involving university student populations. Of these, two were RCTs which included moderation studies (de Vibe et al., 2013; Shapiro et al., 2011) and one RCT which included a mediation study (Shapiro et al., 2008). The findings of these studies revealed that psychological outcomes of MBSR were mediated by mindfulness; and were moderated by mindfulness, class attendance and home practice of mindfulness. However, up until the current study, there had been no attempts to test mediating or moderating effects of MBSR on depression and self-esteem in university students. Shapiro and Jazaieri (2015) have suggested that the effects of mediating variables may account for the changes observed and how mindfulness training works. The present study thus provides initial findings in relation to mediators (perceived stress and mindfulness) between the MBSR intervention and self-esteem among university student populations.

Effects of the mediators on self-esteem

The mediation analysis suggested perceived stress as a significant mediator between the MBSR intervention and self-esteem outcomes at all-time points. This implies that participation in the MBSR program leads to reduction in perceived stress, which in turn

results in improved self-esteem. Although there has been no direct evidence supporting this mediated relationship, it could be partially explained by the findings of a study that examined the role of mindfulness in appraisals of and coping with stress experiences (Weinstein, Brown, & Ryan, 2009). Weinstein et al. (2009) found that mindful college students encountering academic stressors made more benign stress appraisals and used more adaptive coping strategies. In turn, these more adaptive stress responses and forms of coping mediated the relationship between mindfulness and psychological well-being. It is possible that such adaptive stress responses could enhance participants' sense of self-worth or self-esteem as they realise their capacity to deal with stressors. This accords with a study involving Australian undergraduate nursing students (Lo, 2002), which showed that proactive coping behaviours were significantly correlated with improved self-esteem.

The mediation analysis also revealed that mindfulness fully mediated the relationship between the MBSR intervention and self-esteem, suggesting that increases in mindfulness resulting from participation in the MBSR program were associated with improvements in self-esteem. The findings provide support for a theoretical premise that the cultivation of mindfulness practices (through interventions such as MBSR) leads to increases in mindfulness with non-judgemental and non-reactive acceptance of all experience, and thus contributes to positive psychological outcomes (Blacker et al., 2009; Kabat-Zinn, 1982). The findings of a number of previous studies provide support for mindfulness as a mediator of psychological outcomes, including depression, stress, anxiety, mood states, quality of life, and anger expression (Gu, Strauss, Bond, & Cavanagh, 2015), but not for self-esteem. The mediation effects of mindfulness on selfesteem, arising from the mechanism of mindfulness, was proposed by Shapiro et al. (2006). These authors suggested that the fundamental components of mindfulness that focus on intentionally attending with openness and non-judgement bring about a shift in perspective from a personal viewpoint to a more objective perspective, that is termed as reperceiving. In this case, reperceiving may help participants to clarify their values or "recognise what is meaningful for them and what they truly value" (Shapiro & Carlson, 2010, p. 99). Such a mechanism may lead participants to view themselves with acceptance whatever their circumstances and ultimately to improved self-esteem.

7.4 DISCUSSION OF THE EMBEDDED QUALITATIVE FINDINGS

The qualitative findings were derived in response to the research question of how Thai nursing students taking part in the MBSR program describe their experience of participation in the program following its completion. Participants described a rich and varied range of experiences encountered during participation in the MBSR program. The findings generated from this study are discussed from the perspective of the two key themes (pre-participation and participation experiences) and each associated sub-theme (prior mindfulness practices, expectations, individual preferences for different practices, and benefits of mindfulness practice); comparing these to existing qualitative studies addressing experiences of participation in mindfulness-based interventions in non-clinical populations. Relevant quantitative studies are also included in the discussion. In addition, the findings are discussed based on the concepts of MBSR and mindfulness practices as well as the Thai socio-cultural context.

The findings of the last sub-theme of the second theme – benefits of participation in the MBSR program, could answer not only the secondary research question but also the main research question in conjunction with the RCT results. Therefore, central to the discussion of this sub-theme is 'the result point of interface' between the RCT and qualitative strands of the study. That is, the qualitative sub-theme is discussed and then embedded within the RCT results to expand understanding of the outcomes of the MBSR program.

7.4.1 Pre-participation experiences

Participants' experiences prior to commencing the MBSR program were identified as 'prior mindfulness practices' and 'expectations'.

Prior mindfulness practices

The majority of the focus group participants had previous experience of using Buddhist mindfulness practices. As Buddhism is the predominant religion in Thailand, numerous mindfulness practices have long been taught by Thai monks in temples for Thai Buddhists who are interested in such practices. Also, Buddhist principles are practiced in Buddhism-oriented schools and integrated into teaching-learning process and students' development activities. Access to learning experiences and resources such as these enabled several participants to have the various experiences of Buddhist mindfulness practice before commencing the MBSR program. In addition to mindfulness practices based on Buddhism, non-Buddhist mindfulness practices such as Qigong, Tai Chi and Yoga are also well-known and widely practiced in Thailand. These practices are mainly used as health promotion techniques and in complementary and alternative medicine, as exemplified by the Qigong Project that a participant attended at the university in which the present study was conducted.

Expectations

Participants expected that participation in the MBSR program would reduce their stress levels in relation to daily life, relationships and study. Similar expectations have been reported by counselling graduate students (Christopher, Christopher, & Dunnagan, 2006) and nurse participants (Cohen-Katz et al., 2005). Some participants in the present study also wanted to learn further techniques although they had previously acquired some basic stress reduction strategies. This is in line with counselling graduate students who participated in a mindfulness course indicated that they saw this as building more in-depth on earlier learning of basic stress reduction techniques (Christopher et al., 2006). In addition to stress reduction, several participants attending the MBSR program anticipated enhancing mindfulness and more effectively regulating their emotions. Such expectations implied that participants probably had some prior understanding of mindfulness practice learned from their parents, teachers, Thai monks or other sources promoting mindfulness in daily living, such as television, radio and magazines.

7.4.2 Experiences of participation

Participants' experiences that occurred both during and after involvement in the MBSR program were identified as 'individual preferences for different practices' and 'benefits of mindfulness practice'.

Individual preferences for different practices

A number of participants reported mountain meditation as the most preferred practice enabling them to sit steadily and longer. A possible explanation is that sitting while paying attention intentionally to a mountain image as instructed by the MBSR teacher assisted participants to become less preoccupied with their bodily discomfort while sitting. Yoga was also reported as a practice that several participants liked the most due to cultivating moment-to-moment awareness of their bodily movement. This finding is 168 in line with that of a study involving counselling graduate students (Schure, Christopher, & Christopher, 2008). Furthermore, group dialogue and inquiry method was a favourite aspect of one participant due to being able to learn from shared experience. This comment supported findings in regard to satisfaction with the MBSR program among nursing students (Young et al., 2001).

In addition to the most preferred practices, the participants reported different opinions about their least preferred aspects of the MBSR program because of challenges of the practice (i.e. sleepiness, restlessness, and discomfort). These comments support previous findings showing that participants found it hard to stay focused and to concentrate (Cohen-Katz et al., 2005), and experienced difficulties in practicing the techniques taught in class (Tarrasch, 2015). Although the participants individually differed in their preference for a number of practices in the MBSR program, the program itself emphasised integrating mindfulness practice more fully, flexibly and personally into everyday life (Blacker et al., 2009). In the last two sessions of the program in particular, participants were encouraged to create a blend of practices that best suited their individual needs.

Benefits of participation in the MBSR program

Enhanced self-care

Most participants benefited from participation in the MBSR program in terms of enhanced self-care. This is consistent with the findings of several previous studies that explored impacts of MBSR/mindfulness programs on participants' experiences (Christopher et al., 2011; Christopher et al., 2006; Christopher & Maris, 2010; Cohen-Katz et al., 2005; Schure et al., 2008; Tarrasch, 2015; van der Riet et al., 2015). In addition, the findings support a quantitative study that found a positive correlation between mindfulness and the importance of self-care (Richards, Campenni, & Muse-Burke, 2010). Self-care is recognised as a pivotal facet of the MBSR experience; as Cohen-Katz, Wiley, Capuano, Baker, and Shapiro (2004) suggest, the act of self-care begins at the point at which participants agree to be involved in the program. Participants in the present study described their improved self-care from the perspective of four distinct components. Firstly, heighted self-awareness was a benefit of mindfulness practice reported by the participants, in line with the suggestion of Tang, Hölzel, and Posner (2015) that a shift in self-awareness is a key aspect of the benefits of mindfulness. Self-awareness is considered to be knowledge of one's thoughts, emotions and behaviours (Richards et al., 2010). The experiences of participants in the present study were similar to those of university students in prior studies (Christopher et al., 2006; Cohen-Katz et al., 2005; Tarrasch, 2015; van der Riet et al., 2015), in that they became more aware of their thoughts, feelings and behaviours. In particular, as one participant emphasised, awareness of negative thoughts (van der Riet et al., 2015) during stressful events (Cohen-Katz et al., 2005) increased. Interestingly, mindfulness practices enabled the participants to be aware of unhelpful and wasteful behaviours such as spending too much time on Facebook and YouTube and playing online games; these are favoured activities of most Thai teenagers nowadays. After joining the MBSR program participants felt more able also decrease their playing time and to increase the time assigned to useful activities.

Secondly, the participants felt they had improved their daily living after participating in the MBSR program. They become more mindful of routine activities to which they had rarely paid attention previously, such as brushing teeth and eating; they believed that this led to improved health. Similarly, students in earlier studies reported significant changes in lifestyle, in particular healthier eating - more textured foods and reduced coffee intake (Christopher et al., 2011). The participants also reported improved sleep patterns associated with using sitting meditation and mindful breathing. This is consistent with several previous studies which showed improvement in sleep quality (Cohen-Katz et al., 2005; van der Riet et al., 2015) with mindful breathing (Tarrasch, 2015) and body scan (Hubbling et al., 2014). In addition to these qualitative findings, quantitative studies have indicated that MBSR may improve sleep quality in healthy adults experiencing difficulties in sleeping (Greeson et al., 2014), and patients with primary chronic insomnia (Gross et al., 2011). Moreover, participants' daily living in terms of eating and spending money was improved through self-regulation, "the process whereby systems maintain stability of functioning and adaptability to change" (Shapiro et al., 2006, p. 380). One participant became more aware of how he spent money in relation to eating, and felt this realisation contributed to more effective self-regulation in this area: "Don't buy what is not necessary. Don't let our feelings of hunger lead us. If *we follow it, we can't stop*" (Nut, p.148). This supports a proposal by Shapiro et al. (2006) that intentionally cultivating nonjudgmental attention through mindfulness practice can lead to self-regulation and ultimately to greater health and well-being.

Thirdly, the participants described improvement in emotion regulation, particularly in relation to anger. Likewise, previous studies have revealed that mindfulness practice can assist participants to regulate their own emotion (van der Riet et al., 2015), using techniques for being less defensive, emotionally reactive and attached to emotional responses (Christopher et al., 2011; Schure et al., 2008). The findings of the present study are also consistent with those of prior quantitative studies. Brown and Ryan (2003) found that people who had higher levels of mindfulness reported significantly greater self-regulated emotion and behaviour. An RCT with healthy adults (Robins, Keng, Ekblad, & Brantley, 2012), showed that an MBSR program can have a beneficial impact on clinically relevant emotion regulation processes including significantly greater decreases in anger suppression and aggressive anger expression. Adaptive emotion regulation associated with mindfulness practice may be explained from the perspective of Grosse's understanding of emotion regulation (Gross, 2014), in which 'attention' deployment affects the downstream processes of cognitive 'appraisal' and emotional 'response'. Accordingly, mindfulness practice can be viewed as a form of attention deployment that alters cognitive appraisal and particularly emotional responses to aversive experiences (Arch & Landy, 2015). A possible explanation for the benefits of mindfulness practice on the study participants' anger management is that they might have learned to attend to, or observe their anger and then appraise it with acceptance, rather than expressing or suppressing it aggressively.

Lastly, in the present study participants reported that regular mindfulness practice was important if the benefits gained were to be sustained. Similar responses were reported in a study by Young et al. (2001). Christopher et al. (2011) also found that participants still practiced some type of formal mindfulness practice 2-6 years after the end of program; and realised the importance of continuing to practice mindfulness throughout their lives. The findings of the present study and others that have reported similar outcomes provide support for the assertion by Kabat-Zinn (2011, p. 296) that "The practice of mindfulness is a lifetime's engagement. Growth, development, and maturation as a mindfulness practitioner and teacher of mindfulness are critical part of the process".

Improved stress management

The findings of the present study suggested that mindfulness practice assists in dealing with stress by cultivating an improved state of mind associated with being centred. One participant in the present study described how she: "just let go of the stress and brought my mind back to breathing" (Nut, p.150). This is congruent with the findings of an earlier study, showing that MBSR participants were better able to stay 'grounded' or in a 'centred' place when they felt overwhelmed (Christopher et al., 2011). Another positive state of mind that led to decreases in participants' stress was being calm; this is consistent with the findings of a study by Tarrasch (2015), in which participants experienced calmer feelings and better coping with stress as a result of mindfulness practice. Participants in the present study had learned from the MBSR program to respond to stress with moment-to-moment and nonjudgmental awareness instead of reacting to it and trying to alter the situation. This seems to have led them to maintain their own centre and to be calmer in the face of stress. It is important to note that the MBSR program itself is not a stress relaxation strategy; however, people who are grounded in calmness and awareness are more likely to see how they might respond to stress more effectively (Kabat-Zinn, 2009). As described by one participant: "Such a calm mind helped me feel relaxed and ready to face stressful situations" (Fa, p.150).

Importantly, these qualitative findings support the RCT results regarding the beneficial effect of the MBSR program on perceived stress. This also suggests some of the mechanisms through which mindfulness practice reduced perceived stress among the participants.

Improved academic performance

A number of participants in this study had improved their academic performance including both study behaviours and academic results. Participating in the MBSR program enabled nursing students to focus more on doing their assignments. Similar experiences were reported in a study by van der Riet et al. (2015). Mindfulness practice also resulted in improvements in the participants' attentive reading and listening. This is in line with the findings of a prior study in which counselling graduate students reported an increased ability to focus and stay more in the present after involvement in an MBSR class (Christopher et al., 2006). In addition to improved study behaviours, better academic results (i.e. higher scores, passing exams) were considered by the participants
to result from taking part in the MBSR program. This is in accord with Hall's (1999) study, in which the GPAs of the meditation group were significantly higher than those of the non-meditation group. How mindfulness practice improved the academic performance of the participants might be explained in terms of enhancing attention capacity as mindfulness itself is intentionally cultivating nonjudgmental attention (Shapiro et al., 2006). Numerous studies point to the utility of mindfulness training for enhancing attentional capacities and attention-related behaviours including learning capacity in children (Brown, 2015). Also, there is evidence that attention-related brain regions (i.e. anterior cingulate cortex; ACC, dorsolateral prefrontal cortex; PFC) show functional and structural changes following mindfulness meditation (Tang et al., 2015). One participant in the present study reported an enhanced capacity to switch her attention between two activities (reading textbooks and accessing online Facebook). This might point to the 'shift' element of attentional abilities, that was defined by Mirsky, Anthony, Duncan, Ahearn, and Kellam (1991) as the "capacity to shift in an adaptive and flexible manner from attending to one aspect or stimulus feature of objects to another aspect" (p. 112).

Although the qualitative findings indicated increased academic performance, no significant MBSR effect on participants' GPAs was detected. Possible explanations for the non-significant effect were mentioned earlier in the section entitled 'Effects of the MBSR program on the outcome; Accumulated grade point average'. Nevertheless, the qualitative findings suggest that the MBSR program had some positive impact on academic results such as GPA.

Enhanced interpersonal effectiveness

Mindfulness practice had impacted positively on the interpersonal relationships of a number of participants, specifically family and peer relationships, consistent with the findings of a previous study with nursing students (van der Riet et al., 2015). In the present study, several participants applied mindfulness practice to increase their sense of acceptance regarding their mothers and classmates, which led to increased satisfaction with these relationships. These findings are in line with those of a quantitative study (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007), in which dating college students with higher levels of mindfulness reported higher levels of satisfaction with their romantic relationships. In addition, participating in the MBSR program benefited

the participants through the cultivation of loving-kindness and compassion in relationships. The participants may have gained this benefit from the loving-kindness meditation that was practiced as part of a full-day class and that guided participants in recognising the qualities of loving-kindness, friendliness, and compassion towards self and others. Rosenzweig (2013) regarded loving-kindness and compassion as 'the sisters of mindfulness' because they are interconnected and important forms of mindfulness. Loving-kindness is a form of inclusiveness of caring (Salzberg, 2011) while compassion towards others involves a deep awareness of others' suffering and the wish to relieve it (Raab, 2014). The nature of the inextricable linkage between loving-kindness and compassion (Rosenzweig, 2013) was well illustrated in the experience of one participant who had often reacted negatively towards her mother prior to commencing the MBSR program: "Now I just say umm, listen to her and don't react emotionally to her... I shouldn't put more stress on her" (Fern, p 153). In addition to increased acceptance, loving-kindness and compassion, mindful communication also resulted from mindfulness practice. A previous study reported that mindfulness enabled participants to be aware of other people's feelings and needs before speaking (Cohen-Katz et al., 2005). Similarly to the experiences reported by nursing students in a study by Beddoe and Murphy (2004), one participant in the present study described how practicing mindful communication assertively contributed to building more effective peer relationships. Further, the mindful and assertive communication of this participant related to her anger management. As discussed in relation to the topic of 'Enhanced self-care; emotion regulation', this suggests the value of mindfulness practice in anger management.

One participant also described how her mindfulness practice had focused on acceptance towards her mother and how this had contributed to her growing self-esteem: "*Now I acknowledge what she did and realise that she did that because she trusted in my maturity... Such thinking makes me have high self-esteem too*" (Fern, p 153). This finding from the qualitative component of the study is congruent with those of the RCT regarding the effect of the MBSR program on self-esteem. It also points to the effect of mindfulness as a mediator of self-esteem, particularly the mechanisms of mindfulness in terms of 'reperceiving' and 'value clarification'.

The qualitative findings associated with the sub-theme 'benefits of participation in the MBSR program' were derived in response to the question of how mindfulness practice played a role in or became part of the participants' daily lives after they had completed the MBSR program. The findings of this sub-theme thus expand the RCT results regarding the effect of the MBSR program on perceived stress, mindfulness, self-esteem and academic performance.

7.5 STRENGTHS OF THE STUDY AND IMPLICATIONS

The strengths of the study were as follows:

1. The methodological strengths of the RCT study included adequate sample size, randomisation of participants to conditions, having a control group, multiple assessment points extending to 6 months after completion of the intervention, high MBSR class attendance rate, low level of sample attrition, and full implementation of procedures for ensuring the rigour of the RCT findings as detailed in section 4.2.13 of Chapter Four (i.e. researcher effects and contamination of intervention).

2. To date, much of the research addressing the use of MBSR has been quantitative in nature, with very few qualitative studies having been conducted to explore participant's experience of participation in MBSR. In the present study, a qualitative descriptive study was conducted to address participants' subjective experience of involvement in the MBSR program and expanded understanding of the MBSR effects on the outcome variables of the RCT.

3. A number of cross-language qualitative studies have failed to address systematically the methodological concerns related to translation process; this can decrease the trustworthiness of the data and overall rigor of the study (Squires, 2009). As a cross-language study, the present study used systematic procedures for maintaining methodological rigour in translating between the two languages (English and Thai) used in the conduct of the research as detailed in sections 4.2.13 (Cross-language validity) and 4.3.5 (Trustworthiness in cross-language study) of Chapter Four.

4. This is the first study to document effects of the MBSR program on psychological variables in Thailand. It appears to be only the second study addressing the effects of

MBSR training on nursing students in an Asian service setting (the other study being conducted in Korea).

5. The study also appears to be the first RCT to investigate MBSR effects on selfesteem and the effects of mediators (perceived stress and mindfulness) between the MBSR intervention and self-esteem in university students.

The results of the present study have important implications for nursing and nursing education. In terms of nursing education, the MBSR program and mindfulness practice could be offered to nursing students in various ways: 1) offered as an elective subject; 2) integrated into related nursing subjects (i.e. mental health and psychiatric nursing); 3) provided as part of extra-curricular MBSR/mindfulness training for nursing (and other health professional) students, in the context of high stress levels being a well-recognised concern within the nurse education and health professional education literature (Goff, 2011; Kernan &Wheat, 2008). Nurse instructors could also be trained in MBSR or mindfulness practices in order to use such practices to enhance the psychological health of nursing students, especially in relation to study and clinical placement related stress. In addition, nurses working in hospitals or community practice could be trained in the end such self-improvements would likely contribute to enhanced quality of care for clients.

7.6 LIMITATIONS AND SUGGESTIONS FOR RESEARCH

There were limitations of this study that should be addressed in future research.

1. The first limitation is limited generalisability of the study results due to the study being restricted to first and second year nursing students of the study university. In addition, the study sample was not necessarily representative of all Thai nursing students given the regional demographics pertaining to the study university. It is possible that the demographic characteristics of nursing students studying in universities located in highly urbanised locations such as Bangkok, differ in important ways from those of nursing students located in regional Thailand. However, since the demographic characteristics of Thai nursing students are in many ways similar (i.e. age, gender, religion), the results are likely to be applicable to nursing students throughout Thailand. In order to elucidate this claim, it is recommended that future studies investigating the impact of the MBSR program on nursing students include participants from the senior years of study. In addition, as there is substantial variability culturally, socially and in religious practice across Asia, caution should be exercised in generalising the results of this study to nursing students in other Asian countries. Moreover, caution should also be exercised in generalising the results of the study to nursing students of the study to nursing student populations located in the very different socio-cultural contexts of Western countries.

2. The results of the present study demonstrated a non-significant effect of MBSR on depression scores; this possibly resulted from the weak test-retest reliability coefficient of the CES-D English version. Thus, the effect of the MBSR on depression in Thai nursing students should be further investigated. Instruments with more robust psychometric properties should also be selected as a measure of depression.

3. Although undertaking one or two more focus groups might have improved the trustworthiness of the qualitative findings, only a single focus group interview was conducted in the study due to the limited timeframe of the PhD candidature and associated tight deadlines for data collection in Thailand. It is suggested that future studies consider undertaking more than one focus group to enhance the trustworthiness of findings.

4. This study relied on self-report subjective outcomes (both quantified and qualified reports), which have the potential to contribute to response bias. In order to provide evidence for the effects of the MBSR on nursing student populations, future studies should consider the inclusion of objective measures (Brown, 2015; Shapiro & Jazaieri, 2015) such as behavioural observation, psychophysiological measures and other biomarkers of stress (i.e. heart rates, blood pressures and cortisol levels).

5. This study did not involve the use of an active control condition in which participants were exposed to any form of intervention. It was not possible to use an active control and/or a placebo control due to lack of availability of resources in the study setting. It is suggested that future studies include active interventions in control groups such as stress management techniques and relaxation training, and compare the outcomes of different interventions to determine whether effects are specific to MBSR or also occur in alternative interventions.

7.7 CONCLUSION

The results of the reviewed studies demonstrated that participation in MBSR resulted in reductions in stress and depression and increased mindfulness among university student populations including nursing students. However, none of these studies evaluated the effect of MBSR on self-esteem in this population. In addition, important methodological limitations were evident in all the studies reviewed. These limitations include small sample size, no use of active control group, lack of blinding in the administration of self-report measures, and insufficient information on the process of randomisation. The present study employed a randomised controlled trial to evaluate the effects of a standardised MBSR program on primary outcomes - perceived stress, depression, selfesteem, and mindfulness, and secondary outcomes - utilisation of health and counselling service and grade point average in Thai nursing students. The RCT also tested whether either stress or mindfulness mediated the outcomes of the MBSR intervention. A qualitative component examining participants' experiences of participation in the MBSR program was included to expand upon the RCT results. What the present study adds to what is known about the effectiveness of MBSR in reducing perceived stress and depression and increasing mindfulness and self-esteem in university student populations generally, and Thai nursing student populations specifically can be summarised as follows:

1. The present study adds support to the findings of previous studies that MBSR can decrease perceived stress in Thai nursing students with sustained effect up to 2 months, and improve mindfulness with longer-term effect up to at least 6 months after completion of the MBSR program.

2. The present study found a non-significant effect of MBSR on depression scores; this contrasts with the findings of a number of previous studies.

3. The present study is the first to demonstrate that MBSR can improve self-esteem and has sustainable effects of up to at least 6-months.

4. The present study provides evidence that the relationship between MBSR and selfesteem is mediated by either perceived stress or mindfulness. 5. The qualitative findings of the study pertaining to the 'benefits of participation in the MBSR program' expanded the RCT results regarding the effect of MBSR on perceived stress, mindfulness, self-esteem, and grade point average.

Accordingly, the significant post-MBSR improvements in outcome measures indicate the utility of the MBSR program in enhancing mindfulness and self-esteem, and assisting nursing students to more effectively cope with stress. In addition, the sustainability of the benefits of MBSR suggests the usefulness of the program in helping nursing students to deal with ongoing stressors they encounter, ultimately leading to improvements in academic performance, the quality of nursing care, and the well-being of future nurses. Moreover, the findings of both the RCT and the qualitative component of the study suggest the applicability and socio-cultural acceptability of MBSR in the Thai context.

7.8 REFLECTION ON THE EXPERIENCE OF UNDERTAKING DOCTORAL RESEARCH

In order to successfully complete this PhD research project, I needed to fulfil two distinct and separate roles, one being that of researcher and the other as the MBSR instructor delivering the intervention. As a researcher, I employed a rigorously systematic and theoretical research process to respond to the research questions outlined for the present study. Concurrently, I undertook the extensive training process outlined for those wishing to become a MBSR instructor qualified to provide the standardised MBSR program delivered as the intervention under investigation. Initially, it seemed that this would be a secondary role undertaken by necessity in order to conduct the proposed research project. In practice, however, my training and subsequent practice as an MBSR instructor has benefitted me considerably both in everyday life and throughout my journey as a PhD student. The practice of mindfulness has been the focal point of these two roles throughout my PhD research. Thus, this reflection tells of my experiences with mindfulness practice and the MBSR program (the phenomenon under investigation) and the impact that this mindfulness practice has had upon my personal life; my role as instructor delivering the MBSR program; and as a researcher interpreting the qualitative data in the present study.

I am a Thai national from a small northern province. English is my second language and I am the only person in my family to complete undergraduate and postgraduate university studies and to work in an academic role in nursing. My parents, husband and two sons live in a small village that is seldom visited by Westerners. Mindfulness is a word with which I have been familiar since childhood. I was taught by my parents and teachers to 'Be mindful as you face any difficulties' and that 'Without mindfulness, you are living a careless life'. The benefits of mindfulness and instructions that related to cultivating mindfulness were reinforced via sources such as TV, radio and magazines promoting mindfulness in daily living. At that time, I had learned that mindfulness was a good thing to practice; however, these messages did not seem to help me understand clearly how to apply it in my daily life. As an adult, I completed a Masters degree in Nursing and developed some understanding of what mindfulness is and how to practice mindfulness from reading the Dharma (teaching) books written by famous Buddhist monks and masters. I knew that mindfulness is awareness of what we feel and think and how we act in the here and now. In spite of my developing knowledge, I rarely practiced mindfulness in my everyday life.

In 1999-2006 I worked as a mental health nursing lecturer in the Faculty of Nursing, Burapha University, Thailand. Over time I developed a strong interest in the importance of stress reduction for the maintenance of mental health. In 2007, I established the Mental Health Counselling Centre at the School of Nursing, the University of Phayao where I now work, in order to provide mental healthcare, particularly stress relaxation for my colleagues and students. This centre was later to be considered as the 'usual treatment' condition for participants in the present study. Two years later I had an opportunity to participate in a three-day retreat at the Northern Insight Meditation Centre that offers contemplative retreats for Thai and non-Thai meditators. At the retreat, experienced Thai monks and nuns taught me Buddhist meditative practices in the Theravada tradition (Satipathana Sutra). I realized how useful these practices are to relieve the stresses of everyday life. I tried to share Buddhist meditative practices and the mindfulness practice that I had learnt with others as a stress relaxation technique, without success. I think this was perhaps because of the difficulties that I had experienced personally as I attempted to apply the formal practices in my own life. I asked myself how I could enable my students to use a practice that would be beneficial for them and how I could make this accessible to them.

In September 2010, I travelled alone to Newcastle, Australia to commence doctoral studies. I planned to research the usefulness of mindfulness in the context of Dialectical Behaviour Therapy (DBT) (Linehan, 1993a, 1993b). This therapy incorporates mindfulness within cognitive behavioral therapy and I thought that it would be helpful to my students. Upon commencement of my doctoral studies, I discussed this with my supervisors, Prof. Michael Hazelton and Dr. Rachel Rossiter. I began to understand that DBT was a specialized treatment developed initially for people with conditions such as Borderline Personality Disorder. My supervisors directed my attention towards mindfulness-based stress reduction (MBSR) (Kabat-Zinn, 1982; Kabat-Zinn, 2003; Kabat-Zinn, 2009) a therapy of which I was unaware. As I carefully reviewed the professional literature related to MBSR, I realized that MBSR was potentially the answer to my search for an intervention that would be helpful for my students. I was impressed with Kabat-Zinn's ability to clarify mindfulness practice and make it accessible to people struggling with stress related issues and physical and psychological health problems.

This exploration and extensive discussions with my supervisors resulted in my decision to learn MBSR as a therapeutic intervention and to pursue formal training while in Australia in order to achieve accreditation as a MBSR teacher. My initial intention in learning MBSR was to enable me to undertake doctoral level research designed to study the effects of MBSR on Thai nursing students' stress, depression and self-esteem. I also hoped to teach it to others in my home community especially nurses, health care providers and patients, including the stress management and relaxation room clients. Unanticipated, however, was the personal impact of MBSR. Regular personal practice has enabled inner growth and self-discovery that I had never before experienced and my growing 'friendship' with mindfulness has arisen from this practice.

The journey to my now close 'friendship' with mindfulness was much more confronting and rewarding than I could have ever imagined. A pre-requisite to undertaking MBSR instructor training was the completion of a 10-day silent mediation retreat. I booked to undertake this retreat at the International Meditation Centre (IMC), in Sunshine, Australia. The retreat provided the basis for my development of the foundational attitudes that underpin mindfulness practice. Prior to attending, I felt significant ambivalence about undertaking the retreat. I worried about how I would manage without talking to others for 10 days and whether I could clearly understand the teacher's instruction in English. At the same time I was curious about the prospect of learning an Eastern formal meditation practice with a Western teacher.

The day I was to leave for the IMC I awoke overwhelmed by feelings of anxiety. My thoughts went to Rachel, one of my supervisors. I met with her expressing through my tears, my thoughts and feelings, 'I am always able to cope with any difficulties I face, so I wonder why I fear the upcoming situation'. With a kind and warm hug and empathy for my feelings, Rachel suggested that, 'It is not unusual for someone to feel anxious when they have to encounter new things, this occurs frequently in our lives.' This response enabled me to reconnect with the reality of the present moment, which was 'fear is fear' and 'fear does not mean weakness'. As I later reflected upon this moment, I realized the impact of a warm and non-judgmental attitude. Rachel had not judged my feelings and thoughts as good or bad and she has been able to model 'acceptance' as she fully let me be as I was at that moment. Non-judging and acceptance are foundational attitudes in mindfulness practice (Kabat-Zinn, 2009).

I was now able to mindfully attend the 10-day Vipassana meditation retreat and accept my experience while seeing it as it was. At the retreat my teacher suggested that I not bring any past experience of meditation or mindfulness practice along with me during the 10 days. He asked all students to follow his instructions to practice carefully, so that we could prove whether the practice would be useful for us at the end of the course. I was learning another of the foundational attitudes of mindfulness, that of 'beginner's mind'. In other words, I was developing an open mind, to see all things as if for the first time and avoid being caught up in expectations based on my past experiences (Kabat-Zinn, 2009). While undertaking sitting meditations that lasted for up to an hour at a time, I experienced my body, and more especially both legs, as painful and numb. I tried to be patient with these sensations and did not move my body at all because I wanted to observe my changing experience of pain as it arose, stayed, and dissolved. I felt this would help me to understand the impermanence of all things. However, this not only made me more tense, it also interfered with my capacity to cultivate mindfulness. I discussed this issue with my teacher during the reporting time. He advised "Do not be hurried and rigid"; "Prior to making your pain the object of meditation, you should diminish the pain first, by moving your body slowly and mindfully until comfortable,

then use that movement as an object of meditation, and see the change in sensations of pain that result from that movement". This experience helped me to cultivate a 'nonstriving' attitude. Meditation is practice in awareness, not in self-mortification (i.e. an excessive and rigorous focus on bringing myself 'under control' by self-denial or selfdiscipline) (Gunaratana, 2002). Likewise, Kabat-Zinn (2009, p. 37) notes that mindfulness "...has no goal other than for you to be yourself". I learned that the way to achieve my goal was to back off from striving for results and accept things as they are. This fundamental attitude is supported by the Buddha's teaching regarding the Middle Path - the path that avoids the extremes of indulgence in either the pleasures of the senses or self-mortification (Santina, 1984). Consequently, I learned that being patient and practicing moderation in combination with compassion towards myself is beneficial in my daily life.

The foundational attitudes in mindfulness practice that I had developed while participating in the 10-day retreat (non-judging, acceptance, open-mind, and non-striving) were modelled to my participants in the present study via my MBSR instructor role in delivering the MBSR program and my research role in facilitating a focus group interview; and were also used as the foundational attitudes underpinning my interpretation of the qualitative data.

Further invaluable experiences followed as I attended the eight-week MBSR program as a participant and then undertook formal MBSR teacher training. I began the first two classes of the eight-week MBSR program with a high level of stress again linked to my concerns about the language barrier. Remember, English is my second language, and I had been in Australia less than one year. I worried that if I could not understand what my teacher and classmates said or even communicate with them, I might practice ineffectively and not achieve my goals. The more anxious I felt, the more my body displayed my distress with physical symptoms. During group discussions I noticed my heart beating rapidly, the dryness of my mouth, and my cold hands. As my anxiousness increased I struggled to hear and understand what others were saying. After participating in a 'mindfulness of breathing' exercise, I became aware of my thoughts. I realized that my thoughts were pre-occupied with fears about the future. With this realization I breathed deeply, let myself be with the here and now, acknowledged and welcomed both MBSR and the English language as new experiences. This mind state enabled me to relax into calmness and left me with more energy to see options for participating effectively. At that time, my supervisors' feedback on my recent written work came to mind, "Your writing is improving rapidly." This suggested to me that my written English was markedly more fluent than my spoken English so I asked my teacher and classmates if I could share my experience during group discussions by reading prepared notes instead of trying to speak directly. I also arranged to send my reflections about each class to my teacher who kindly gave me extra time to discuss these with her after class each week.

My direct experience with high stress levels in response to the language barrier I encountered in trying to communicate in English enabled me to understand clearly the physical reactions that arise in response to stress. This first-hand experience was further examined during the Week 4 class in the MBSR program when the topic 'the negative effects of stress reactivity and the mindful way of responding to stress' was taught. In addition, my own experience of having 'a calm mind' assisted me in interpreting data from a participant who reported 'a calm mind' that led to a decrease in her stress levels as a benefit of mindfulness practice.

Only a week after completing the eight-week MBSR program, I travelled south of Sydney to participate in the seven-day MBSR/MBCT (Mindfulness-based Cognitive Therapy) teacher training course where I expected to learn and understand how to be the best MBSR teacher I could possibly be. Like the other mindfulness courses which I had attended in Australia, I was again the only Thai person present, this time amongst sixty participants. Again, anxiety related to my limited English overwhelmed me on the first day of the course. I struggled to totally follow and understand the deeper and wider discussion. Immediately, my mind was flooded with thoughts that I would certainly fail this course. As would be expected this negative thinking produced the physical and emotional reactions indicative of high levels of stress. The practices I had learned during the 8-week MBSR program now began to 'bear fruit' and a return to mindful breathing enabled me to 'just be with whatever feelings and thoughts were arising in that present moment, and let them be and let go of them with my breath'. On reflection, this steadiness allowed me to identify solutions rather than to remain flooded with anxiety. Sitting close to my teachers in order to hear them more clearly, sharing written notes with my classmates, and just doing things as I could helped to maximize my learning in what was indeed a challenging situation. I also focused on what I was learning at each moment rather than focusing on fear of failure or on the pressure imposed by the expectation of success.

These experiences enabled me to identify my habitual response in situations that involve new experiences, commitments or goals and in fact any situation where results or an outcome is expected. I became aware of how I always expect to succeed in any of my plans and how in my mind, 'must' is paramount. I began to recognize the host of 'must' thoughts behind my feelings of anxiety. For example, 'I must practice formal meditation properly and perfectly during the 10-day meditation retreat', 'I must completely understand the details of all mindfulness practices in the eight-week MBSR program', and 'I must complete the seven-day MBSR/MBCT teacher training course successfully', 'I must complete this so that I can complete my PhD'. In Thailand, I had hardly been aware of these 'must' thoughts, perhaps because most of them were directed towards goals that had few if any obstacles impeding their successful completion. Having been blessed with 'good luck', adequate resources, and sound intellectual abilities, my 'must' thoughts had been rewarded with success and had become ever stronger. As my mindfulness practice deepened, I came to realize that 'must' now formed a deep part of my personality and the power of 'must' drove me to seek perfection. I found within myself a relentless drive to do everything perfectly, with high expectations of achieving my goals no matter how high and allowing myself nothing less than perfection.

Unexpectedly, the language difficulties I encountered while learning and practicing MBSR in Australia disrupted the stream of my 'must' thoughts and uncovered the perfectionistic thoughts and behaviours that had been hidden from my awareness. Perfectionists usually make conscientious efforts to strive to meet the high standard they set for themselves, cling to or attach to future focused outcomes, and struggle to be in the present moment (Flett & Hewitt, 2002). Such clinging and attachment disrupts attempts to relax and the person experiences a persistent sense of strain that can range from being subtly unpleasant to intensely uncomfortable (Hanson, 2011), leading to ongoing suffering (Dukkha in Pali). As Buddhadasa Bhikkhu (1997) stated 'If there is attachment, there is Dukkha'. In Buddhist thought, suffering means that deep, subtle sense of dissatisfaction that is a part of every mind moment, and results directly from

the mental treadmill (Gunaratana, 2002). For me, I had experienced suffering arising from the perfectionistic thoughts. This suffering included tension while striving too hard to reach my goals, and anxiety when faced with obstacles that blocked or threatened my achievement of those goals.

My growing understanding of the role that this striving for perfection held in my life is illustrated by a poem written after completing the instructor training.

My Closest Friend

Since I was young,

I've had a closest friend named 'perfectionist'

She loves wandering to a future world.

Particularly, the place called 'goals'.

Every time she goes,

I feel anxious with rapid heartbeat, restlessness and insomnia.

Many times, I try to reject her as not my friend,

But I can't.

How will I be with her happily?

Mindfulness is a way I choose.

Getting started, I

Sincerely hold her with my arms until she calms down.

Intentionally listen to whatever she says.

'To reach my goal with doing my best,

I need to use my whole energy to go there' said she.

'But this exhausts me' she also said.

Fully accept whatever she is, do not judge her as good or bad.

Kindly offer her the way of mindfulness as a new alternative.

'Be aware of every step of the journey to your goal'

'Mindfully notice and experience all feelings,

emotions and thoughts at the moment'

'Let unpleasant feelings go'

'Be aware of pleasant feelings'

Following this way,

Her image has changed.

She gave me flowers picked from both sides of the way to the latest goal.

I gave her a new name, 'happiness'.

- Napaporn Aeamla-Or

The suffering so closely linked to my attachment to my 'closest friend perfectionist' had frequently arisen as I was confronted by the difficulties of doctoral studies. And yet again, I have been surprised to find that the mindfulness that I now practice has enabled me to bring myself back to the reality of the present moment. Mindfulness helps me to see my suffering that I have so often created for myself and how situations really are, whilst enabling me to accept what is happening in that moment, letting go of who I used to be and whatever I am clinging too so strongly. It has also helped me to find ways to overcome problems more effectively than was possible prior to my regular practice. My perfectionism focuses my attention towards attaining goals at an often impossible to reach standard, while in contrast mindfulness enables me to observe and be with whatever is already there, without the anxiety, distress and pain of clinging to the expectations of perfectionism (Gunaratana, 2002). The role of mindfulness as 'my best friend' is described in the following poem that I wrote before commencing a pilot delivery of the MBSR program for the present study.

My Best Friend

Always

I have suffering, she is beside me.

But often,

I am too anxious to realize she is here.

Even if I forget her over and over,

She never leaves me.

She is still there to encourage me silently.

Until

I turn around to look at her.

She kindly smiles and sincerely embraces

We then are with my breathing...together

Ease, stillness, peace...

I am now ready to solve.

Place the problem in front of us.

See it as it is.

Prioritize realistic solutions I can do.

Do all things mindfully.

She helps me every step,

until the problem is completely fixed.

Her name is 'Mindfulness'

I regard her as 'my best friend' in my lifetime.

- Napaporn Aeamla-Or

Almost a year since completing the seven-day MBSR/MBCT teacher training course, I had carefully reviewed the curriculum of the standard MBSR program. I had regularly practiced both the formal mindfulness practices and informal mindfulness practices in keeping with the commitment required of MBSR teachers. Knowing that I would be teaching MBSR in Thai in my own community I have sought to understand the program as clearly and deeply as I can. Since practice is indeed the best teacher, the more I practice, the more deeply I learn both for myself and for those with whom I share MBSR. Following McCown (2013, p. 100) my growing capacity to move towards acceptance of my own experience enables me to bring an authentic presence to my students. So important to my well-being is mindfulness, my best friend that I try to take 188

her everywhere with me, particularly, in attempts to improve my English. She was always with me in every oral presentation and mindfulness workshop I undertook. I regularly presented (oral presentations) on various topics related to my PhD research at numerous conferences (school, faculty, and international) from the second year of my doctoral study. I also facilitated a mindfulness workshop as a part of the 2-day workshop for Masters degree nursing students who enrolled in the subject NURS6053 (Therapeutic Engagement and Psychosocial Interventions), School of Nursing and Midwifery, the University of Newcastle. I conducted the workshop with Dr Rachel Rossiter in 2012-2013, with Prof Michael Hazelton in 2014, and with Mr John Sharples and Dr Graeme Browne in 2015. Substantial improvement in my sociolinguistic language competence in English for four years qualified me to undertake the initial translation of the qualitative transcripts prior to having these verified for accuracy by a qualified bilingual validator.

My life is now enriched by 'my best friend' mindfulness. She teaches me that when I lose touch with her, returning to that increasingly familiar state of awareness brings mindfulness back to my side. When my ex-closest friend 'perfectionism' appears yet again, in particular coming to help me complete my study, both my supervisors usually see her first; they then tell me to be mindful of her. And as always, mindfulness helps me to acknowledge her and attend to her needs until she again says good-bye with relief and contentment.

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APPENDICES

APPENDIX 1: Agreement with Research Assistant A

APPENDIX 2: Agreement with Research Assistant B

APPENDIX 3: An example of MBSR Practice Manual

APPENDIX 4: An example of MBSR Teaching Manual

APPENDIX 5: The Demographic Questionnaire

APPENDIX 6: Verified Translation of the Demographic Questionnaire

APPENDIX 7: The Perceived Stress Scale (PSS-10)

APPENDIX 8: The Perceived Stress Scale (PSS-10) – Thai Version

APPENDIX 9: The Centre for Epidemiology Studies-Depression Scale (CES-D)

APPENDIX 10: The Centre for Epidemiology Studies-Depression Scale (CES-D) –

Thai Version

APPENDIX 11: The Rosenberg Self-Esteem Scale (RSES)

APPENDIX 12: The Rosenberg Self-Esteem Scale (RSES) - Thai Version

APPENDIX 13: The Mindful Attention Awareness Scale (MAAS)

APPENDIX 14: The Mindful Attention Awareness Scale (MAAS) – Thai Version

APPENDIX 15: The Health and Counselling Service Utilisation Questionnaire

APPENDIX 16: Verified Translation of the Health and Counselling Service

Utilisation Questionnaire

APPENDIX 17: Permission for Use of the PSS-10 Thai Version

APPENDIX 18: Permission for Use of the CES-D Thai Version

APPENDIX 19: Permission for Use of the RSES Thai Version

APPENDIX 20: Permission for Use of the MAAS Thai Version

APPENDIX 21: Teaching Manual for the MBSR Pilot Study

APPENDIX 22: Practice Manual for the MBSR Pilot Study

APPENDIX 23: Information Sheet for the RCT Study

APPENDIX 24: Verified Translation of Information Sheet for the RCT Study

APPENDIX 25: Consent Form for the RCT Study

APPENDIX 26: Verified Translation of Consent Form for the RCT Study
APPENDIX 27: Advertisement Flyer

APPENDIX 28: Verified Translation of Advertisement Flyer

APPENDIX 29: Verification of Translation

APPENDIX 30: Agreement with Academic Mentorship in Thailand

APPENDIX 31: Preliminarily Qualitative Findings

APPENDIX 32: Information Sheet for the Qualitative Study

APPENDIX 33: Verified Translation of Information Sheet for the Qualitative Study

APPENDIX 34: Consent Form for the Qualitative Study

APPENDIX 35: Verified Translation of Consent Form for the Qualitative Study

APPENDIX 36: Focus Group Interview Schedule

APPENDIX 37: Verified Translation of Focus Group Interview Schedule

APPENDIX 38: Ethics Approval from the University of Newcastle

APPENDIX 39: Ethics Approval from the University of Phayao

APPENDIX 40: Approval from President of the University of Phayao

APPENDIX 41: Agreement with Ethics Representative in Thailand

APPENDIX 42: Summary of participants flows of included studies

APPENDIX 1: Agreement with Research Assistant A



3 May 2012

Ms Saengduean Phromkeawngam School of Nursing The University of Phayao Muang, Phayao 56000 Thailand

Dear Ms Saengduean Phromkeawngam,

Mrs Napaporn Aeamla-Or is a nurse lecturer at School of Nursing, the University of Phayao. She is currently undertaking PhD studies under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.* It is proposed that participants in the study will be recruited from nursing students studying in the first and second years of the nursing program at the School of Nursing, the University of Phayao.

Mrs Napaporn Aeamla-Or would be greatly assisted in the conduct of her research in Thailand, if she has a research assistant who can provide a brief description of the purpose and what is involved in the study at face-to-face lectures for first and second year nursing students. In addition a research assistant could also coordinate qualitative data collection, especially taking field notes of the focus group proceedings during data collection in Thailand. I believe you have suitable qualifications and experience to provide the required research assistance and would be most grateful if you could do so. I would thus like to invite you to be a research assistant for the research project.

If you agree to this request, I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

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Yours sincerely,

Professor Michael Hazelton Head of School School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

Approval:

I agree to be a research assistant for Mrs Napaporn Aeamla-Or, a PhD candidate under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia and to provide a brief description of the project to potential participants and coordinate qualitative data collection for her project: *the Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial* in Thailand.

| Signature | nte | 19 May 2 | 012 |
|-----------------------------------------------------|-----|----------|-----|
| Ms Saengduean Phromkeawngam, PhD candidate, M.N, RN | | 1 | |

| NEWCASTLE | 1 | CENTRAL | COAST | 1 | PORT MACQUARIE | | 1 | SINGA | PORE |
|-------------------|------|-----------|-----------|--------|------------------|----|-------|----------|--------|
| The University of | Newo | astle | enquiryce | entre@ | newcastle.edu.au | Т | +61 | 2 4921 | 5000 |
| Caliaghan NSW 2 | 308 | Australia | CRICOS P | rovide | Number: 00109J | WV | ww.ne | wcastle. | edu.au |

APPENDIX 2: Agreement with Research Assistant B



3 May 2012

Assistant Professor Torpong Kreetachat School of Energy and Environment The University of Phayao Muang, Phayao 56000 Thailand

Dear Assistant Professor Torpong Kreetachat,

Mrs Napaporn Aeamla-Or is a nurse lecturer at School of Nursing, the University of Phayao. She is currently undertaking PhD studies under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.* It is proposed that participants in the study will be recruited from nursing students in the first and second years of the nursing program at the School of Nursing, the University of Phayao.

Mrs Napaporn Aeamla-Or would be greatly assisted in the conduct of her research in Thailand, if she had a research assistant who can coordinate quantitative data collection (measuring outcomes at baseline, 8-weeks, 16-weeks, and 32-weeks follow-up) during data collection in Thailand. I believe you have suitable qualifications and experience to provide the required research assistance and would be most grateful if you would agree to do so. I would thus like to invite you to be a research assistant for the research project.

If you agree to this request, I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

| NEWCASTLE | | CENTRAL | COAST | L. | PORT MACQUARIE | | | SINGAP | ORE |
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| The University of Ne | wca | stle | enquirycer | ntre@i | rewcastle.edu.au | Τ | +61 | 2 4921 5 | 6000 |
| Callaghan NSW 230 |)8 A | ustralia | CRICOS Pr | ovider | Number: 00109J | WV | vw.ne | wcastle.co | duau |

Yours sincerely,

Professor Michael Hazelton Head of School School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

Approval:

I agree to be a Research Assistant for Mrs Napaporn Aeamla-Or, a PhD candidate under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia and to coordinate quantitative data collection for her project: the Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial in Thailand.

Assistant Professor Torpong Kreetachat

Vice Dean for Admistrative Affairs of School of Energy and Environment

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APPENDIX 3: An example of MBSR Practice Manual

Mindfulness-Based Stress Reduction (MBSR) Program: Practice Manual

MBSR Class One

Guidelines for participation

- Confidentiality: maintain confidentiality outside of class by not repeating what is said in class.
- Self-care: be your own authority in responding to invitations; during class if you notice that something does not feel right for you, ease off, please feel free to contact the instructor regarding concerns or questions.
- Communication with the instructor: contact the instructor via phone/email during the week, if any questions come up and you would prefer to talk or get some extra help with your own home practice.
- No advice-giving: speak from your own experience; demonstrate respect for each person's own journey.
- *How to use the practice manual and CD* (think of the practice as your teacher)
- Logistics: class starts on time; turn off mobile phones; no breaks during classexcept to go to the toilet.

Body Scan Guidelines

- Do not listen to this CD while driving
- Regardless of what happens (falling asleep, losing concentration, and being distracted by thoughts, emotions or other physical sensations), simply stay with the practice. These are your experiences in the moment and all you have to do is be aware of them and see them as they are. If you are distracted by wandering thoughts, emotions or other physical sensations, simply observe them as passing events, and then gently bring your attention back to the instruction on the CD.

- Notice if you have thoughts about "success", "failure", "doing it right/wrong" or "not getting anywhere". This is not a competition or a skill that you need to strive at perfecting or achieving. Let youself be curious and open to this new experience. It is about feeling the way you feel, it is not about getting somewhere else. Just allow yourself to be where you already are.
- Move from "way of doing" into "way of being", by being with the sensations in the body from moment to moment, allowing and making space for each moment as it is.

Our breath is the bridge from our body to our mind, the element which reconciles our body and mind and which makes possible oneness of body and mind. Breath is aligned to both body and mind and it alone is the tool which can bring them both together, illuminating both and bringing both peace and calm.

Thich Nhat Hanh

(The Miracle of Being Awake)

"The point is that really this mind of ours is naturally peaceful. It's simply radiant in and of itself. It's still and calm like a leaf that is not being blown about by the wind. But if the wind blows then it flutters. It does that because of the wind. And so with the mind it's because of these moods - getting caught up with thoughts. If the mind didn't get lost in these moods it wouldn't flutter about. If it understood the nature of thoughts it would just stay still. This is called the natural state of the mind.

But the natural state of a person's mind isn't one of happiness or sadness. This experience of happiness and sadness is not the actual mind itself, but just these moods which have tricked it. The mind gets lost, carried away by these moods with no idea what's happening. And as a result, we experience pleasure and pain accordingly, because the mind has not been trained yet. So we really have to come and train our minds in order to grow in wisdom and understand the true nature of thoughts rather than just following them blindly."

Phra Bodhiyana Thera (Venerable Ajahn Chah)

Home practice assignment

- 1. Body scan recording 6 days this week
- 2. Complete Nine Dots Exercise
- 3. Eat one meal mindfully this week

Nine Dots Exercise

Instruction: Please connect up all nine dots with four straight lines, without lifting the pencil off the page and without retracing along any lines.



APPENDIX 4: An example of MBSR Teaching Manual

Mindfulness-Based Stress Reduction (MBSR) Program: Teaching Manual

MBSR Class One

Overview

This session includes a review of the intervention and the establishment of a learning contract with the patient/participant. The theoretical underpinnings of Mind-Body Medicine and the application of self-regulatory skills as related to the patient's individual referring diagnosis are also established. The participant is experientially introduced to mindful eating, mindfulness of breathing and the body scan home practice is assigned using the first guided recording (body scan meditation) as a means of beginning to learn to become familiar with mindful awareness of the body.

Theme: Opening to New Possibilities

From our point of view, there is more right with you than with wrong with you, no matter what challenges you are facing. Challenges and difficulties are workable. Mindful awareness, defined as paying attention, on purpose, in the present moment, non-judgmentally, is fundamental to this work since the present moment is the only time anyone has to perceive, learn, grow or change.

Class sequence summary

- 1. Welcome and introduction
- 2. Opening meditation
- 3. Guideline for participation
- 4. Individual internal reflection
- 5. Yoga practice
- 6. Sultana exercise
- 7. Abdominal breathing
- 8. Body scan
- 9. Home practice assignment

Class details

1. Welcome and brief introduction of program by the instructor

- In 1979, Jon Kabat-Zinn, the founder of the MBSR program and a student of Buddhist meditation practices, was working in a hospital and saw that many people, even though they were getting the best care available, were still suffering terribly-especially when their condition could not be cured, for example terminal illness, chronic illness, illness-related anxiety and depression. He discovered that even with a short period (8 weeks) of mindfulness practices, people could make quite remarkable changes in themselves so that they suffered less.

- It is embedded within the context of Mind/Body and Integrative Medicine. (What we do with the body effects the mind, and vice versa)

- It is also a secular program teaching practices based on Buddhist psychology.

- It is designed to teach program participants how to integrate and apply mindfulness in their everyday lives and to the range of challenges arising from physical and psychological conditions as well as to life stresses.

- Evidence based on 30- year of research

2. Opening meditation

- *Brief introductory meditation*: becoming attentive to and aware of thoughts, emotions, and sensations in the present moment. (See Appendix 1: Opening meditation with mindful bell)

- Class responses to opening meditation: inviting a few responses.

3. Guidelines for participation

- *Confidentiality*: maintain confidentiality outside of class by not repeating what is said in class.

- *Self-care*: be your own authority in responding to invitations; during class if you notice that something does not feel right for you, ease off, please feel free to contact the instructor regarding concerns or questions.

- *Communication with the instructor*: contact the instructor via phone/email during the week, if any questions come up and you would prefer to talk or get some extra help with your own home practice.

- *No advice-giving*: speak from your own experience; demonstrate respect for each person's own journey.

- How to use the practice manual and CD (think of the practice as your teacher)

- *Logistics*: class starts on time; turn off mobile phones; no breaks during class-except to go to the toilet.

4. Individual internal reflection

- *Guided internal reflection*: small group or dyad sharing about guided reflection- What has brought you here? What is your intention? What do you really want?

- *Group go around*: go around the room and give people the opportunity to introduce themselves, what they are here for, and their expectations for the program. The instructor may make instructive comments, observations, and welcoming remarks from time to time in response to individuals. Connect what participants have raised to Jon Kabat-Zinn's definition of mindfulness- Paying attention: on purpose, in the present moment and nonjudgmental.

5. Yoga: Introduction to standing Mountain Pose and other standing poses

With an emphasis on contacting a groundedness and openness in the body, and perhaps focusing on metaphors of " taking one's ground in life", "taking a stand" in relation to the issues they have brought to the class, and that "understanding" is embodied. That what we will be learning here, we are going to be learning through the body as well as the mind, so that it can be grounded in our ordinary day-to-day experience. In addition, the practice emphasizes finding middle ground in relation to gravity, exploring forward and backwards, and side to side leanings, noticing shifts in sensations and also in what it is like to find a middle ground.

6. Raisin-eating exercise

Theme: The purpose of this practice is to demystify the concept of meditation. We let a raisin become the meditation teacher as well as the primary object of attention.

- Focus on direct sensory observation- what can be seen, felt, smelled, heard, and tasted. Simply to be with each moment as it is.

- The instructor is attentive to observations that become deductions, opinions and theories removed from immediate experience.

- Observing and then slowly eating one sultana with guidance from the instructor, stopping for observations from participants.

- Discussion of the experience

- Introduction to mindfulness meditation- mindfulness of eating

7. Abdominal breathing

Theme: Your belly is literally the 'centre of gravity' of your body, far below the head and the turmoil of your thinking mind. Therefore, focusing on the breath at your belly is so useful to establish calmness and awareness, especially in the early stages of practice.

- Tie the moment-to moment awareness of eating exercise to experiencing the breath in the same way. Mindfully taste the breath in the same way that the group tasted the raisin.

- Focus on feeling of the abdomen rising and falling with the in-breath and the outbreath. Non-judgmentally observing one's own breathing from moment to moment; and bringing one's attention back to the breath and the present moment when it wanders.

8. Body scan

Theme: It is a deep investigation into the moment-to-moment experiences of the body. Simply become aware of physical sensations by exploring their felt senses. This is distinct from thinking about your body. There is no need to analyse or manipulate your body in anyway, just feel and acknowledge whatever sensations are present.

- From mindfulness of breathing, move into guided body scan with participants continuing to lie on the floor or sitting in comfortable position.

- Group discussion of participants' experiences with the body scan.

9. Set home practice

- Assign daily home practice

- Give instructions for use of the 45-minute body scan recording for a central home practice during week 1.

10. Take attendance

- Attendance can be considered a mindfulness exercise each week or just have a form at the door where participants tick off their names as they arrive and pick up their name tags.

Home practice assignment

- 1. Body scan recording 6 days this week
- 2. Complete 9 dots exercise
- 3. Eat one meal mindfully this week

APPENDIX 5: The Demographic Questionnaire

Demographic Questionnaire

Instruction Please enter the following demographic information by placing an (X) the

re aces.

| relevant box, and record | ling your | personal data in the blank spaces. |
|---------------------------|-------------|------------------------------------|
| 1. Age y | vears | |
| 2. Sex | | |
| () female | (|) male |
| 3. Year of study in the I | Bachelor of | of Nursing |
| () first year | (|) second year |
| 4. Accumulated grade p | oint avera | age |
| 5. Religion | | |
| 6. Family status | | |
| () Parents live | ing togeth | ner |
| () Parents sep | arated or | divorced |
| () Father dece | eased | |
| () Mother dec | ceased | |
| () Both father | r and mot | her deceased |
| 7. Sufficiency of allowa | ince | |
| () sufficient | (|) insufficient |
| 8. Experience of mindfu | ılness pra | ctice |
| () I have no p | previous e | experience of mindfulness practice |
| () I have prev | ious expe | erience of mindfulness practice |
| | | |

Please briefly indicate the nature and extent of previous mindfulness practice

.....

APPENDIX 6: Verified Translation of the Demographic Questionnaire

แบบบันทึกข้อมูลส่วนบุคคล

| <u>กำชี้แจง</u> กรุณากรอกข้อมูลส่วนบุคคลของท่านโดยกาเครื่องหมาย X ลงในช่อง () และบันทึกข้อมูลลงใน ช่องว่าง |
|----------------------------------------------------------------------------------------------------------------|
| 1. อายุบี |
| 2. IWFI |
| () หญิง () ชาย |
| 3. ระดับชั้นปีที่กำลังศึกษาในหลักสูตรพยาบาลศาสตรบัณฑิต |
| () ชั้นปีที่ 1 |
| 4. ผลการเรียนเฉลี่ยสะสมในทุกภาคการศึกษาที่ผ่านมา |
| 5. ศาสนาที่นับถือ |
| 6. สถานภาพของครอบครัว |
| () บิดาและมารดาอยู่ด้วยกัน () บิดาและมารดาแยกกันอยู่/หย่าร้าง |
| () บิคาเสียชีวิต () มารคาเสียชีวิต () บิคาและมารคาเสียชีวิต |
| 7. ความเพียงพอของค่าใช้จ่ายที่ท่านได้รับ |
| () เพียงพอ () ไม่เพียงพอ |
| 8. ประสบการณ์เกี่ยวกับการฝึกสติ |
| () ไม่เคย |
| () เกข |
| หากท่านมีประสบการณ์ กรุณาระบุถักษณะและระดับของการฝึกสดิที่ท่านเคยฝึก |

APPENDIX 7: The Perceived Stress Scale (PSS-10)

The Perceived Stress Scale (PSS-10)

Instruction The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often* you felt or thought a certain way. For each question choose from the following alternatives:

0: Never, 1: Almost never, 2: Sometimes, 3: Fairly often, 4: Very often

| Items | Never | Almost | Some- | Fairly | Very |
|--------------------------------------------------|-------|--------|-------|--------|-------|
| | | never | times | often | often |
| 1. In the last month, how often have you been | | | | | |
| upset because of something that happened | | | | | |
| unexpectedly? | | | | | |
| 2. In the last month, how often have you felt | | | | | |
| that you were unable to control the important | | | | | |
| things in your life? | | | | | |
| 3. In the last month, how often have you felt | | | | | |
| nervous and stressed? | | | | | |
| 4. In the last month, how often have you felt | | | | | |
| confident about your ability to handle your | | | | | |
| personal problems? | | | | | |
| 5. In the last month, how often have you felt | | | | | |
| that things were going your way? | | | | | |
| 6. In the last month, how often have you found | | | | | |
| that you could not cope with all the things that | | | | | |
| you had to do? | | | | | |
| 7. In the last month, how often have you been | | | | | |
| able to control irritations in your life? | | | | | |
| 8. In the last month, how often have you felt | | | | | |
| that you were on top of things? | | | | | |
| 9. In the last month, how often have you been | | | | | |
| angered because of things that happened that | | | | | |
| were outside of you control? | | | | | |
| 10. In the last month, how often have you felt | | | | | |
| difficulties were piling up so high that you | | | | | |
| could not overcome them? | | | | | |

APPENDIX 8: The Perceived Stress Scale (PSS-10) - Thai Version

แบบวัดความรู้สึกเครียด (Thai Perceived Stress Scale-10)

<u>กำขึ้แจง</u> ต่อไปนี้เป็นกำถามเกี่ยวกับความรู้สึกและความกิดของกุณในรอบ 1 เคือนที่ผ่านมา โปรดทำ เครื่องหมาย X ลงในช่องที่ตรงกับที่กุณกิดหรือรู้สึกแบบนั้น

- 1 หมายถึง ไม่เลย
- 2 หมายถึง แทบจะไม่มี
- 3 หมายถึง มีบางครั้ง
- 4 หมายถึง ก่อนข้างบ่อย
- 5 หมายถึง บ่อยมาก

| คำถาม | ไม่เลย | แทบจะ | มี | ค่อนข้าง | บ่อย |
|-----------------------------------------------------------|--------|-------|----------|----------|------|
| | | ไม่มี | บางครั้ง | บ่อย | มาก |
| 1. ในรอบ 1 เดือนที่ผ่านมา บ่อยแค่ไหนที่คุณรู้สึกไม่สบาย | | | | | |
| ใจเพราะมีสิ่งที่เกิดขึ้นอย่างไม่กาคกิด? | | | | | |
| 2. ในรอบ 1 เดือนที่ผ่านมา บ่อยแค่ไหนที่คุณรู้สึกว่าคุณ | | | | | |
| ไม่สามารถควบคุมเรื่องสำคัญๆในชีวิตของคุณได้? | | | | | |
| 3. ในรอบ 1 เดือนที่ผ่านมา บ่อยแก่ไหนที่กุณรู้สึก | | | | | |
| กระสับกระส่ายและตึงเครียด? | | | | | |
| 4. ในรอบ 1 เดือนที่ผ่านมา บ่อยแก่ไหนที่กุณรู้สึกมั่นใจ | | | | | |
| ในความสามารถของตนเองที่จะรับมือกับปัญหาส่วนตัว | | | | | |
| ทั้งหลายได้? | | | | | |
| 5. ในรอบ 1 เดือนที่ผ่านมา บ่อยแก่ไหนที่กุณรู้สึกว่าสิ่ง | | | | | |
| ทั้งหลายเป็นไปในทิศทางที่คุณด้องการ? | | | | | |
| 6. ในรอบ 1 เดือนที่ผ่านมา บ่อยแก่ไหนที่กุณรู้สึกว่ากุณ | | | | | |
| ไม่สามารถจัดการกับสิ่งทั้งหลายทั้งที่เป็นสิ่งที่ล้วนเคยทำ | | | | | |
| ນາແຄ້ວ? | | | | | |
| 7. ในรอบ 1 เดือนที่ผ่านมา บ่อยแค่ไหนที่คุณรู้สึกว่า | | | | | |
| สามารถควบคุมสิ่งทั้งหลายที่มากวนใจได้? | | | | | |
| 8. ในรอบ 1 เดือนที่ผ่านมา บ่อยแก่ไหนที่กุณรู้สึกว่ากุณ | | | | | |
| ควบคุมสถานการณ์ต่างๆ ได้? | | | | | |
| 9. ในรอบ 1 เดือนที่ผ่านมา บ่อยแค่ไหนที่คุณโกรธอัน | | | | | |
| เนื่องมาจากสิ่งที่นอกเหนือการควบคุมของคุณ? | | | | | |
| 10. ในรอบ 1 เคือนที่ผ่านมา บ่อยแก่ไหนที่คุณรู้สึกว่า | | | | | |
| ปัญหาต่างๆ ทับถมมากขึ้นจนกุณไม่สามารถแก้ไขได้ | | | | | |
| หมด? | | | | | |

APPENDIX 9: The Centre for Epidemiology Studies-Depression Scale (CES-D)

The Centre for Epidemiology Studies- Depression Scale (CES-D)

Instruction Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

Rarely or none of the time (Less than 1 day)

Some or a little of the time (1-2 days)

Occasionally or a moderate amount of time (3-4 days)

Most or all of the time (5-7 days)

| Items | Rarely or none of the | Some or a little of the | Occasionally or a moderate | Most or all of the time |
|--------------------------------------------|--------------------------|----------------------------|-------------------------------|-------------------------|
| 1 I was bothered by things that usually | time | tinte | amount of time | |
| do not bother me. | | | | |
| 2. I did not feel like eating: my appetite | | | | |
| was poor. | | | | |
| 3. I felt that I could not shake off the | | | | |
| blues even with help from my family | | | | |
| or friends. | | | | |
| 4. I felt that I was just as good as other | | | | |
| people. | | | | |
| 5. I had trouble keeping my mind on | | | | |
| what I was doing. | | | | |
| 6. I felt depressed. | | | | |
| 7. I felt that everything I did was an | | | | |
| effort. | | | | |
| 8. I felt hopeful about the future. | | | | |
| 9. I thought my life had been a failure. | | | | |
| 10. I felt fearful. | | | | |
| 11. My sleep was restless. | | | | |
| 12. I was happy. | | | | |
| 13. I talked less than usual. | | | | |
| 14. I felt lonely. | | | | |
| 15. People were unfriendly. | | | | |
| 16. I enjoyed life. | | | | |
| 17. I had crying spells. | | | | |
| 18. I felt sad. | | | | |
| 19. I felt that people dislike me. | | | | |
| 20. I could not get "going" | | | | |

APPENDIX 10: The Centre for Epidemiology Studies-Depression Scale (CES-D) -

Thai Version

แบบทดสอบภาวะซึมเศร้า (CES-D Scale Thai-version)

<u>คำขึ้แจง</u> ต่อไปนี้เป็นกำถามเกี่ยวกับความรู้สึกและพฤติกรรมของคุณในรอบ 1 อาทิตย์ที่ผ่านมา โปรดทำ เกรื่องหมาย X ลงในช่องที่ตรงกับที่คุณกิดหรือมีพฤติกรรมแบบนั้น

| ไม่เลย | หมายถึง | น้อยกว่า 1 วันต่อสัปดาห์ |
|--------------|---------|--------------------------|
| นาน ๆ ครั้ง | หมายถึง | 1-2 วันต่อสัปคาห์ |
| ค่อนข้างบ่อย | หมายถึง | 3-4 วันต่อสัปคาห์ |
| บ่อยครั้ง | หมายถึง | 5-7 วันต่อสัปคาห์ |

| ข้อความ | ไม่เลย | นานๆ | ค่อนข้าง | บ่อยครั้ง |
|-------------------------------------------------------|--------|-------|----------|-----------|
| | | ครั้ง | บ่อย | |
| 1. ฉันรู้สึกหงุคหงิคง่าย | | | | |
| 2. ฉันรู้สึกเบื่ออาหาร | | | | |
| 3. ฉันรู้สึกว่าฉันไม่สามารถขจัดความหม่นหมองออกไป | | | | |
| แม้ว่าจะมีคนในครอบครัวหรือเพื่อนกอยช่วยเหลือ | | | | |
| 4. ฉันรู้สึกตนเองมีกวามดีทัดเทียมกนอื่นๆ | | | | |
| 5. ฉันรู้สึกดำบากในการตั้งสมาธิเพื่อทำสิ่งใดสิ่งหนึ่ง | | | | |
| 6. ฉันรู้สึกหดหู่ใจ | | | | |
| 7. ฉันรู้สึกว่าทุกๆสิ่งที่ฉันกระทำด้องฝืนใจทำ | | | | |
| 8. ฉันรู้สึกมีกวามหวังเกี่ยวกับอนากต | | | | |
| 9. ฉันกิดว่าชีวิตฉันมีแต่กวามถ้มเหลว | | | | |
| 10. ฉันรู้สึกหวาดกลัว | | | | |
| 11. ฉันนอนไม่ก่อยหลับ | | | | |
| 12. ฉันมีความสุข | | | | |
| 13. ฉันพูดคุยน้อยกว่าปรกติ | | | | |
| 14. ฉันรู้สึกอ้างว้าง เดียวคาย | | | | |
| 15. ฉันรู้สึกว่าผู้คนทั่ว ๆ ไปไม่มีความเป็นมิตร | | | | |
| 16. ฉันรู้สึกว่าชีวิตนี้สนุกสนาน | | | | |
| 17. ฉันมักร้องให้ | | | | |
| 18. ฉันรู้สึกไม่มีความสุข | | | | |
| 19. ฉันรู้สึกว่าผู้คนรอบข้างไม่ชอบฉัน | | | | |
| 20. ฉันรู้สึกท้อถอยในชีวิต | | | | |

APPENDIX 11: The Rosenberg Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (RSES)

Instruction Please record the appropriate answer for each item, depending on whether you strongly agree, agree, disagree, or strongly disagree with it.

- 1 = Strongly agree
- 2 = Agree
- 3 = Disagree
- 4 = Strongly disagree

| Items | Strongly agree | Agree | Disagree | Strongly disagree |
|------------------------------------------------------------|-------------------|-------|----------|----------------------|
| 1. On the whole, I am satisfied with myself. | | | | |
| 2. At times I think I am no good at all. | | | | |
| 3. I feel that I have a number of good qualities. | | | | |
| 4. I am able to do things as well as most other people. | | | | |
| 5. I feel I do not have much to be proud of. | | | | |
| 6. I certainly feel useless at times. | | | | |
| 7. I feel that I am a person of worth. | | | | |
| 8. I wish I could have more respect for myself. | | | | |
| 9. All in all, I am inclined to think that I am a failure. | | | | |
| 10. I take a positive attitude toward myself. | | | | |

แบบสอบถามความรู้สึกมีคุณค่าในตนเอง

Rosenberg Self-Esteem Scale (RSES) Thai version

<u>คำขึ้แจง</u> กำกถ่าวต่อไปนี้เป็นกำกถ่าวเกี่ยวกับกวามรู้สึกโดยทั่วไปของกุณต่อตนเอง โปรดทำเกรื่องหมายX ลงในช่องที่ตรงกับกวามรู้สึกของกุณ

- 1 = เห็นด้วยอย่างยิ่ง
- 2 = เห็นด้วย
- 3 = ไม่เห็นด้วย
- 4 = ไม่เห็นด้วยอย่างยิ่ง

| ข้อความ | เห็นด้วย | เห็น | ไม่เห็น | ไม่เห็นด้วย |
|----------------------------------------------------|-----------|------|---------|-------------|
| | อย่างยิ่ง | ด้วย | ด้วย | อย่างยิ่ง |
| 1. โดยทั่วไปฉันรู้สึกพอใจในคนเอง | | | | |
| 2. บางกรั้งฉันกิคว่าฉันไม่มีอะไรดีเลย | | | | |
| 3. ฉันรู้สึกว่าฉันมีข้อคีหถายอย่าง | | | | |
| 4. ฉันสามารถทำสิ่งค่างๆได้ดีพอๆกับกนส่วนใหญ่ | | | | |
| 5. ฉันรู้สึกว่าตัวฉันไม่ค่อยมีอะไรให้ภูมิใจมากนัก | | | | |
| 6. บางกรั้งฉันรู้สึกว่าตนเองช่างไร้ประโยชน์ | | | | |
| 7. ฉันรู้สึกว่าตนเองมีก่า อย่างน้อยก็พอๆกับกนอื่นๆ | | | | |
| 8. ฉันอยากจะนับถือตนเองใด้มากกว่านี้ | | | | |
| 9.ฉันก่อนข้างจะรู้สึกว่าฉันเป็นกนถ้มเหถวไปเสียทุก | | | | |
| อย่าง | | | | |
| 10. ฉันมีทัศนกดิที่ดีด่อดนเอง | | | | |

APPENDIX 13: The Mindful Attention Awareness Scale (MAAS)

The Mindful Attention Awareness Scale (MAAS)

Instructions Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

- 1 = Almost Always 2 = Very Frequently
- 3 = Somewhat Frequently
- 4 = Somewhat Infrequently
- 5 = Very Infrequently
- 6 =Almost Never

| Statements | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------------------------------------------------|---|---|---|---|---|---|
| 1. I could be experiencing some emotion and not be | | | | | | |
| conscious of it until sometime later. | | | | | | |
| 2. I break or spill things because of carelessness, not paying | | | | | | |
| attention, or thinking of something else. | | | | | | |
| 3. I find it difficult to stay focused on what's happening in | | | | | | |
| the present. | | | | | | |
| 4. I tend to walk quickly to get where I'm going without | | | | | | |
| paying attention to what I experience along the way. | | | | | | |
| 5. I tend not to notice feelings of physical tension or | | | | | | |
| discomfort until they really grab my attention. | | | | | | |
| 6. I forget a person's name almost as soon as I've been told | | | | | | |
| it for the first time. | | | | | | |
| 7. It seems I am "running on automatic," without much | | | | | | |
| awareness of what I'm doing. | | | | | | |
| 8. I rush through activities without being really attentive to | | | | | | |
| them. | | | | | | |
| 9. I get so focused on the goal I want to achieve that I lose | | | | | | |
| touch with what I'm doing right now to get there. | | | | | | |
| 10. I do jobs or tasks automatically, without being aware of | | | | | | |
| what I'm doing. | | | | | | |

| Statements | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------------------------------------------------------|---|---|---|---|---|---|
| 11. I find myself listening to someone with one ear, doing | | | | | | |
| something else at the same time. | | | | | | |
| 12. I drive places on "automatic pilot" and then wonder why | | | | | | |
| I went there. | | | | | | |
| 13. I find myself preoccupied with the future or the past. | | | | | | |
| 14. I find myself doing things without paying attention. | | | | | | |
| 15. I snack without being aware that I'm eating. | | | | | | |

APPENDIX 14: The Mindful Attention Awareness Scale (MAAS) - Thai Version

แบบวัดระดับสติ

Thai Mindful Attention Awareness Scale

<u>คำชี้แจง</u> ประโยกค่อไปนี้กล่าวถึงประสบการณ์ในชีวิตประจำวันของกุณ ใช้ถำคับคัวเลข 1 ถึง 6 ข้างล่าง กรุณาระบุว่ากุณมีประสบการณ์ดังกล่าวมากหรือน้อยเพียงใด โปรดเลือกกำดอบที่ย้อนสนองประสบการณ์ จริงๆของกุณ และไม่เลือกกำตอบที่กุณกิดว่าประสบการณ์ของกุณกวรจะเป็นเช่นนั้น โดยคัวเลขแต่ละดัว มี กวามหมายดังนี้

| 1 | หมายถึง | เกือบตลอคเวลา | 2 | หมายถึง | บ่อยมาก |
|---|---------|---------------|---|---------|----------------|
| 3 | หมายถึง | ค่อนข้างบ่อย | 4 | หมายถึง | ก่อนข้างน้อย |
| 5 | หมายถึง | ไม่บ่อยเลย | 6 | หมายถึง | เกือบไม่เคยเลย |

| ข้อความ | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------------------------------------------------------|---|---|---|---|---|---|
| 1. ฉันอาจเกิดประสบการณ์ทางด้านอารมณ์บางอย่าง และไม่ | | | | | | |
| รู้สึกตัวจนกระทั่งเวลาผ่านไปพอสมควรแล้ว | | | | | | |
| 2. ฉันทำของแตกหักหรือหกหล่นเพราะขาดความระมัดระวัง ไม่ | | | | | | |
| ดั้งอกตั้งใจหรือไม่ก็กิดถึงสิ่งอื่นอยู่ | | | | | | |
| 3. ฉันประสบความถำบากในการมุ่งจิตใจให้อยู่กับสิ่งที่เกิดขึ้นใน | | | | | | |
| ปัจจุบัน | | | | | | |
| 4. ฉันมักจะเดินเร็วๆเพื่อที่จะรีบไปให้ถึงจุดหมายโดยไม่มีกวาม | | | | | | |
| ใส่ใจในประสบการณ์ที่เกิดขึ้นระหว่างทาง | | | | | | |
| 5. ฉันมักจะไม่สังเกตความดึงเครียดหรืออึดอัดในร่างกาย | | | | | | |
| จนกระทั่งมันฉุดความสนใจอย่างจริงจัง | | | | | | |
| 6. ฉันถืมชื่อผู้คนเกือบจะทันทีที่ถูกแนะนำเป็นครั้งแรก | | | | | | |
| 7. มันดูเหมือนว่าฉันดำเนินไปตามกลไกอัตโนมัติโดยปราสจาก | | | | | | |
| กวามตระหนักถึงสิ่งที่ทำอยู่อย่างมากนัก | | | | | | |
| 8. ฉันทำสิ่งต่างๆอย่างรีบร้อนโดยปราศจากกวามตั้งใจในสิ่งที่ทำ | | | | | | |
| อย่างจริงจัง | | | | | | |
| 9. ฉันกอยฝักใฝ่ในเป้าหมายที่ต้องการให้สำเร็จมากจนกระทั่ง | | | | | | |
| สูญเสียกวามสัมพันธ์ค่อสิ่งที่ทำอยู่ในปัจจุบันเพื่อให้ถึงจุคหมาย | | | | | | |
| นั้น | | | | | | |
| 10. ฉันทำงานหรือทำตามกำสั่งไปโดยอัตโนมัติโดยขาดกวาม | | | | | | |
| ตระหนักถึงสิ่งที่ทำอยู่ | | | | | | |
| | | | | | | |

| ข้อความ | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------------------------------------------|---|---|---|---|---|---|
| 11. ฉันพบว่าฉันฟังกนอื่นพูดด้วยหูข้างเดียวและทำอย่างอื่นด้วย | | | | | | |
| ในเวลาเคียวกัน | | | | | | |
| 12. ฉันขับรถไปที่ค่างๆอย่างอัคโนมัติ หลังจากนั้นประหลาดใจว่า | | | | | | |
| ไปถึงที่นั่นทำไม | | | | | | |
| 13. ฉันพบว่าตัวเองมีใจหมกมุ่นอยู่กับอดีตหรืออนากต | | | | | | |
| 14. ฉันพบว่าตัวเองทำสิ่งต่างๆ โดยปราสจากกวามตั้งใจ | | | | | | |
| 15. ฉันกินของจุบจิบโคยไม่รู้สึกตัวว่ากินอยู่ | | | | | | |

APPENDIX 15: The Health and Counselling Service Utilisation Questionnaire

The Health and Counselling Service Utilisation Questionnaire

1. Have you used any health and/or counselling services provided by the University of Phayao since the last interview?

() Yes () No

2. If yes, please provide the following details

2.1 What health services? 2.2 What counseling services? 2.3 For what purpose did you use the health and/or counseling services? () Relationship difficulties () Study-related stress () Health problem affecting study () Financial problems) Others (Please give example)..... (2.4 How often have you used these services since the last interview? 3. Have you used any health and/or counseling services other than those provided by the University of Phayao since the last interview? () Yes) No (4. If yes, please provide the following details 4.1 What health services? 4.2 What counseling services? 4.3 For what purpose did you use the health and/or counseling services?) Relationship difficulties () Study-related stress () Health problem affecting study () Financial problems () Others (Please give example)..... (4.4 How often have you used these services since the last interview?

APPENDIX 16: Verified Translation of the Health and Counselling Service

Utilisation Questionnaire

แบบสอบถามการใช้บริการด้านสุขภาพและการให้คำปรึกษา

 ตั้งแต่การสัมภาษณ์ครั้งสุดท้าย ท่านได้ใช้บริการด้านสุขภาพและด้านการให้คำปรึกษาของศูนย์ให้ ้ กำปรึกษาสุขภาพจิต คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยาหรือไม่ ()ใช้ ()ไม่ใช้ 2. ถ้าท่านได้ใช้ กรุณากรอกรายละเอียดดังต่อไปนี้ 2.1 บริการสุขภาพที่ท่านใช้ 2.2 บริการด้านการให้คำปรึกษาที่ท่านใช้ 2.3 วัตถุประสงค์ของการใช้ () ปัญหาเรื่องสัมพันธภาพกับผู้อื่น () ปัญหาเรื่องสุขภาพที่ส่งผลต่อการเรียน () ปัญหาเรื่องความเครียดที่เกี่ยวข้องกับการเรียน () ปัญหาเรื่องเศรษฐกิจ () ปัญหาเรื่องอื่นๆ (กรุณาระบุ) 2.4 ความถึ่ของการใช้...... 3. ตั้งแต่การสัมภาษณ์ครั้งสุดท้าย ท่านได้ใช้บริการด้านสุขภาพและด้านการให้คำปรึกษาของ แหล่งบริการ อื่น นอกเหนือจากศูนย์ให้คำปรึกษาสุขภาพจิต คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา หรือไม่ ()ใช้ ()ไม่ใช้ 4. ถ้าท่านได้ใช้ กรุณากรอกรายละเอียดดังต่อไปนี้ 4.1 บริการสุขภาพที่ท่านใช้ 4.2 บริการด้านการให้คำปรึกษาที่ท่านใช้ 4.3 วัตถุประสงค์ของการใช้..... () ปัญหาเรื่องสัมพันธภาพกับผู้อื่น () ปัญหาเรื่องสุขภาพที่ส่งผลต่อการเรียน () ปัณหาเรื่องความเครียดที่เกี่ยวข้องกับการเรียน

- () ปัญหาเรื่องเศรษฐกิจ
- () ปัญหาเรื่องอื่นๆ

4.4 ความถึ่ของการใช้

APPENDIX 17: Permission for Use of the PSS-10 Thai Version



3 May 2012

Associate Professor Dr Nahathai Wongpakaran Department of Psychiatry Faculty of Medicine, Chiang Mai University 101 Intavaroros Road, Chiang Mai 50200 Thailand

Dear Associate Professor Dr Nahathai Wongpakaran,

Mrs Napaporn Aeamla-Or is a PhD student undertaking research under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial*. Part of the protocol for the proposed study includes the measurement of participants' stress before and following involvement in the intervention program. From our literature review we believe the Perceived Stress Scale (PSS-10) is a suitable measure and that you and your colleague are the authors of the Thai version of the instrument. This letter is to seek your agreement to use the instrument for the purpose outlined above. If you approve of this request I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

Yours sincerely,

Professor Michael/Hazelton Head of School Professor of Mental Health Nursing School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

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Approval:

I give permission for Mrs Napaporn Aeamla-Or, a PhD student under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia to use the Perceived Stress Scale (PSS-10) Thai version, as part of her research project: *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.*

Dr Nahathai Wongpakaran Associate Professor of Psychiatry

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| Callanhan NSW (| 2060 | Australia | CRICOSI | Provid | ei Number: 00109.1 | w | wwne | wcastle ed | luau |

APPENDIX 18: Permission for Use of the CES-D Thai Version



3 May 2012

Associate Professor Dr Wilai Kuptniratsaikul Department of Rehabilitation Medicine Faculty of Medicine Siriraj Hospital Mahidol University Bangkok 10700 Thailand

Dear Associate Professor Dr Wilai Kuptniratsaikul,

Mrs Napaporn Aeamla-Or is a PhD student undertaking research under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.* Part of the protocol for the proposed study includes the measurement of participants' depression before and following involvement in the intervention program. From our literature review we believe the Centre for Epidemiology Studies-Depression Scale (CES-D) is a suitable measure and that you and your colleague are the authors of the Thai version of the instrument. This letter is to seek your agreement to use the instrument for the purpose outlined above. If you approve of this request I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

Yours sincerely,

Professor Michael Hazelton Head of School Professor of Mental Health Nursing School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981

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Email: Michael.Hazelton@newcastle.edu.au

Approval:

I give permission for Mrs Napaporn Aeamla-Or, a PhD student under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia to use the Centre for Epidemiology Studies-Depression Scale (CES-D) Thai version, as part of her research project: *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.*

Associate Professor Dr Vilai Kuptniratsaikul

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| The University of | New | castle | enquiryc | entre@ | @newcastle.edu.au | T | +61 | 2 4921 5000 | |
| Callanhan NSW 3 | 8065 | Australia | CRICOS | Provide | er Number: 00109.1 | wi | ww.ne | weastle.edu.au | |

APPENDIX 19: Permission for Use of the RSES Thai Version



3 May 2012

Associate Professor Dr Nawanant Piyavhatkul Department of Psychiatry, Faculty of Medicine, Khon Kaen University Khon Kaen 40002 Thailand

Dear Associate Professor Dr Nawanant Piyavhatkul,

Mrs Napaporn Aeamla-Or is a PhD student undertaking research under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial*. Part of the protocol for the proposed study includes the measurement of participants' self-esteem before and following involvement in the intervention program. From our literature review we believe the Rosenberg Self-Esteem Scale (RSES) is a suitable measure and that you and your colleagues are the authors of the Thai version of the instrument. This letter is to seek your agreement to use the instrument for the purpose outlined above. If you approve of this request I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

Yours sincerely,

Professor Michael Hazelton Head of School Professor of Mental Health Nursing School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

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 www.newcastle.edu.au
 Vertice.edu.au

Approval:

I give permission for Mrs Napaporn Aeamla-Or, a PhD student under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia to use the Rosenberg Self-Esteem Scale (RSES) Thai version, as part of her research project: *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.*

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| The University of | New | astle | enquiryco | ntre | @newcastle.edu.au | T +6 | 1 2 4921 5000 |
| Callaohan NSW : | 2308 | Australia | CRICOS F | rovid | er Number: 00109J | WWW.O | ewcastle.edu.au |

APPENDIX 20: Permission for Use of the MAAS Thai Version

07/12/2012 THU 12:42 FAX

2001/002



School of Professional Psychology HPC-2/Pacific University 190 SE 8th Avenue Suite 260 Hillsboro OR 97123 503.352.7277

FAX COVER SHEET

| DATE: | 7/12/2012 | TIME: | |
|-------|----------------------------|--------------------------------|--|
| TO: | Professor Michael Hazelton | PHONE: | |
| | | FAX: +61_2 49216981 | |
| FROM: | Michael Christopher | PHONE: | |
| | | HPC-2 FAX: <u>503.352.7320</u> | |
| | | | |

Number of pages including cover sheet: _____2

Message: Dear Professor Hazelton:

The approval form to use the Thai MAAS is enclosed. Please let me know if you have any further questions.

·

Sincerely,

Michael Christopher

This message is intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone, and return the original message to us at the above address via the US Post Office.

Thank you.

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Approval

I give permission for Mrs Napaporn Aeamla-Or, a PhD student under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia to use the Mindful Attention Awareness Scale (MAAS) Thai version, as part of her research project: The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.

Signature Date 7/11/12 Associate Professor Michael S. Christopher

NEWCASTLE | CENTRAL COAST | PORT MACQUARIE | SINGAPORE The University of Newcastlo enquirycentre@newcastle.edu.au T +01 2 4921 6000 Callaghan NSW 2308 Australia CRICOS Provider Number: 00109J www.newcastle.edu.au APPENDIX 21: Teaching Manual for the MBSR Pilot Study

Mindfulness-Based Stress Reduction (MBSR) Program: Teaching Manual for Pilot Study

Class sequence summary

1. The first day: Afternoon class

- 1.1 Welcome and introduction (5 minutes)
- 1.2 Raisin exercise (15 minutes)
- 1.3 Abdominal breathing (15 minutes)
- 1.4 Body scan (45 minutes)
- 1.5 Standing yoga practice (30 minutes)
- 1.6 Sitting meditation with awareness of breathing (15 minutes)
- 1.7 Home practice assignment (5minutes)

2. The second day: Morning class

- 2.1 group discussion of home practice (20 minutes)
- 2.2 Sitting meditation (30 minutes)
- 2.3 Walking meditation (15 minutes)
- 2.4 Lying down yoga practice (30 minutes)
- 2.5 Closing ceremony (10 minutes)

Class details

1. The first day: Afternoon class

1.1 Welcome and introduction

a) Brief introduction of program

- In 1979, Jon Kabat-Zinn, the founder of the MBSR program and a student of Buddhist meditation practices, was working in a hospital and saw that many people, even though they were getting the best care available, were still suffering terriblyespecially when their condition could not be cured, for example terminal illness, chronic illness, illness-related anxiety and depression. He discovered that even with a short period (8 weeks) of mindfulness practices, people could make quite remarkable changes in themselves so that they suffered less.

- It is embedded within the context of Mind/Body and Integrative Medicine. (What we do with the body effects the mind, and vice versa)

- It is also a secular program teaching practices based on Buddhist psychology.
- It is designed to teach program participants how to integrate and apply mindfulness in their everyday lives and to the range of challenges arising from physical and psychological conditions as well as to life stresses.

- Evidence based on 30- year of research

b) Guidelines for participation

- *Confidentiality*: maintain confidentiality outside of class by not repeating what is said in class.

- *Self-care*: be your own authority in responding to invitations; during class if you notice that something does not feel right for you, ease off, please feel free to contact the instructor regarding concerns or questions.

- *No advice-giving*: speak from your own experience; demonstrate respect for each person's own journey.

1.2. Raisin-eating exercise

<u>Theme:</u>

The purpose of this practice is to demystify the concept of meditation. We let a raisin become the meditation teacher as well as the primary object of attention.

- Focus on direct sensory observation- what can be seen, felt, smelled, heard, and tasted. Simply to be with each moment as it is. (See Appendix 1: Mindfulness of Eating)

- The instructor is attentive to observations that become deductions, opinions and theories removed from immediate experience.

- Observing and then slowly eating one raisin with guidance from the instructor, stopping for observations from participants.

- Discussion of the experience

- Introduction to mindfulness meditation- mindfulness of eating

1.3. Abdominal breathing

<u>Theme:</u>

Your belly is literally the 'centre of gravity' of your body, far below the head and the turmoil of your thinking mind. Therefore, focusing on the breath at your belly is so useful to establish calmness and awareness, especially in the early stages of practice.

- Tie the moment-to moment awareness of eating exercise to experiencing the breath in the same way. Mindfully taste the breath in the same way that the group tasted the raisin.

- Focus on feeling of the abdomen rising and falling with the in-breath and the out-breath. Non-judgmentally observing one's own breathing from moment to moment; and bringing one's attention back to the breath and the present moment when it wanders. (See Appendix 2: Abdominal Breathing)

1.4. Body scan

<u>Theme:</u>

It is a deep investigation into the moment-to-moment experiences of the body. Simply become aware of physical sensations by exploring their felt senses. This is distinct from thinking about your body. There is no need to analyse or manipulate your body in anyway, just feel and acknowledge whatever sensations are present. (See Appendix3: Body Scan Practice)

- From mindfulness of breathing, move into guided body scan with participants continuing to lie on the floor or sitting in comfortable position.

- Group discussion of participants' experiences with the body scan.

1.5. Standing yoga

<u>Theme:</u>

Mindful yoga involves bringing awareness to your breath, movement, posture, thoughts, and emotions as you practice. It emphasises gentleness and non-judgment, curiosity, respect for current physical limits, and non-striving.

- Slowly going through the sequences of postures with guidance from the instructor. Emphasis on mindfulness and approaching one's current limits with gentleness. Participants are encouraged to avoid any postures they feel would cause injury or a setback, or to experiment with caution and care when in doubt. Particular attention is paid to participants with chronic problems with lower back, neck and chronic pain in general. (See Appendix 4: Standing Yoga Postures)

1.6. Sitting meditation with awareness of breathing (AOB)

<u>Theme:</u>

Sitting meditation is the heart of the formal meditation practice. Simply sit with and acknowledge whatever is with beginner's mind, without judgment and striving for a particular outcome. This can develop greater equanimity, a deeper capacity for letting be, and greater wisdom and compassion (with time and practice). Sitting meditation begins with a focus on the breath – being aware of the shifting quality of the breath as we inhale and exhale.

- Introduce sitting meditation with awareness of breathing as primary object of attention. (See Appendix 5: Sitting Meditation)

- Do a short guided meditation.

- Discuss this practice.

1.7 Home practice assignment

1. Complete 9 dots exercise (See Appendix 6: Nine Dots Exercise)

2. Mindfulness of routine activities: brushing teeth, washing dishes, showering, eating

.....

2. The second day: Morning class

2.1 group discussion of home practice

a) Eating one mindful meal

- Discuss eating one mindful meal and/or the experience of their relationship with food.

b) Nine Dots Exercise

- Give out the Nine Dots puzzle with the theme of expanding the field of awareness in problem solving.

- Using this exercise to illuminate how we are patterned creatures with habitual cognitive, emotional and behavioural ways of responding to challenges and difficulties. This is relevant in terms of how we immediately make an appraisal of a situation (often out of awareness), for example "This is interesting", "I cannot fix the problem", Ask for help?", "Avoidance? Our appraisals can shut down our openness, curiosity and foreclose other solutions. In this course we are going to perhaps be finding out that resolutions to the challenges of our life can come through "out of the box" thinking, responding with acceptance of things exactly as they are can lead to powerful change and the breakthrough moment of "Aha" when we see a/the solution. Practicing mindfulness, we begin to start seeing our automatic appraisals of situations/stress, and how they shape our experiences.

- Connect this theme to practicing the body scan. Noticing the appraisal (not suppressing, repressing it), bringing it to awareness, and then opening to the actual experience of the body scan, in all its moments.

- Extend the theme to coping with stress. Notice the reacting to stressful events. Note habitual behavioral patterns, thoughts and emotions associated with the

feeling of being stuck in these conditioned reactions, highlighting the conditioned patterns of escape from difficulty (i.e. fight and flight - stress reactivity/automaticity/mindlessness). Introduce the possibility of responding with awareness in these moments, rather than reacting automatically. It's not the stress but how you handle it which dictates its effects on the mind and the body (within limits). (See Appendix 7: Coping with Stress: Responding vs. Reacting)

2.2 Sitting meditation

- Sitting meditation with focus on breath, body sensations, and the whole body. (See Appendix 5: Sitting Meditation)

2.3 Walking meditation

<u>Theme:</u>

Walking meditation involves intentionally attending to the experience of walking itself. It is deliberate and serves a different purpose than simply getting point A to point B. It is sufficient to just be with each step, realising that you are just where you are.

- Introduce walking meditation (See Appendix 8: Walking Meditation)

2.4. Lying- down yoga

- Slowly going through the sequence of postures with guidance from the instructor. Emphasis on mindfulness and approaching one's current limits with gentleness. Participants are encouraged to avoid any postures they feel would cause injury or a setback, or to experiment with caution and care when in doubt. Particular attention is paid to participants with chronic problems with lower back, neck and chronic pain in general. (See Appendix 9: Lying- down Yoga Postures)

2.5 Closing ceremony

- Include holding hands, standing in circle, looking around, making eye contact, tuning into feeling whole and embedded in the context of the larger group, finding one word to describe the experience of the day or the moment.

APPENDIX 22: Practice Manual for the MBSR Pilot Study

เอกสารประกอบการฝึก โปรแกรมการลดความเครียดตามแนวการฝึกสติ

คำแนะนำสำหรับการเข้าร่วมโปรแกรม

- ขอให้ผู้เข้าร่วมโปรแกรมรักษาความลับโดยไม่น ข้อมูลและสิ่งใดๆที่เกิดขึ้นในการเข้าร่วมโปรแกรม ออกไปแพร่งพรายภายนอก
- ระหว่างการเข้าฝึกโปรแกรม หากท่านรู้สึกไม่สะดวกหรือไม่สบายใจประการใด ขอให้ท่านแจ้ง ผู้สอนทราบเพื่อช่วยเหลือหรือแก้ไข
- ผู้เข้าร่วมโปรแกรมทุกท่านมีอิสระเต็มที่ในการบอกเล่าประสบการณ์ของตน รวมทั้งเคารพใน ประสบการณ์ส่วนบุคคลของผู้เข้าร่วมท่านอื่นๆ โดยไม่ตัดสินหรือแสดงความคิดเห็น



The present time is a present of life เวลาปัจจุบันคือของขวัญสำหรับชีวิต เ

1

นภาพร เอี่ยมละออ

ทัศนคติพื้นฐานของการฝึกสติ

(Blacker, Meleo-Meyer, Kabat-Zinn, & Santorelli, 2009)

1. การยอมรับ (acceptance): การเปิดใจ ยินดี และต้อนรับต่อประสบการณ์ต่างๆ อย่างที่มันเป็น ณ ขณะนี้

2. การไม่ตัดสิน (non-judging): การพิจารณาประสบการณ์ของตนเองอย่างเป็นกลาง ตามที่มันเป็นจริง

3. การอดทน (patience): การตระหนักว่าสิ่งต่างๆมีเวลาของมัน ที่จะคลี่คลายตัวมันเองลง

 ความคิดอยากรู้อยากเห็น (beginner's mind): การมีความคิดที่ยินดีมองสิ่งต่างๆด้วยความอยากรู้อยาก เห็นและอย่างมีชีวิตชีวา ราวกับว่าเห็นสิ่งนั้นเป็นครั้งแรก (ทัศนคติเช่นนี้ช่วยให้เราเป็นอิสระจากความ คาดหวังต่างๆ บนประสบการณ์เดิมของเรา)

5. ความไว้วางใจ (trust): ความเชื่อมั่นในประสบการณ์ของตัวเอง และปล่อยให้ประสบการณ์ต่างๆเกิดขึ้น อย่างที่มันเป็น ในวิธีของมันเอง

 การไม่มุ่งมั่นเอาชนะ (non-striving): การยินดีที่จะปล่อยให้สิ่งต่างๆในขณะนี้ เป็นอย่างที่มันเป็น โดยไม่ พยายามแก้ไขหรือเปลี่ยนแปลงใดๆ ซึ่งทัศนคตินี้ช่วยให้เราหาวิธี 'ตอบสนอง' สิ่งที่เข้ามากระทบมากกว่าที่ จะ 'ต่อต้าน'

 การไม่ยึดติดหรือยึดมั่นถือมั่น (letting be/letting go): การนำตัวเองหลุดพ้นจากความคิดยึดติดในสิ่งที่น่า พึงใจและเป็นสุข และความคิดที่พยายามถอยห่างจากสิ่งที่ทำให้เกิดทุกข์

คำแนะนำสำหรับการฝึกสำรวจร่างกายอย่างมีสติ (Body Scan Practice)

- ในระหว่างการฝึก ท่านอาจเกิดความรู้สึกง่วง, ไม่มีสมาธิ, หรือความสนใจถูกดึงออกไปเรื่องอื่น จากความคิด อารมณ์หรือแม้แต่ความรู้สึกอื่นๆทางร่างกาย สิ่งเหล่านี้เป็นประสบการณ์ปกติที่ เกิดขึ้นได้ สิ่งที่ท่านต้องทำคือ เพียงรับรู้มันอย่างที่มันเป็น มันเป็นสิ่งที่เกิดและผ่านเข้ามา ณ ขณะนี้ มันเป็นของมันเช่นนั้น แล้วค่อยๆดึงความสนใจกลับมาที่การฝึกต่ออีกครั้ง
- การฝึกนี้ไม่ใช่การแข่งขันหรือเป็นทักษะที่ท่านต้องทำเพื่อให้ประสบความสำเร็จ, ให้บรรลุเป้าหมาย บางอย่าง,หรือให้เกิดความก้าวหน้า ขอให้ท่านเพียงเปิดโอกาสให้ตัวท่านได้รับประสบการณ์ใหม่

อย่างเต็มที่ ไม่มีการตัดสินว่า การฝึกนี้ท่านทำได้ดี, ล้มเหลว, ทำผิดหรือถูก นี่เป็นการฝึกเกี่ยวกับ การรับรู้ความรู้สึกอย่างที่ท่านรู้สึก ณ เวลานี้ จงปล่อยให้ตัวท่านเป็นอย่างที่ท่านเป็นเช่นนั้นอยู่แล้ว

ดังนั้นการฝึกนี้จึงมุ่งเน้น 'วิถีแห่งการอยู่' (way of being) ไม่ได้มุ่งเน้นที่ 'วิถีแห่งการทำ' (way of doing) โดยการอยู่ในที่นี้หมายถึงการอยู่ด้วยหรือ อยู่กับปัจจุบันขณะ อยู่กับความรู้สึกของร่างกาย ในขณะนี้อย่างที่ท่านรู้สึกเดี๋ยวนี้ ยอมรับมันอย่างที่มันเป็น โดยไม่กระทำสิ่งใดๆเพื่อเปลี่ยนแปลงมัน

" จงหายใจเข้า หายใจออก อยู่อย่างนี้แหละ อย่าใส่ใจกับอะไรทั้งนั้น ใครจะยืนเอากันขึ้นพ้าก็ช่าง อย่าไป เอาใจใส่ อยู่แต่กับลมหายใจเข้าออก ให้ความรู้สึกกำหนดอยู่กับลมหายใจ

ให้ทำอยู่อย่างนี้จนกระทั่งลมเข้าก็รู้จัก ลมออกก็รู้จัก ลมเข้าก็รู้จัก ลมออกก็รู้จัก ให้รู้จักอยู่อย่างนั้น จนจิต สงบ หมดความรำคาญ ไม่ฟุ้งซ่านไปไหนทั้งนั้น ให้มีแต่ลมออกลมเข้า ลมออกลมเข้าอยู่อย่างนั้น ให้มัน เป็นอยู่อย่างนี้ ยังไม่ต้องมีจุดหมายอะไรหรอก นี่แหละเบื้องแรกของการปฏิบัติ

เหมือนอย่างกับน้ำในขวดนี่แหละ เมื่อเรารินมันทีละน้อย มันก็จะหยดนิด...นิด...นิด พอเราเร่งรินให้เร็วขึ้น มันก็จะไหลดิดด่อเป็นสายน้ำเดียวกัน ไม่ขาดตอนเป็นหยดเหมือนเวลาที่เรารินทีละน้อยๆ สติของเราก็ เหมือนกัน ถ้าเราเร่งมันเข้า คือปฏิบัติให้สม่ำเสมอแล้ว มันก็จะติดต่อกันเป็นสายน้ำ ไม่เป็นน้ำหยด หมายความว่าไม่ว่าเราจะยืน จะเดิน จะนั่ง จะนอน ความรู้อันนี้มันไม่ขาดจากกัน มันจะไหลติดต่อกันเป็น สายน้ำ การปฏิบัติจิตนี่เป็นอย่างนั้น ให้เราพยายามทำให้เรื่อยเข้าไว้ แล้วมันจะเหมือนหยดแห่งน้ำ มันจะทำ ความห่างให้ถี่ ครั้นถี่เข้าๆมันก็ติดกันเป็นสายน้ำ"

พระโพธิญาณเถร (หลวงปู่ชา สุภทโท)

(ปฏิบัติกันเถิด: การบรรยายธรรมด้วยภาษาพื้นเมืองแก่กลุ่มพระภิกษุใหม่ในวันเข้าพรรษา ที่วัดหนองป่าพง เมื่อเดือนกรกฎาคม พ.ศ. 2521)

ลมหายใจเป็นสะพานเชื่อมระหว่างร่างกายและจิตใจ กายและจิตใจของเราปรองดองกัน ทำให้ร่างกายและ จิตใจของเราเป็นอันหนึ่งอันเดียวกัน ลมหายใจเป็นพันธมิตรกับทั้งจิตใจและร่างกาย และลมหายใจอย่าง เดียวเท่านั้นที่จะเป็นสื่อนำสิ่งทั้งสองเข้าหากันได้ ฉายแสงสว่างให้สิ่งทั้งสองและนำสิ่งทั้งสองไปสู่สันติและ ความสงบ

ติช นัท ฮันห์

(ปาฏิหาริย์แห่งการตื่นอยู่เสมอ) พระประชา ปสนนธมโม : แปล

การฝึกปฏิบัติที่มอบหมายประจำสัปดาห์

1. ทำแบบฝึกหัด 'Nine dots exercise'

 ผิกปฏิบัติการทำกิจวัตรประจำวันอย่างมีสติ เช่น แปรงฟัน ล้างจาน อาบน้ำ รับประทานอาหาร เป็นต้น



APPENDIX 23: Information Sheet for the RCT Study



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Information Statement for the Research Project (Phase1): The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students : A Randomised Controlled Trial

Document Version 2; dated 13/3/13

You are invited to participate in the research project identified above which is being undertaken by academic staff and a research higher degree student from the University of Newcastle, Australia. Napaporn Aeamla-Or is conducting the research as part of her Doctor of Philosophy under the supervision of Professor Michael Hazelton and Dr. Rachel Rossiter from the School of Nursing and Midwifery.

Why is the research being done?

The purpose of the research is to investigate whether participation in the mindfulnessbased stress reduction (MBSR) program can reduce stress and depression, improve selfesteem and mindfulness in nursing students. Previous studies have shown that MBSR may yield positive outcomes on these areas. The researchers want to know whether MBSR can result in improved outcomes for nursing students in Thailand.

Who can participate in the research?

We are seeking nursing students to participate in this research. If you are aged 18-20 and studying in the first and the second years of the nursing program of the School of Nursing, the University of Phayao, you are eligible to be involved in this study. Approval to conduct the research has been given by the University of Newcastle Human Research Ethics Committee. The President of the University of Phayao has agreed to allow nursing students of the University of Phayao to participate in the study.

What choice do you have?

Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way and will not affect your status in the undergraduate nursing program at the University of Phayao. Your decision regarding participation will also not affect any current or future relationships with research higher degree candidate (Napaporn Aeamla-Or) who holds an academic staff position at the University of Phayao. This study is being conducted under the auspices of Napaporn's position as a student researcher with the University of Newcastle. If you decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you.

What would you be asked to do?

If you agree to participate, you will be randomly assigned into one of two study groups. If you are assigned to Group 1, you will be further randomly assigned to one of three groups to receive the 8-week MBSR intervention program. The weekly sessions will include a series of activities designed to develop your mindfulness skills and practice. If you are randomly assigned to Group 2, you will not participate in the MBSR program, but will be able to access counselling services from the Mental Health Counselling Centre, School of Nursing, the University of Phayao, should you feel it necessary to do

so. However, you will be offered the opportunity of being involved in workshops addressing stress management techniques once the research is completed.

In addition, participants from Group 1 who attend every session of Phase1 will be invited to participate in a focus group interview after completion of the MBSR program. Participants in both groups will be asked to complete a baseline demographic questionnaire addressing gender, age, year of study in the nursing program, educational background, religion, family status, financial status, experiences of mindfulness practice. Participants will also be asked to complete a series of questionnaires assessing stress, depression, self- esteem, mindfulness and use of health and counselling services at the beginning of the project, 8-weeks, 16-weeks and 32-weeks from the beginning of the project. In addition, participants will be asked to give permission for the researcher to access information on your subject grades in the undergraduate nursing program, for the purpose of investigating the impact of stress and stress management on academic performance.

How much time will it take?

If you are assigned to Group 1, you will participate in the MBSR program which comprises of 8 weekly 2.5 hour group sessions and one full day (8 hours) intensive mindfulness, held in the 6th week of the program. The duration of the focus group interview will be approximately 1-1.5 hours. For both Groups 1and 2, completing the questionnaires at the commencement of the study and at 8-weeks, 16-weeks and 32-weeks should take about 60 minutes on each occasion.

What are the risks and benefits of participating?

Participants in the MBSR program are likely to benefit by learning to use mindfulness techniques to manage stress. It is possible that during participation in the MBSR program, some participants may experience bodily discomfort including pain, numbress, cramping in the legs, and drowsiness. The participants will be advised to reposition themselves if they are feeling uncomfortable. The research candidate will be able to provide assistance as required to ease discomfort.

For Participants in both groups, it is also possible that some completed questionnaires may indicate that you are in need of further support, assessment or referral. If this does happen, the research candidate will advise or refer you to access counselling services from the Mental Health Counselling Centre, School of Nursing, the University of Phayao.

How will your privacy be protected?

Please be assured that information provided to the research candidate will at all times be treated as private and confidential. Each participant in the study will be given a coded identification number and this, rather than personal name will be used on all questionnaire forms and other information sheets used in the study. The names and coded identification numbers of all participants will be kept separately from the questionnaire forms and information sheets, and only the research candidate and the supervisors will have access to these. It will not be possible to identify those who provide information to the researchers during any stage of the research. Collected data will be securely stored for a minimum period of five years.

How will the information collected be used?

The information collected for the research will be reported in the research candidate's PhD dissertation, and related papers in scientific journals and presentations at professional conferences. Information reported will be in summary form and it will not be possible to identify participants in any reports, publications or presentations arising from the project. Participants will be offered a summary of the study results by the research candidate after completion of the research.

What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate in the research. If there is anything you do not understand, or you have any questions, please don't hesitate to contact the researcher (Napaporn Aeamla-Or). If you would like to participate, please complete the attached consent form and place it into the sealed box marked 'Nursing Mindfulness Study' in the main office of the School of Nursing, University of Phayao. You will then be contacted by Napaporn Aeamla-Or and given further information about the group you have been placed in, and when the project will commence.

Further information

If you would like further information please contact:

| Professor Michael Hazelton | Mrs Napaporn Aeamla-Or |
|---------------------------------|----------------------------------|
| School of Nursing and Midwifery | Research Higher Degree Candidate |
| The University of Newcastle | School of Nursing and Midwifery |
| University Drive, Callaghan | The University of Newcastle |
| NSW, 2308 Australia | University Drive, Callaghan |

Tel: +61 2 49216770 Fax: +61 2 49216981 Email:

Michael.Hazelton@newcastle.edu.au

NSW, 2308 Australia Tel: 054-451373 Email: Napaporn.Aeamla-Or@uon.edu.au

Thank you for considering this invitation. Professor Michael Hazelton

Project supervisor

Complaints about this research

Mrs Napaporn Aeamla-Or Research Higher Degree Candidate

This project has been approved by the University of Newcastle Human Research Ethics Committee (H-2012-0347), and the University of Phayao Human Research Ethics Committee (HE56-02-04-0008).

Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or the Vice President, Research and Quality Assurance of the University of Phayao, telephone 054- 466666, who will bring it to the attention of the Human Research Ethics Officer, The University of Newcastle. Should you wish to do so you may also contact the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone: +61 249216333, email: Human-Ethics@newcastle.edu.au.

Research team members

- 1. Professor Michael Hazelton, the University of Newcastle
- 2. Dr Rachel Rossiter, the University of Newcastle
- 3. Mrs Napaporn Aeamla-Or, the University of Newcastle
- 4. Dr Pimpimon Wongchaiya, Boromrajonani College of Nursing, Phayao, Thailand
- 5. Assistant Professor Torpong Kreetachat

School of Energy and Environment, the University of Phayao, Thailand

6. Ms Saengduean Phromkeawngam

School of Nursing, the University of Phayao, Thailand

APPENDIX 24: Verified Translation of Information Sheet for the RCT Study



ศาสตรางารย์ไมเคิล ฮัสเซลทัน ดีอกเตอร์เรเซล รอสซิเทอร์ นางนภาพร เอี่ยมละออ ภาควิชาการพยาบาลและผดุงครรภ์ มหาวิทยาลัยนิวคาสเซิล ถนนยูนิเวอร์ซิดี้, คาลลางฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์ : +61 2 49216770 แฟกซ์ : +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au Napaporn.Aeamla-Or@uon.edu.au

เอกสารข้อมูลเกี่ยวกับโครงการวิจัย เรื่อง ผลของโปรแกรมการลดความเครียดตามแนวการฝึกสติ ในนักทึกษาพยาบาลไทย (ระยะที่ 1) เอกสารครั้งที่ 2 : 13 มีนาคม 2556

โครงการวิจัชนี้คำเนินการโดย นางนภาพร เอี่ยมละออ นักศึกษาปริญญาเอก สาขาพยาบาลศาสตร์ มหาวิทยาลัย นิวคาสเซิล ประเทศออกเตรเลีย ภายใต้การดูแลของศาสตราจารย์ไมเคิล ฮัสเซลทัน และดี่อกเตอร์เรเซล รอสซิเทอร์ โครงการวิจัยนี้ได้ผ่านการพิจารณาจากคณะกรรมการจริยธรรมของมหาวิทยาลัยนิวคาสเซิล และมหาวิทยาลัยพะเยา รวมทั้ง ได้รับอนุญาตจากอธิการบดีมหาวิทยาลัยพะเยาในการดำเนินการวิจัยแล้ว

ทำไมถึงต้องทำการวิจัยเรื่องนี้ ?

โครงการวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาผลของโปรแกรมการลดความเกรียดตามแนวการฝึกสติ ที่มีต่อ การลดความเกรียดและความซึมเศร้า รวมทั้งส่งเสริมความรู้สึกมีคุณก่าในตนเอง และระดับสติของนักศึกษาพยาบาลไทย เนื่องงากผลการศึกษาที่ผ่านมาให้ผลปรากฏในทางที่เป็นบวก ผู้วิจัยจึงค้องการศึกษาว่า การศึกษาในลักษณะที่คล้ายกันจะ ให้ผลที่คล้ายคลึงกันหรือไม่ เมื่อทำการวิจัยในนักศึกษาพยาบาลไทย

ผู้ใดบ้างที่จะสามารถเข้าร่วมในโครงการวิจัยนี้ ?

ผู้ที่สามารถเข้าร่วมโครงการวิจัยนี้ ได้แก่ นักศึกษาพยาบาลที่มีอายุระหว่าง 18 ถึง 20 ปี และกำลังศึกษาอยู่ชั้นปีที 1 และ 2 ของคณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา

ท่านสามารถทำอะไรได้บ้างเมื่อตัดสินใจเข้าร่วมโครงการวิจัยแล้ว ?

ท่านมีอิสระอย่างเต็มที่ในการตัดสินใจเข้าร่วมโครงการวิจัยนี้โดยการเซ็นชื่อให้ความยินขอมเข้าร่วมการวิจัย ทั้งนี้ การตัดสินใจตอบรับ หรือปฏิเสธการเข้าร่วมวิจัยของท่าน จะไม่มีผลกระทบใดๆ ทั้งสถานภาพทางการศึกษาในคณะ พยาบาลศาสตร์ของท่าน รวมถึงความสัมพันธ์ในปัจจุบันหรือในอนาคตกับผู้วิจัย (นางนภาพร. เอี่ยมละออ) ซึ่งคำรง ดำแหน่งอาจารย์ของมหาวิทยาลัยพะเยา ผู้วิจัยคำเนินการวิจัยนี้ในฐานะของนักสึกษาปริญญาเอกของมหาวิทยาลัยนิวกาส เซิล และเมื่อท่านเข้าร่วมโครงการแล้ว ท่านสามารถที่จะถอนตัวจากการวิจัยได้ตลอดเวลาโดยไม่จำเป็นต้องให้เหตุผลใดๆ

ท่านจะต้องทำอะไรบ้างเมื่อเข้าร่วมโครงการวิจัย?

หากท่านตกลงเข้าร่วมโครงการวิจัยแล้ว ท่านจะได้รับมอบหมายโดยวิธีการสุ่มให้เข้าร่วมกับกลุ่มใดกลุ่มหนึ่งใน สองกลุ่มของโครงการ หากท่านเข้าร่วมในกลุ่มที่หนึ่ง ท่านจะได้รับการสุ่มให้เข้าร่วมกับกลุ่มใดกลุ่มหนึ่งในสามกลุ่มย่อย เพื่อเข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ ณ คณะพยาบาลสาสตร์ มหาวิทยาลัยพะเยา ซึ่งโปรแกรมนี้จะ ประกอบด้วยกิจกรรมให้ความรู้และฝึกทักษะเพื่อพัฒนาสติ หากท่านได้รับการสุ่มให้เข้าอยู่ในกลุ่มที่สอง ท่านจะไม่ได้เข้า ร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ น คณะพยาบาลสาสตร์ มหาวิทยาลัยพะเยา ซึ่งโปรแกรมนี้จะ ประกอบด้วยกิจกรรมให้ความรู้และฝึกทักษะเพื่อพัฒนาสติ หากท่านได้รับการสุ่มให้เข้าอยู่ในกลุ่มที่สอง ท่านจะไม่ได้เข้า ร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ ท่านเพียงแต่งอรับบริการสุขภาพจิตจากสูนย์ให้กำปรึกษาสุขภาพจิต ของคณะพยาบาลสาสตร์ มหาวิทยาลัยพะเยาตามที่ท่านต้องการ อย่างไรก็ตามท่านจะได้รับเชิญให้เข้าร่วมการฝึกปฏิบัติ เทคนิคการผ่อนคลายความเครียดเมื่อโครงการวิจัยสิ้นสุดลง

นอกจากนี้ ผู้เข้าร่วมโครงการวิจัยในกลุ่มที่หนึ่งที่เข้าร่วมโปรแกรมการถดความเครียดตามแนวการฝึกสติครบทุก ครั้งทั้งโปรแกรม จะถูกเชิญให้เข้าร่วมการสัมภาษณ์แบบกลุ่มหลังสิ้นสุคโปรแกรมการถดความเครียดตามแนวการฝึกสติ ผู้วิจัยทั้งสองกลุ่มจะถูกขอให้ทำแบบสอบถามและแบบวัดคังค่อไปนี้

 แบบบันทึกข้อมูลส่วนบุคคลเกี่ยวกับเพส อายุ ชั้นปีที่กำลังสึกษา สาสนา ผลการเรียนที่ผ่านมา สถานภาพ ของครอบครัว สถานภาพทางเสรษฐกิจ และประสบการณ์เกี่ยวกับการฝึกสติ แบบบันทึกนี้จะทำเมื่อเริ่มต้นโครงการวิจัย

 แบบวัคความรู้สึกเครียด แบบทดสอบภาวะซึมเศร้า แบบสอบถามความรู้สึกมีคุณค่าในตนเอง แบบวัคระดับ สติ และแบบสอบถามการใช้บริการด้านสุขภาพและด้านการให้กำปรึกษา ซึ่งจะทำเมื่อเริ่มต้นโครงการวิจัยและทำซ้ำใน สัปดาห์ที่ 8 สัปดาห์ที่ 16 และสัปดาห์ที่ 32 ของการวิจัย นอกจากนี้ผู้เข้าร่วมโครงการวิจัยจะถูกขออนุญาตเพื่อให้ผู้วิจัย เข้าถึงข้อมูลเกี่ยวกับผลการเรียนในรายวิชาต่าง ๆ ของผู้เข้าร่วมวิจัยในหลักสูตรพยาบาลศาสตรบัณฑิต หลังสิ้นสุดการวิจัย

ท่านต้องใช้เวลาในการเข้าร่วมโครงการวิจัยเท่าใด ?

หากท่านถูกจัดให้อยู่ในกลุ่มที่หนึ่ง ท่านจะต้องเข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ จำนวน 8 ครั้ง ซึ่งใช้เวลาครั้งละ 2 ชั่วโมง 30 นาที ทุกสัปดาห์ เป็นเวลา 8 สัปดาห์ และกลุ่มการฝึกสติแบบเข้ม เต็มวันเป็นเวลา 8 ชั่วโมง ซึ่งจะทำในสัปดาห์ที่ 6 ของโปรแกรม ส่วนการสัมภาษณ์แบบกลุ่มหลังจากสิ้นสุดโปรแกรม จะใช้เวลาประมาณ 1 ชั่วโมง ถึง 1 ชั่วโมง 30 นาที นอกจากนี้ผู้เข้าร่วมโครงการวิจัยทั้งสองกลุ่มจะต้องตอบแบบสอบถามและแบบวัดทั้งหมดใน แต่ละครั้งใช้เวลาประมาณ 60 นาที

การเข้าร่วมโครงการวิจัยนี้มีผลประโยชน์และข้อเสียที่อาจเกิดขึ้นต่อผู้เข้าร่วมโครงการอย่างไรบ้าง ?

ผู้เข้าร่วมวิจัยในกลุ่มที่หนึ่งจะได้เรียนรู้วิธีการฝึกสติเพื่อจัดการกับความเครียดที่เกิดขึ้นในชีวิตประจำวัน อย่างไร ก็ตามในระหว่างการฝึกกิจกรรมในโปรแกรมการลดความเครียดตามแนวการฝึกสติ ผู้เข้าร่วมวิจัยบางท่านอาจเกิดความไม่ สุขสบายด้านร่างกาย เช่น อาการปวด เหน็บชา ตะกริว และ ง่วงนอน ผู้เข้าร่วมวิจัยจะได้รับกำแนะนำให้เปลี่ยนอิริยาบล จนกว่าจะรู้สึกดีขึ้น หากข้อมูลใบแบบสอบฉามและแบบวัดของผู้เข้าร่วมวิจัยท่านใดที่บ่งชี้ว่าท่านควรได้รับการประเมิน เพื่อช่วยเหลือเพิ่มเดิม ท่านจะได้รับกำแนะนำหรือส่งค่อให้เข้ารับบริการสุจภาพจิดจากสูนย์ให้กำปรึกษาสุขภาพจิตของ คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา สำหรับผู้เข้าร่วมวิจัยในกลุ่มที่สองไม่มีความเสี่ยงใด

ความลับและความเป็นส่วนตัวของท่านจะได้การปกป้องอย่างไร?

โปรดไว้วางใจว่าข้อมูลที่ท่านได้ให้แก่ผู้วิจัยจะถูกเก็บไว้อย่างมิดชิด ข้อมูลของท่านจะถูกระบุโดย รหัสซึ่งชื่อของท่านจะไม่ปรากฏบนข้อมูลทั้งหมดของท่านที่ผู้วิจัยได้สำรวจเก็บไว้ นอกจากนี้รหัสและชื่อของท่านจะ ถูกแขกเก็บไว้ต่างหากจากข้อมูลของท่าน จะไม่มีโอกาสเป็นไปได้เลยที่จะทราบว่าข้อมูลเป็นของผู้ใด มีเพียงผู้วิจัยและ อาจารย์ที่ปรึกษาเท่านั้นที่สามารถใช้ข้อมูลนี้ได้ ข้อมูลที่ได้ทั้งหมดจะถูกเก็บอย่างปลอดภัยเป็นเวลาอย่างน้อย 5 ปี

ข้อมูลที่ได้จะถูกนำไปใช้อย่างไร ?

ข้อมูลที่ได้งากการวิจัยจะถูกนำเสนอในคุษฎีนิพนธ์ของผู้วิจัย รวมถึงการตีพิมพ์ในวารสารทางวิชาการและการ นำเสนอในการประชุมวิชาการ โดยในการนำเสนอทุกรูปแบบ ข้อมูลวิจัยจะถูกรายงานเป็นภาพรวมของผลการวิจัยจากกลุ่ม ผู้เข้าร่วมวิจัยทั้งหมดเท่านั้น

ท่านต้องทำอะไรบ้างก่อนตัดสินใจเข้าร่วมโครงการวิจัย ?

ท่านควรอ่านเอกสารนี้จนจบและทำความเข้าใจก่อนที่จะเซ็นยินขอมเข้าร่วมโครงการ หากมีสิ่งใคที่ท่านไม่เข้าใจ กรุณาสอบถามผู้วิจัยให้เข้าใจชัคเจน เมื่อท่านตกลงยินขอมเข้าร่วมโครงการ กรุณาลงลายมือชื่อในหนังสือแสดงความ ยินขอมการเข้าร่วมโครงการวิจัย แล้วคืนเอกสารดังกล่าวลงกล่องปิดผนึกที่เขียนหน้ากล่องว่า "การศึกษาการฝึกสติใน นักศึกษาพยาบาล" ซึ่งจะตั้งไว้ในสำนักงานเลขาบุการของคณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา หลังจากนั้นท่านจะ ใค้รับข้อมูลการเข้าร่วมวิจัยเพิ่มเดิมจากผู้วิจัย หากท่านต้องการทราบข้อมูลอื่นๆ กรุณาดิดต่อ

- ศาสตราจารย์ไมเกิล ฮัสเซลทัน
 - ภาควิชาการพยาบาลและผดุงครรภ์ มหาวิทยาลัยนิวคาสเซิล ถนนยูนิเวอร์ชิดี้, คาลลางฮาน รัฐนิวเชาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์ : +61 2 49216770 แฟกซ์ : +61 2 49216981 Email : Michael.Hazelton@newcastle.edu.au
- นางนภาพร เอี่ยมละออ

คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา อำเภอเมือง จังหวัดพะเยา 56000 โทรศัพท์ : 054 – 451373 Email : Napaporn.Aeamla-Or@uon.edu.au

3

ขอขอบคุณท่านเป็นอย่างมากที่กรุณาพิจารณาเข้าร่วมวิจัย

ศาสตราจารย์ไมเคิล ฮัสเซลทัน อาจารย์ที่ปรึกษา นางนภาพร เอี่ยมละออ ผู้วิจัย

โครงการวิจัยนี้ได้ผ่านการพิจารณาของคณะกรรมการจริยธรรมของมหาวิทยาลัยนิวคาสเซิล เลขที่ H-2012-0347

หากท่านมีข้อสงสัยใดเกี่ยวกับสิทธิการเข้าร่วมการวิจัยของท่าน หรือต้องการท้วงดิงสิ่งใดก็ตามเกี่ยวกับการวิจัย กรุณาติดต่อผู้วิจัยหรือรองอธิการบดีฝ่ายวิจัยและประกันกุณภาพการศึกษาของมหาวิทยาลัยพะเยา โทรศัพท์ 054 – 466666 เพื่อนำประเด็นท้วงดิงเสนอต่อคณะกรรมการจริยธรรมในการวิจัยของมหาวิทยาลัยนิวกาสเซิลต่อไป นอกจากนี้ท่านยัง สามารถติดต่อโดยตรงไปยังคณะกรรมการจริยธรรมในการวิจัย มหาวิทยาลัยนิวกาสเซิล ถนนยูนิเวอร์ชิตี้ คาลลาจฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์ +61 249216333, Email : Human-Ethics@newcastle.edu.au

4

ทีมผู้ช่วยวิจัย (ประเทศไทย)

- ศาสตราจารย์ไมเกิล ฮัสเซลทัน มหาวิทยาลัยนิวกาสเซิล ออสเตรเลีย
- คือกเตอร์เรเชล รอสซิเทอร์ มหาวิทยาลัยนิวกาสเซิล ออสเตรเลีย
- นางนภาพร เอี่ยมละออ มหาวิทยาลัยนิวกาสเซิล ออสเตรเลีย
- คร.พิมพิมล วงศ์ใชยยา
 วิทยาลัยพยาบาลบรมราชชนนี พะเยา
- ผู้ช่วยศาสตราจารย์ คร.ต่อพงศ์ กรีธาชาติ
 วิทยาลัยพลังงานและสิ่งแวคล้อม มหาวิทยาลัยพะเยา
- อาจารย์แสงเดือน พรมแก้วงาม คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา

APPENDIX 25: Consent Form for the RCT Study



Professor Michael Hazelton Dr. Rachel Rossiter Mrs. Napaporn Aeamla-Or School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan, NSW, 2308 Australia Tel: +61 2 49216770 Fax: +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au

Consent Form for the Research Project (Phase1): The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Selfesteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial

Document Version 2; dated 13/3/13

I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained. I understand I will be randomised into one of two study group, and I can withdraw from the project at any time and do not have to give any reason for withdrawing.

If allocated to Group 1:

I consent to: - Participate in the MBSR program comprising of 8 weekly 2.5 hour group sessions and one full- day (8 hours) intensive mindfulness.

- Participate in 1-1.5- hour focus interview after completion of the study.

For participants in both Group 1 and Group 2:

I consent to: - Complete a baseline demographic questionnaire addressing gender, age, year of study in the nursing program, educational background, religion, family status, financial status, and experiences of mindfulness practice.

- Complete a series of questionnaires assessing stress, depression, selfesteem, mindfulness and use of health and counselling services at the beginning of the project, and at 8-weeks, 16-weeks and 32-weeks after the beginning of the project.

- Give my student's ID number and permission for accessing information on my subject grades in the undergraduate nursing program being used in the research project.

- Give my email address for the purpose of future contact to enable to receive feedback

I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

Print Name: _____

Date: _____

Signature: _____

Email address: _____

APPENDIX 26: Verified Translation of Consent Form for the RCT Study



ศาสตรางารข์ไมเคิล ฮัสเซลทัน ด็อกเตอร์เรเซล รอสซิเทอร์ นางนภาพร เอี่ยมละออ ภาควิชาการพยาบาลและผดุงครรภ์ มหาวิทยาลัยนิวคาสเซิล ถนนยูนิเวอร์ซิดี้, คาลลางฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์ : +61 2 49216770 แฟกซ์ : +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au Napapom.Aeamla-Or@uon.edu.au

หนังสือแสดงกวามยินยอมการเข้าร่วมโกรงการวิจัย เรื่อง ผลของโปรแกรมการลดความเครียดตามแนวการฝึกสติในนักทึกษาพยาบาลไทย (ระยะที่ 1) เอกสารกรั้งที่ 2 : 13 มีนาคม 2556

ง้าพเจ้ามีความยินขอมที่จะเข้าร่วมโครงการวิจัยครั้งนี้ โดยข้าพเจ้าได้รับทราบข้อมูลและเข้าใจเกี่ยวกับการวิจัย ตามที่ได้อ่านในเอกสารข้อมูลโครงการวิจัยนี้แล้ว รวมทั้งรับทราบว่าข้าพเจ้าจะได้รับการสุ่มให้เข้าร่วมกับกลุ่มใดกลุ่มหนึ่ง ในสองกลุ่มของโครงการวิจัย และข้าพเจ้าสามารถถอนด้วจากโครงการวิจัยได้ทุกเมื่อที่ข้าพเจ้าต้องการโดยไม่จำเป็นต้องให้ เหตุผลใดๆ

หากได้รับการสุ่มให้เข้าร่วมโครงการวิจัยกลุ่มที่หนึ่ง :

ข้าพเจ้ามีความยินยอมที่จะเข้าร่วม

 โปรแกรมการถดความเครียดตามแนวการฝึกสติแบบกลุ่มจำนวน 8 ครั้ง ซึ่งใช้เวลาครั้งละ 2 ชั่วโมง 30 นาที ทุกสัปดาห์ เป็นเวลา 8 สัปดาห์ และกลุ่มการฝึกสติแบบเข้มเต็มวันเป็นเวลา 8 ชั่วโมง

สำหรับผู้เข้าร่วมโครงการวิจัยทั้งกลุ่มที่หนึ่งและกลุ่มที่สอง :

ข้าพเจ้ามีความยินยอมที่จะ

 ให้ข้อมูลส่วนบุคคลเกี่ยวกับเพศ อายุ ชั้นปีที่กำลังศึกษา ศาสนา ผลการเรียนที่ผ่านมา สถานภาพของครอบครัว สถานภาพทางเศรษฐกิจ และประสบการณ์เกี่ยวกับการฝึกสดิ

– ทำแบบสอบถามเกี่ยวกับความเครียด ความซึมเสร้า ความรู้สึกมีคุณค่าในตนเอง ระดับสติ และการใช้บริการด้าน สุขาภาพและด้านการให้กำปรึกษา ซึ่งจะทำเมื่อเริ่มต้น โครงการวิจัย และทำซ้ำในสัปดาห์ที่ 8 สัปดาห์ที่ 16 และสัปดาห์ที่ 32 ของการวิจัย

 ให้รหัสประจำตัวนักศึกษาของข้าพเจ้าและอนุญาตให้เข้าถึงข้อมูลเกี่ยวกับผลการเรียนของข้าพเจ้าในรายวิชาต่าง ๆ ในหลักสูตรพยาบาลศาสตรบัณฑิต เพื่อใช้ในการวิจัยนี้

ให้ที่อยู่อีเมล์ของข้าพเจ้าเพื่อการติดต่อ

ข้าพเจ้ารับทราบว่าข้อมูลส่วนตัวของข้าพเจ้าจะถูกเก็บเป็นความลับ และข้าพเจ้าสามารถที่จะสอบถามข้อสงสัย ต่างๆ ที่ข้าพเจ้าอาจมีได้จากผู้วิจัยจนกว่าจะพอใจ

| ผู้ขึ้นขอม |
|----------------------|
| ลายเซ็น |
| รหัสประจำตัวนักศึกษา |
| ที่อขู่อีเมล์ |
| วันที่ |

APPENDIX 27: Advertisement Flyer



Are you a first or second year nursing student and interested in participating in a stress reduction program?

Details

- We are conducting a research study to investigate whether the mindfulnessbased stress reduction (MBSR) program can reduce stress and depression, improve self-esteem and mindfulness in nursing students.
- Participants will be randomly assigned to an 8-week program to learn how to use mindfulness techniques to manage stress in daily life.

This project has been approved by Human Research Ethics Committee of The University of Newcastle (Approval Number H-2012-0347), and that of The University of Phayao (Approval Number HE56-02-04-0008).

Contact

If you would like to participate in this study please contact:

Saengduean Phromkeawngam Tel: +66 89 7009190 aomaom9@gmail.com Napaporn Aeamla-Or Tel: +66 54 451373 <u>Napaporn.Aeamla-Or@uon.edu.au</u>

APPENDIX 28: Verified Translation of Advertisement Flyer



คุณเป็นนิสิตพยาบาลชั้นปีที่ 1 และ 2

ที่สนใจเข้าร่วมโปรแกรมการลดความเครียดหรือไม่?

รายละเอียดโครงการวิจัย

- โครงการวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาถึงผลของโปรแกรมการลดความเครียดตาม แนวการฝึกสติ ว่า สามารถลดความเครียด และความซึมเศร้า รวมทั้งเพิ่มความรู้สึกมี คุณค่าในตนเองและระดับสติในนักศึกษาพยาบาลไทยได้หรือไม่
- ผู้เข้าร่วมโครงการวิจัยจะได้รับการสุ่มให้เข้าร่วมโปรแกรมเป็นเวลา 8 สัปดาห์ เพื่อ เรียนรู้การใช้เทคนิคการฝึกสติเพื่อจัดการกับความเครียดในชีวิตประจำวัน

โครงการวิจัยนี้ได้ผ่านการพิจารณาจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ของ มหาวิทยาลัยนิวคาสเซิล ออสเตรเลีย (เลขที่ H – 2012 – 3047) และของมหาวิทยาลัยพะเยา (เลขที่ HE 56 – 02 – 04 – 0008)

หากท่านสนใจที่จะเข้าร่วมโครงการวิจัยนี้ กรุณาติดต่อ

| แสงเดือน พรมแก้วงาม | หรือ | นภาพร เอี่ยมละออ |
|---------------------------|------|---------------------------------------|
| โทรศัพท์ : +66 89 7009190 | | โทรศัพท์ : +66 54 451373 |
| Email : aomaom9@gmail.com | | Email : Napaporn.Aeamla-Or@uon.edu.au |

Letter of Verification of Translation

My name is Rattana Yawiloeng, a lecturer in English as a Foreign Language (EFL) at the School of Arts, University of Phayao, Thailand. I am currently undertaking a Doctor of Philosophy (Education) program at The University of New South Wales, NSW, Australia. I have held a Bachelor of Education in English and a Master of Arts in English, and have worked as a university EFL lecturer in Thailand for 7 years.

I have reviewed the following translated documents from English to Thai language: 1) Information Sheet; 2) Consent Form; 3) Demographic Questionnaire; 4) The Use of Health and Counselling Services Questionnaire; 5) The Questions for Focus Group Interview. I verify that all Thai documents are translated accurately and appropriately.

> (Rattana Yawiloeng) Unit 2/ 34-36 Borrodale Road, Kingsford, NSW 2032 Email: preaw20002@hotmail.com

Rm

Letter of Verification of Translation

My name is Rattana Yawiloeng, a lecturer in English as a Foreign Language (EFL) at the School of Arts, The University of Phayao, Thailand. I am currently undertaking a Doctor of Philosophy (Education) program at The University of New South Wales, NSW, Australia. I have held a Bachelor of Education in English and a Master of Arts in English, and have worked as a university EFL lecturer in Thailand for seven years.

I have reviewed the following translated documents from English to Thai language:

1) Information Statement (Phase1)-Version 2

2) Consent Form (Phase1)-Version 2

3) Information Statement (Phase2)

4) Consent Form (Phase2)

5) The Health and Counselling Service Utilisation Questionnaire-Version 2

I verify that all Thai documents are translated accurately and appropriately.

(Ms. Rattana Yawiloeng) Unit 2/34-36 Borrodale Road, Kingsford, NSW 2032 Mobile: +61 (0)433 313 299 Email: preaw20002@hotmail.com

FACULTY OF HEALTH AND MEDICINE



19th August, 2014

Dr Rattana Yawiloeng School of Liberal Arts The University of Phayao Muang, Phayao 56000 Thailand

Dear Dr Rattana Yawiloeng

Re: Invitation to undertake a bilingual Thai-English verification of qualitative research data

Mrs Napaporn Aeamla-Or is a nurse lecturer at School of Nursing, the University of Phayao. She is currently undertaking PhD studies under my supervision at the University of Newcastle, Australia. Her PhD research has been investigating the effects of Mindfulnessbased Stress Reduction (MBSR) on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students using embedded mixed methods as the research design. A qualitative descriptive research component is embedded in the study to gain an in-depth understanding of the experience of participation in the MBSR program. Qualitative focus group data was collected in Thai language and translated into English in order to be analysed and presented in English.

For the purpose of establishing the trustworthiness of the qualitative data it is important that the English language translation be independently verified by a person who is bi-lingual in both Thai and English. Given your qualifications and background, I would be most grateful if you would consider providing this verification of the Thai and English transcripts for Napaporn's research.

If you agree to this request, I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia Tel: +61 2 49215695 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

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FACULTY OF HEALTH AND MEDICINE



Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

Yours sincerely

Professor Michael Hazelton Principal supervisor

Approval:

I agree to be a bilingual Thai-English translation verifier for the PhD research of Mrs Napaporn Aeamla-Or, a PhD candidate under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia.

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 The University of Newcastle
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APPENDIX 30: Agreement with Academic Mentorship in Thailand



3 May 2012

Dr Pimpimon Wongchaiya Boromrajonani College of Nursing, Phayao 312 Moo 17, Tambon Tom Muang, Phayao 56000 Thailand Pimpimon

Dear Dr Pimpimon Wongchaiya,

Mrs Napaporn Aeamla-Or is a nurse lecturer at School of Nursing, the University of Phayao. She is currently undertaking PhD studies under my supervision at the University of Newcastle, Australia. The title of her proposed research is The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial. It is proposed that participants in the study will be recruited from nursing students in the first and second years of the nursing program at the School of Nursing, the University of Phayao.

Mrs Napaporn Aeamla-Or would be greatly assisted in the conduct of her research, if she has an academic mentor who can provide regular on-the-ground support and mentorship during data collection in Thailand. Given your qualifications and background, I would be most grateful if you would consider providing academic mentorship during the time in which Napaporn is collecting data in Thailand.

If you agree to this request, I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

Yours sincerely,

Professor Michael Hazelton Head of School School of Nursing and Midwifery The University of Newcastle

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 The University of Newcastle
 enquirycentre@newcastle.eduau
 T
 +61
 2.4921
 5000

 Calaghan NSW 2308 Australia
 CRICOS Provider Number: 00109J
 www.newcastle.eduau

Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

Approval:

I agree to be an academic mentor for Mrs Napaporn Aeamla-Or, a PhD candidate under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, the University of Newcastle, Australia to provide her regular on-the-ground support and mentorship for her project: the Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial in Thailand.

Deputy Director for Academic Affairs of Boromrajonani College of Nursing, Phayao

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APPENDIX 31: Preliminarily Qualitative Findings



Preliminary qualitative findings

2. Participation experiences



ผลการวิจัยเชิงกุณภาพเบื้องต้น



2. ประสบการณ์จากการเข้าร่วมโปรแกรม



APPENDIX 32: Information Sheet for the Qualitative Study



Professor Michael Hazelton Dr. Rachel Rossiter Mrs. Napaporn Aeamla-Or School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia Tel: +61 2 49216770 Fax: +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au

Information Statement for the Research Project (phase 2): The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial

Document Version 1; dated 13/3/13

You are invited to participate in phase 2 of the research project identified above which is being undertaken by academic staff and a research higher degree student from the University of Newcastle, Australia. Napaporn Aeamla-Or is conducting the research as part of her Doctor of Philosophy under the supervision of Professor Michael Hazelton and Dr. Rachel Rossiter from the School of Nursing and Midwifery.

Why is the research being done?

The purpose of phase 2 of the research is to explore participants' experiences of participation in the mindfulness-based stress reduction (MBSR) program. This research is being done in order to gain a better understanding of what it was like to take part in the MBSR program, and to gather more information about the effects of MBSR program.

Who can participate in the research?

We are seeking people who attend each session of the MBSR program, and are willing to talk about their experiences of this participation. If you are a participant from Group 1 of Phase 1 of the research, and have attended the whole MBSR program, you are eligible to be involved in this phase of the study. Approval to conduct the research has been given by the University of Newcastle Human Research Ethics Committee. The President of the University of Phayao has agreed to allow nursing students of the University of Phayao to participate in the study.

What choice do you have?

Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you in any way and will not affect your status in the undergraduate nursing program at the University of Phayao. Your decision regarding participation will also not affect any current or future relationships with research higher degree student (Napaporn Aeamla-Or) who holds an academic staff position at the University of Phayao. This study is being conducted under the auspices of Napaporn's position as a student researcher with the University of Newcastle. If you decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you.

What would you be asked to do?

If you agree to participate, you will be invited to attend a focus group interview in the week following your completion of the MBSR program. You will participate in a focus group interview comprising up to 10 participants and lasting 1-1.5 hours, at the meeting room of School of Nursing, the University of Phayao. The focus group will be facilitated by the research higher degree candidate, and the focus questions will address the experiences of participation in MBSR program. The session will be audio-taped, and written field notes of the proceedings will be taken by a research assistant who will sit in on the focus group as a non-participant observer. Data from the recordings and field note will be transcribed. Summary of the information provided during the focus group will be returned to you to review.

What are the risks and benefits of participating?

We cannot promise you any benefit from participating in this research. However, you will have a chance to tell the researcher about what it was like to take part in the MBSR program. A better understanding of the experience of participating in the MBSR program will enable us to improve the MBSR program to suit Thai nursing students. There are no anticipated risks associated with participating.

How will your privacy be protected?

Please be assured that information provided to the research candidate will at all times be treated as private and confidential. You will not be personally identified in any of the documents used in or published from the study. Each participant in the study will be given a coded identification number in the transcription of interviews. During the period of study, all information will be kept in a locked filling cabinet and will only be accessed by the research candidate and the supervisors. Collected data will be securely stored for a minimum period of five years in a locked cabinet located in the School of Nursing and Midwifery, the University of Newcastle.

How will the information collected be used?

The information collected for the research will be reported in the research candidate's PhD dissertation, and related papers in scientific journals and presentations at professional conferences. Information reported will be in summary form and it will not be possible to identify participants in any reports, publications or presentations arising from the project. Participants will be offered a summary of the study results by the research candidate after completion of the research.

What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate in the research. If there is anything you do not understand, or you have any questions, please don't hesitate to contact the researcher (Napaporn Aeamla-Or). If you would like to participate, please complete the attached consent form and place it into the sealed box marked 'Nursing Mindfulness Study-Phase2' in the main office of the School of Nursing, University of Phayao. You will then be contacted by Napaporn Aeamla-Or to arrange a time for the focus group interview.

Further information

If you would like further information please contact:

| Professor Michael Hazelton | Mrs Napaporn Aeamla-Or |
|-----------------------------------|----------------------------------|
| School of Nursing and Midwifery | Research Higher Degree Candidate |
| The University of Newcastle | School of Nursing and Midwifery |
| University Drive, Callaghan | The University of Newcastle |
| NSW, 2308 Australia | University Drive, Callaghan |
| Tel: +61 2 49216770 | NSW, 2308 Australia |
| Fax: +61 2 49216981 | Tel: 054-451373 |
| Email: | Email: |
| Michael.Hazelton@newcastle.edu.au | Napaporn.Aeamla-Or@uon.edu.au |

Thank you for considering this invitation.

| Professor Michael Hazelton | Mrs Napaporn Aeamla-Or |
|----------------------------|----------------------------------|
| Project supervisor | Research Higher Degree Candidate |

Complaints about this research

This project has been approved by the University of Newcastle Human Research Ethics Committee (H- 2012-0347) and the University of Phayao Human Research Ethics Committee (HE56-02-04-0008).
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or the Vice President, Research and Quality Assurance of the University of Phayao, telephone 054- 466666, who will bring it to the attention of the Human Research Ethics Officer, The University of Newcastle. Should you wish to do so you may also contact the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone: +61 249216333, email: <u>Human-Ethics@newcastle.edu.au</u>.

APPENDIX 33: Verified Translation of Information Sheet for the Qualitative Study



ศาสตราจารย์ไมเคิล ฮัสเซลทัน ด็อกเตอร์เรเชล รอสซิเทอร์ นางนภาพร เอี่ยมละออ ภาควิชาการพยาบาลและผดุงครรภ์ มหาวิทยาลัยนิวคาสเซิล ถนนยูนิเวอร์ซิตี้, คาลลาจฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์: +61 2 49216770 แฟกซ์: +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au Napaporn.Aeamla-Or@uon.edu.au

เอกสารข้อมูลเกี่ยวกับโครงการวิจัยเรื่อง ผลของโปรแกรมการลดความเครียดตามแนวการฝึกสติ ในนักศึกษาพยาบาลไทย(ระยะที่2)

เอกสารครั้งที่ 1; 13 มีนาคม 2556

โครงการวิจัยนี้คำเนินการโดยนางนภาพร เอี่ยมละออ นักสึกษาปริญญาเอก สาขาพยาบาลสาสตร์ มหาวิทยาลัยนิวกาสเซิล ประเทศออสเตรเลีย ภายใต้การดูแลของสาสตราจารย์ไมเคิล ฮัสเซลทัน และค็อกเตอร์ เรเชล รอสซิเทอร์ โครงการวิจัยนี้ได้ผ่านการพิจารณาจากคณะกรรมการจริยธรรมของมหาวิทยาลัยนิวกาสเซิล และมหาวิทยาลัยพะเยา รวมทั้งได้รับอนุญาตจากอธิการบดีมหาวิทยาลัยพะเยาในการคำเนินการวิจัยแล้ว

ทำไมถึงต้องทำการวิจัยเรื่องนี้?

โครงการวิจัยระยะที่2นี้มีวัตถุประสงค์เพื่อศึกษาประสบการณ์ของผู้เข้าร่วมโปรแกรมการถด ความเครียดตามแนวการฝึกสติ เพื่อจะได้ทราบข้อมูลที่ช่วยให้เกิดความเข้าใจเพิ่มขึ้นเกี่ยวกับผลของโปรแกรม การถดความเครียดตามแนวการฝึกสติในนักศึกษาพยาบาถไทย

ผู้ใดบ้างที่จะสามารถเข้าร่วมในโครงการวิจัยนี้?

ผู้ที่สามารถเข้าร่วมในโครงการวิจัยนี้ได้แก่ ผู้เข้าร่วมวิจัยกลุ่มที่ 1 ของโครงการวิจัยเรื่อง ผลของ โปรแกรมการลดความเครียดตามแนวการฝึกสติในนักศึกษาพยาบาลไทย ระยะที่ 1 ซึ่งเข้าร่วมกิจกรรมคลอด โปรแกรมครบทุกครั้ง และยินดีที่จะให้ข้อมูลเกี่ยวกับประสบการณ์ในการเข้าร่วมโปรแกรม

ท่านสามารถทำอะไรได้บ้างเมื่อตัดสินใจเข้าร่วมโครงการวิจัยแล้ว?

ท่านมีอิสระอย่างเต็มที่ในการดัดสินใจเข้าร่วมโครงการวิจัยนี้โดยการเซ็นชื่อให้ความยินขอมเข้าร่วม การวิจัย ทั้งนี้การดัดสินใจตอบรับหรือปฏิเสธการเข้าร่วมวิจัยของท่านจะไม่มีผลกระทบใด ๆ ทั้งสถานภาพทาง การศึกษาในคณะพยาบาลศาสตร์ของท่าน รวมถึงความสัมพันธ์ในปัจจุบันหรือในอนาคตกับผู้วิจัย (นางนภาพร เอี่ยมละออ) ซึ่งคำรงคำแหน่งอาจารย์ของมหาวิทยาลัยพะเยา ผู้วิจัยคำเนินการวิจัยนี้ในฐานะของนักศึกษา ปริญญาเอกของมหาวิทยาลัยนิวกาสเซิล และเมื่อท่านเข้าร่วมโครงการแล้ว ท่านสามารถที่จะถอนตัวจากการ วิจัยได้ตลอดเวลาโดยไม่จำเป็นค้องให้เหตุผลใด ๆ

ท่านจะต้องทำอะไรบ้างเมื่อเข้าร่วมโครงการวิจัย?

หากท่านดกลงเข้าร่วมโครงการวิจัยแล้ว ท่านจะได้เข้าร่วมการสัมภาษณ์แบบกลุ่มในสัปดาห์ต่อมาหลัง สิ้นสุดโปรแกรมการลดความเครียดตามแนวการฝึกสติ การสัมภาษณ์แบบกลุ่มจะประกอบด้วยสมาชิกกลุ่มไม่ เกิน 10 คน ดำเนินการสัมภาษณ์โดยผู้วิจัย (นางนภาพร เอี่ยมละออ) ด้วยกำถามที่เกี่ยวกับประสบการณ์การเข้า ร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติของท่าน จะใช้เวลาประมาณ 1 ชั่วโมง ถึง 1 ชั่วโมง 30 นาที ณ ห้องประชุมของคณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา การดำเนินการสัมภาษณ์จะถูกบันทึกด้วย เครื่องบันทึกเสียงและการจดบันทึกโดยผู้ช่วยผู้วิจัยในฐานะผู้สังเกตการณ์กลุ่ม ข้อมูลที่บันทึกจะถูกออดความ เรียบเรียงเป็นตัวอักษร หลังจากนั้นข้อมูลโดยสรุปจะถูกส่งกลับให้ท่านตรวจสอบความถูกต้องอีกครั้ง

การเข้าร่วมโครงการวิจัยนี้มีประโยชน์และข้อเสียที่อาจเกิดขึ้นต่อผู้เข้าร่วมโครงการอย่างไรบ้าง?

ผู้วิจัยไม่สามารถยืนยันประโยชน์ที่ท่านจะได้รับจากการเข้าร่วมสัมภาษณ์แบบกลุ่มครั้งนี้ อย่างไรก็ตาม ท่านมีโอกาสที่จะได้บอกประสบการณ์ที่เกิดขึ้นจากการเข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ ซึ่งจะเป็นประโยชน์ในการปรับปรุงโปรแกรมดังกล่าวให้เหมาะสมกับนักศึกษาพยาบาลไทยต่อไป การเข้าร่วม การสัมภาษณ์แบบกลุ่มครั้งนี้ไม่มีความเสี่ยงใด

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ความลับและความเป็นส่วนตัวของท่านจะได้รับการปกป้องอย่างไร?

โปรคไว้วางใจว่าข้อมูลที่ท่านได้ให้แก่ผู้วิจัยจะถูกเก็บไว้อย่างมิดชิดและเป็นความลับ ข้อมูลของท่านใน บทถอดการสัมภาษณ์กลุ่มจะถูกระบุโดยรหัส ซึ่งชื่อของท่านจะไม่ปรากฏบนข้อมูลทั้งหมดของท่านทั้งที่ผู้วิจัย ได้บันทึกไว้และในการนำเสนอข้อมูลทุกรูปแบบ นอกจากนี้ข้อมูลของท่านทั้งในรูปการบันทึกเสียงและเอกสาร ทั้งหมดจะถูกเก็บไว้ในดู้เก็บเอกสารที่ปลอดภัยของสำนักวิชาพยาบาลและผดุงครรภ์ มหาวิทยาลัยนิวคาสเซิล เป็นเวลาอย่างน้อย5 ปี มีเพียงผู้วิจัยและอาจารย์ที่ปรึกษาเท่านั้นที่สามารถใช้ข้อมูลนี้ได้

ข้อมูลที่ได้จะถูกนำไปใช้อย่างไร?

ข้อมูลที่ได้จากการวิจัยจะถูกนำเสนอในคุษฎีนิพนธ์ของผู้วิจัย รวมถึงการดีพิมพ์ในวารสารทางวิชาการ และการนำเสนอในการประชุมวิชาการ โดยในการนำเสนอทุกรูปแบบ ข้อมูลวิจัยจะถูกรายงานเป็นภาพรวมของ ผลการวิจัยจากกลุ่มผู้เข้าร่วมวิจัยทั้งหมดเท่านั้น ซึ่งผู้เข้าร่วมวิจัยจะได้รับผลสรุปการวิจัยจากผู้วิจัยหลังสิ้นสุด โครงการวิจัย

ท่านต้องทำอะไรบ้างก่อนตัดสินใจเข้าร่วมโครงการวิจัย?

ท่านควรอ่านเอกสารนี้จนจบและทำความเข้าใจก่อนที่จะเซ็นยินยอมเข้าร่วมโครงการ หากมีสิ่งใดที่ ท่านไม่เข้าใจ กรุณาสอบถามผู้วิจัยให้เข้าใจชัดเจน เมื่อท่านตกลงยินยอมเข้าร่วมโครงการ กรุณาลงลายมือชื่อใน หนังสือแสดงความยินยอมการเข้าร่วมโครงการวิจัย แล้วคืนเอกสารดังกล่าวลงกล่องปิดผนึกที่เขียนหน้ากล่อง ว่า "การศึกษาการฝึกสติในนักศึกษาพยาบาล ระยะที่2" ซึ่งจะตั้งไว้ในสำนักงานเลขานุการของคณะพยาบาล ศาสตร์ มหาวิทยาลัยพะเยา หลังจากนั้นท่านจะได้รับข้อมูลการเข้าร่วมวิจัยเพิ่มเติมจากผู้วิจัย หากท่านด้องการ ทราบข้อมูลอื่น ๆ กรุณาติดต่อ

1. ศาสตราจารย์ใมเคิล ฮัสเซลทัน

ภาควิชาการพยาบาลและผคุงครรภ์ มหาวิทยาลัยนิวกาสเซิล ถนนยูนิเวอร์ซิตี้, กาลลาจฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์: +61 2 49216770 แฟกซ์: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

2. นางนภาพร เอี่ยมละออ

คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา อำเภอเมือง จังหวัดพะเยา 56000 โทรศัพท์: 054-451373

Email: Napaporn.Aeamla-Or@uon.edu.au

ขอขอบคุณท่านเป็นอย่างมากที่กรุณาพิจารณาการเข้าร่วมวิจัย

ศาสตราจารย์ไมเคิล ฮัสเซลทัน อาจารย์ที่ปรึกษา นางนภาพร เอี่ยมละออ ผู้วิจัย

โครงการวิจัยนี้ได้ผ่านการพิจารณาของคณะกรรมการจริยธรรมของมหาวิทยาลัยนิวกาสเซิล เลขที่ H-2012-0347

หากท่านมีข้อสงสัยใดเกี่ยวข้องกับสิทธิการเข้าร่วมการวิจัยของท่าน หรือต้องการท้วงดิงสิ่งใดก็ตาม เกี่ยวกับการวิจัย กรุณาติดต่อผู้วิจัยหรือรองอธิการบดีฝ่ายวิจัยและประกันกุณภาพของมหาวิทยาลัยพะเยา โทรศัพท์ 054-4666666 เพื่อนำประเด็นท้วงดิงเสนอต่อคณะกรรมการจริยธรรมในการวิจัยของมหาวิทยาลัยนิว คาสเซิลต่อไป นอกจากนี้ท่านยังสามารถติดต่อโดยตรงไปยังคณะกรรมการจริยธรรมในการวิจัย มหาวิทยาลัย นิวคาสเซิล ถนนยูนิเวอร์ซิดี้ คาลลาจฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์+61 249216333, Email: <u>Human-Ethics@newcastle.edu.au</u>.

ทีมผู้วิจัย

- กาสตราจารย์ไมเคิล ฮัสเซลทัน มหาวิทยาลัยนิวคาสเซิล ออสเตรเลีย
- คือกเตอร์เรเชล รอสซิเทอร์ มหาวิทยาลัยนิวคาสเซิล ออสเตรเลีย
- 3. นางนภาพร เอี่ยมลออ
- มหาวิทยาลัยนิวคาสเซิล ออสเตรเลีย
- คร.พิมพิมถ วงศ์ไชยยา
 วิทยาลัยพยาบาลบรมราชชนนี พะเยา
- ผู้ช่วยศาสตราจารย์คร.ค่อพงศ์ กรีธาชาติ
 วิทยาถัยพลังงานและสิ่งแวคล้อม มหาวิทยาถัยพะเยา
- อ.แสงเคือน พรมแก้วงาม คณะพยาบาลศาสตร์ มหาวิทยาลัยพะเยา

4

APPENDIX 34: Consent Form for the Qualitative Study



Professor Michael Hazelton Dr. Rachel Rossiter Mrs. Napaporn Aeamla-Or School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia Tel: +61 2 49216770 Fax: +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au

Consent Form for the Research Project (Phase 2): The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial

Document Version 1; dated 13/3/13

I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement (Phase 2), a copy of which I have retained. I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

I consent to:

- Participate in a focus group interview for 1-1.5 hours;

- Give my email address for the purpose of future contact to enable to receive feedback.

I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

| Print Name: | Date: |
|-------------|-------|
| Signature: | |

Email address:

APPENDIX 35: Verified Translation of Consent Form for the Qualitative Study



ศาสตรางารย์ไมเกิล ฮัสเซลกัน ดีอกเตอร์เรเซล รอสซิเทอร์ นางนภาพร เอี่ยมละออ ภาควิชาการพยาบาลและผดุงกรรภ์ มหาวิทยาลัยนิวกาสเซิล ถนนยูนิเวอร์ชิตี้, กาลลางฮาน รัฐนิวเซาท์เวลส์, 2308 ประเทศออสเตรเลีย โทรศัพท์ : +61 2 49216770 แฟกซ์ : +61 2 49216981 Michael.Hazelton@newcastle.edu.au Rachel.Rossiter@newcastle.edu.au Napapom.Aeamla-Or@uon.edu.au

หนังสือแสดงความยินยอมการเข้าร่วมโครงการวิจัยเรื่อง ผถของโปรแกรมการถดความเครียดตามแนวการฝึกชติในนักศึกษาพยาบาลไทย (ระยะที่ 2) เอกสารครั้งที่ 1 : 13 มีนาคม 2556

ข้าพเจ้ามีความยินขอมที่จะเข้าร่วมโครงการวิจัยครั้งนี้ โดยข้าพเจ้าได้รับทราบข้อมูลและเข้าใจเกี่ยวกับการวิจัยตามที่ได้อ่าน ในเอกสารข้อมูลโครงการวิจัยระยะที่ 2 แล้ว รวมทั้งรับทราบว่าข้าพเจ้าสามารถถอนตัวจากโครงการวิจัยได้ทุกเมื่อที่ข้าพเจ้า ด้องการโดยไม่จำเป็นต้องให้เหตุผลใดๆ

ข้าพเจ้ามีความยินยอมที่จะ

- เข้าร่วมการสัมภาษณ์แบบกลุ่มเป็นเวลา 1 ชั่วโมงถึง 1 ชั่วโมง 30 นาที
- ให้ที่อยู่อีเมล์ของข้าพเจ้าเพื่อการติดต่อ

ข้าพเจ้ารับทราบว่า ข้อมูลส่วนตัวของข้าพเจ้าจะถูกเก็บเป็นความลับ และข้าพเจ้าสามารถที่จะสอบถามข้อสงสัยค่างๆ ที่ ข้าพเจ้าอาจมิได้จากผู้วิจัยจนกว่าจะพอใจ

> ผู้ขึ้นขอม..... ลาขเซ็น..... ที่อขู่อีเมล์.....

> วันที่.....

APPENDIX 36: Focus Group Interview Schedule

Focus Group Interview Schedule

1. Opening question: Please tell us your name and the study year.

2. Introductory question: Could you please tell me what you expected from the mindfulness- based stress reduction (MBSR) before you commenced the program?3. Transition question: Can you please tell me what it was like for you participating in the MBSR program?

4. Key questions:

- What did you like most about the MBSR program? Why?
- What did you like least or dislike about the MBSR program? Why?

- Did mindfulness practice play a role in your daily life prior to commencing the MBSR program? How?

- Since completing the MBSR program, has mindfulness practice become a part of your daily life? How?

5. Ending question: Is there anything else you would like to tell us about your experience of participating in the MBSR program?

APPENDIX 37: Verified Translation of Focus Group Interview Schedule

คำถามสำหรับการสัมภาษณ์แบบกลุ่ม

1. ขอขอบคุณทุกท่านที่ยินดีเข้าร่วมในการสัมภาษณ์แบบกลุ่มครั้งนี้ ขอให้ท่านบอกชื่อและชั้นปีที่ศึกษา

 ขอให้ท่านบอกถึงสิ่งที่ท่านคาดหวังจากการเข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ ครั้งนี้

ท่านรู้สึกอย่างไรบ้างจากการเข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติครั้งนี้ ?

4. สิ่งใดในโปรแกรมนี้ที่ท่านชอบมากที่สุด ? เพราะอะไร ?

สิ่งใดในโปรแกรมนี้ที่ท่านชอบน้อยที่สุด ? เพราะอะไร ?

 ก่อนการเข้าร่วมโปรแกรมการลดความเครียดตามแนวทางฝึกสตินี้ การฝึกสติมีบทบาทใน ชีวิตประจำวันของหรือไม่ ? อย่างไร ?

 หลังสิ้นสุดการเข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติ การฝึกสติมีบทบาทหรือเป็น ส่วนหนึ่งในชีวิตประจำวันของท่านหรือไม่ ? อย่างไร ?

 ท่านมีสิ่งใดที่อยากบอกเพิ่มเติมอีกบ้างเกี่ยวกับประสบการณ์ของท่านในการเข้าร่วมโปรแกรมการลด ความเครียดตามแนวการฝึกสติ

ขอขอบคุณทุกท่านเป็นอย่างมากที่เข้าร่วมโปรแกรมการลดความเครียดตามแนวการฝึกสติครั้งนี้

APPENDIX 38: Ethics Approval from the University of Newcastle

HUMAN RESEARCH ETHICS COMMITTEE



Notification of Expedited Approval

| To Chief Investigator or Project Supervisor: | Professor Michael Hazelton |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cc Co-investigators / Research Students: | Doctor Rachel Rossiter Mrs Napaporn Aeamla-Or |
| Re Protocol: | The Effect of Mindfulness-Based Stress Reduction on Stress, Depression, Self-Esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial |
| Date: | 02-May-2013 |
| Reference No: | H-2012-0347 |
| Date of Initial Approval: | 24-Apr-2013 |

Thank you for your **Response to Conditional Approval** submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 24-Apr-2013.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. *If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.*

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal *Certificate of Approval* will be available upon request. Your approval number is **H-2012-0347**.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants You may then proceed with the research.

The researchers were commended on the submission of a clear and informative response..

Conditions of Approval

This approval has been granted subject to you complying with the requirements for Monitoring of Progress, Reporting of

Adverse Events, and Variations to the Approved Protocol as detailed below.

PLEASE NOTE:

In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

Monitoring of Progress

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

• Reporting of Adverse Events

- 1. It is the responsibility of the person first named on this Approval Advice to report adverse events.
- Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.
- 3. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form (via RIMS at <u>https://rims.newcastle.edu.au/login.asp</u>) within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
- 4. Serious adverse events are defined as:
 - Causing death, life threatening or serious disability.
 - Causing or prolonging hospitalisation.
 - Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
 - Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
 - Any other event which might affect the continued ethical acceptability of the project.

5. Reports of adverse events must include:

- Participant's study identification number;
 - date of birth;
 - date of entry into the study;
 - treatment arm (if applicable);
 - date of event;
 - details of event;
 - the investigator's opinion as to whether the event is related to the research procedures; and
 - action taken in response to the event.
- 6. Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

• Variations to approved protocol

If you wish to change, or deviate from, the approved protocol, you will need to submit an *Application for Variation to Approved Human Research* (via RIMS at <u>https://rims.newcastle.edu.au/login.asp</u>). Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. Variations must be approved by the (HREC) before they are implemented except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

Linkage of ethics approval to a new Grant

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Professor Allyson Holbrook Chair, Human Research Ethics Committee

For communications and enquiries: Human Research Ethics Administration

Research Services Research Integrity Unit The Chancellery The University of Newcastle Callaghan NSW 2308 T +61 2 492 18999 F +61 2 492 17164 Human-Ethics@newcastle.edu.au

RIMS website - https://RIMS.newcastle.edu.au/login.asp

Linked University of Newcastle administered funding:

Funding body

Funding project title

First named investigator

Grant Ref

| Docum | nentary Proof of Ethical Clearance Committee on Human Rights Related to Research Involving Human Subjects University of Phayao |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title of Project | The effect of Mindfulness-based Stress Reduction on stress, depression, self-esteem and mindfulness in Thai nursing students: a randomised controlled trial |
| Investigator | Mrs.Napaporn Aeamla-Or |
| Protocol Number | 56 02 04 0006 |
| Reference Number | HE 56-02-04-0008 |
| Name of Office/Faculty | School of Nursing, University of Phayao |
| | The aforementioned documents have been reviewed and |
| | Acknowledged by Committee on Human Rights Related to |
| Date of approval | 8 August 2013 (3/2013) |
| Date of expiration | 8 August 2014 |
| Type of Approval | Expedited Review |
| | |
| | (Assistant Professor Dr. Wiboon Wattanatorn) |
| Cho | irman of Ethical Committee on Human Rights Related to |
| Re | search Involving Human Subjects, University of Phayao |
| | |

APPENDIX 39: Ethics Approval from the University of Phayao

APPENDIX 40: Approval from President of the University of Phayao

3 May 2012

President of the University of Phayao University of Phayao Maung, Phayao Thailand, 56000

NEWCASTLE กองบริการการศึกษา 0903 รับขึ 5 U.A. 2555 วันจ์ 14.052 เวลา.

Dear President,

Mrs Napaporn Aeamla-Or is a nurse lecturer in the School of Nursing, the University of Phayao. She is currently undertaking PhD studies under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.* It is proposed that the participants in the study will be recruited from nursing students studying in the first and second years of the nursing program at the University of Phayao.

Potential participants will receive information about the purpose of the study and the intervention program to be evaluated, and will have an opportunity to ask questions or seek further information prior to deciding whether they wish to be involved in the study. Those who agree to be involved will be asked to sign a consent form. Participants will then be randomly allocated to either an experimental group (n=70) or a control group (n=70). Participants in the experimental group will participate in a mindfulness-based stress reduction (MBSR) program comprising 8 weekly 2.5 hour group sessions and a full day (8 hours) intensive mindfulness session, held in the 6th week of the program. Participants in the control group will not be involved in any form of intervention, but would of course, be able to access counselling services provided on campus should they need to do so.

Participants in both groups will be asked to complete questionnaires including demographic information, measures of stress, depression, self esteem, mindfulness and use of health and counselling services, before and following the administration of the MBSR program. They will also be asked for permission to use information on subject grades in the undergraduate nursing program, in the research project. In addition, some participants from the experimental group (n=9) will be asked to participate in a focus interview after completion of the MBSR program. All instruments used in the study have been scientifically validated for use in Thailand and all will be administered in Thai language.

Please note, participants will be able to withdraw from the study at any time without having to give any reason for doing so, and it will not be possible for data generated in the research to be traced back to individual participants. It is expected that the outcomes of the study will contribute to knowledge about the impact of the MBSR program on the psychological health

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 CRICOS Provider Number: 00109J
 T
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of nursing students in Thailand.

If you approve of this request I would ask that you sign in the space provided below. Should you wish to do so Mrs Napaporn Aeamla-Or can be contacted by either telephone or email as follows:

Tel: 054-451373 Email: <u>c3135175@uon.edu.au</u>

Yours sincerely,

Professor Michael Hazelton Head of School School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

Approval:

I give permission for Mrs Napaporn Aeamla-Or, a PhD candidate under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, at the University of Newcastle, Australia to conduct research for the project: *the Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial* in the School of Nursing, the University of Phayao.

Signature, President of the University of Phayao:

| | (Professor Mondhon Sanguansermsri, Ph.D.) |
|-------|-------------------------------------------|
| Date: | 28 May 2012 |
| Day/1 | month/year |

Researcher signature:

Supervisor signature:

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|------------------------------|------|--------------------------------|-----------|---------|-------------------|--------|---------|-------|-------|
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APPENDIX 41: Agreement with Ethics Representative in Thailand



3 May 2012

Assistant Professor Wiboon Wattanatorn Vice-President for Research and Quality Assurance The University of Phayao Muang, Phayao 56000 Thailand

Dear Assistant Professor Wiboon Wattanatorn,

Mrs Napaporn Aeamla-Or is a nurse lecturer at School of Nursing, the University of Phayao. She is currently undertaking PhD studies under my supervision at the University of Newcastle, Australia. The title of her proposed research is *The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.* It is proposed that participants in the study will be recruited from nursing students in the first and second years of the nursing program at the School of Nursing, the University of Phayao.

Potential participants will receive information about the purpose of the study and the intervention program to be evaluated, and will have an opportunity to ask questions or seek further information prior to deciding whether they wish to be involved in the study. Those who agree to be involved will be asked to sign a consent form. Participants will then be randomly allocated to either an experimental group (n=70) or a control group (n=70). Participants in the experimental group will participate in a mindfulness-based stress reduction (MBSR) program comprising 8 weekly 2.5 hour group sessions and a full day (8 hours) intensive mindfulness session, held in the 6th week of the program. Participants in the control group will not be involved in any form of intervention, but would of course, be able to access counselling services provided on campus should they need to do so.

Participants in both groups will be asked to complete questionnaires including demographic information, measures of stress, depression, self esteem, mindfulness and use of health and counselling services, before and following the administration of the MBSR program. They will also be asked for permission to use information on subject grades in the undergraduate nursing program, in the research project. In addition, some participants from the experimental group (n=9) will be asked to participate in a focus interview after completion of the MBSR program. All instruments used in the study have been scientifically validated for use in Thailand and all will be administered in Thai language.

As you would expect, participants will be able to withdraw from the study at any time without having to give any reason for doing so, and it will not be possible for data generated in the research to be traced back to individual participants. It is expected that the outcomes of

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the study will contribute to knowledge about the impact of the MBSR program on the psychological health of nursing students in Thailand.

An important aspect of the ethics protocol for the study is that there is a clear procedure for participants to make complaints about any aspect of the research should they wish to do so. It is usual practice at the University of Newcastle to seek the assistance of a locally based senior academic staff member when research is being undertaken outside of Australia. The purpose of such assistance is to ensure that should a participant wish to make a complaint but is unwilling to do so with the research candidate, there is another person available to receive the complaint and pass it on to the Human Research Ethics Office at the University of Newcastle.

I would be most grateful if you would agree to undertake this important role with respect to Napaporn's research at the University of Phayao. If you are willing to do so, I will provide contact details for the Human Research Ethics Office at the University of Newcastle, so this is readily at hand in the unlikely event that you do receive a complaint.

If you agree to this request, I would ask that you sign in the space provided below and return this letter to myself at the following address:

Professor Michael Hazelton School of Nursing and Midwifery The University of Newcastle University Drive, Callaghan NSW, 2308 Australia

Should you wish to discuss any aspects of this request, please do not hesitate to contact me.

Yours sincerely,

Professor Michael Hazelton Head of School School of Nursing and Midwifery The University of Newcastle Tel: +61 2 49216770 Fax: +61 2 49216981 Email: Michael.Hazelton@newcastle.edu.au

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Approval:

I agree to be Ethics Representative in Thailand for the PhD study being undertaken by Mrs Napaporn Aeamla-Or, a PhD candidate under the supervision of Professor Michael Hazelton and Dr Rachel Rossiter, at the University of Newcastle, Australia. The title of the project is: The Effect of Mindfulness-based Stress Reduction on Stress, Depression, Self-esteem and Mindfulness in Thai Nursing Students: A Randomised Controlled Trial.

Assistant Professor Wiboon Wattanatorn Vice-President for Research and Quality Assurance The University of Phayao

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APPENDIX 42: Summary of participants flows of included studies

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| Authors | Study design | Participants | Number of participants prior to commencing treatment (Con:Exp) | Attrition rate | Attendance rate (All classes) |
|------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------|
| 1.Shapiro et al., 1998 (USA) | Parallel -group RCT | First- and second- year medical and premedical students | 78 (35:38) | 6.41% 1 Exp. did not completed program 4 Con. Lost to follow/up | NR |
| 2.Young et al., 2001 (Canada) | Quasi-experimental | Third-year nursing students | 30 (15:15) | NR | NR |
| 3.Rosenzweig et al., 2003 (USA) | Quasi- experimental | Second-year medical students | 302 (162:140) | NR | NR |
| 4.Beddoe&Murphy, 2004 (USA) | One-group pre-/post- test | Nursing students | 23 | 21.73% 5 did not complete program 2 did not complete pre-/post-test | NR |
| 5.Jain et al., 2007 (USA) | 3- arm RCT | Medical students, graduate nursing students, and undergraduate students in premedical studies | 104 (36:33:35) (Con:MM:SR) | 22.11% 23 (6:6:11) dropped out | NR |
| 6.Oman et al., 2008 (USA) | 3- arm RCT | Undergraduate students | 47 (15:16:16) (Con:MBSR:EPP) | 6.38% 1EPP and 2MBSR dropped out | 37.93% 11 of 29 Exp. attended all classes |
| 7.Shapiro et al., 2008 (USA) | 3- arm RCT | Undergraduate students | 47 (15:16:16) (Con:MBSR:EPP) | 6.38% 1EPP and 2MBSR dropped out | 37.93% 11 of 29 Exp. attended all classes |

Con: Control group participants; Exp: Experimental group participants; NR: Not reported; MM: Mindfulness Meditation; SR: Somatic Relaxation; EPP: Easwaran's Eight-Point program

| Authors | Study design | Participants | Number of participants prior to commencing treatment (Con:Exp) | Attrition rate | Attendance rate (All classes) |
|--------------------------------------|----------------------------------------|---------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| 8.Kang et al., 2009 (Korea) | Parallel -group RCT | Nursing students | 41 (20:21) | 4 Exp. missed program more than twice5 Con did not complete measurement | NR |
| 9.Shapiro et al., 2011 (USA) | Parallel -group RCT | Undergraduate students | 32 (15:17) | 6.25% 2 Exp. did not receive intervention | NR |
| 10. Shapiro et al., 2012 (USA) | One-group pre-/post- test, 2-mt F/U | Graduate students | 25 | 2 participants did not complete 2- month follow-up measurement | NR |
| 11.Barbosa et al., 2013 (USA) | Quasi- experimental | Graduate healthcare students | 31 (15:16) | 3Exp. did not complete program | NR |
| 12.Bergen-Cico et al., 2013 (USA) | Quasi- experimental | Undergraduate students | 119 (47:72) | NR | NR |
| 13.De Vibe et al., 2013 (Norway) | Parallel -group RCT | Medical and psychology students | 288 (144:144) | NR | Average attendance rate was 5.3 out of 7 sessions |
| 14. Demarzo et al., 2014 (Brazil) | One-group pre-/post- test | University students | 23 | NR | 30.5% |
| 15. Erogul et al., 2014 (USA) | Parallel -group RCT | First-year medical students | 59 (30:29) | 1.69% 1 Exp. dropped out | NR |
| 16. Song& Lindquist, 2015 (Korea) | Parallel -group RCT | Nursing students | 50 (25:25) | 1Exp. withdrew 2Exp. did not receive intervention 1Exp. did not complete program 2Con. lost to follow-up | NR |