Relevance of Mindfulness-Based Interventions on Nurses' Well-Being

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Abstract:
The role of nurses in all areas is exceptional in performing nursing skills. They are usually the primary care support for patients. At all times, the nurse should be attentive, calm, and able to solve and analyse problems quickly leading to better clinical outcomes. But due to high demands of care, the nurses are vulnerable to various degree of stressors that may affect their well-being. The research is literature review, which it aims to enable nurses to understand the nature of mindfulness and its benefits to their well-being. In this study, some of the Mindfulness-Based Interventions (MBI) have been applied to such nursing population: Mindfulness-based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT) and Breathwork Mindfulness. Jean Watson's Nursing Care Theory served as a theoretical foundation for this research paper. The search process resulted to 10 peer-reviewed and up-to-date articles. Keywords used were nurses AND well-being AND mindfulness-based interventions OR mindfulness-based stress reduction OR mindfulness-based cognitive therapy OR mindfulness. Databases included were CINAHL, PubMed, Ebscohost, Cochrane Library and Medline Proquest. The research study aims to answer the following questions: (1) What are the aspects of MBI that are essential for nurses' well-being? (2) How does MBI affect the well-being of the nurses? (3) Do variations in the duration of MBI sessions impact the effectivity for nurses? Results from the study show that the aspects of MBI such as present awareness, compassion, judgment and non-acceptance are evident in improving the nurses' emotional, psychological, occupational and physical well-being irrespective of the course length. Thus, Mindfulness-Based Interventions are beneficial to nurses' overall health.

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1 INTRODUCTION

The innate characteristic of the nurse such as caring is essential in coping up with stressful situation. Nurses are focused more on their patients and in effect, they sometimes neglect the need to care for themselves that leads to fatigue and burnout. They work in an automatic routine pattern, while the mind is wandering - contemplating about the future and the past tasks that is related to work. Excessive task and information increase the nurses' mental distraction and stress (Demshar, 2016). Nurses also encounter issues such as bullying, harassment and heavy workload (Mamo, 2013). These burnout related issues pose greater risk on nurses as they are exposed to prolonged emotional and physical stress in their workplace (George and Reyes, 2017). The impact of stress decreases the nurses' ability to focus and analyze in critical situations. Uncontrollable stress can have deleterious effects on patient's safety and nurses' well-being (The American Nurse, 2016). A study revealed last 2000 that 44,000-98,000 patients die every year because of medical errors and lack of attention and awareness about potential harm to the patients (Kohn et al., 2000).

Literatures about mindfulness in nursing give more emphasis on the need for self-care in combating stress and fatigue. Mindfulness is being aware in every moment and accepting whatever is happening around without judgment. Furthermore, mindfulness is an emancipation from worrying the past and the future and focusing more on the present moment. The practice of mindfulness in nursing involves shifting the mind intentionally to the present situation from the wandering mind and its goal is to achieve a state of attentiveness and focused relaxation thus, preventing the nurses in committing medical errors and providing the nurses with higher levels of well-being (Demshar, 2016).

John Kabat-Zinn introduced the Mindfulness-Based Stress Reduction in practicing mindfulness that is prominent now in most scientific literatures. Most of his patients that are diagnosed with panic or anxiety disorder benefited from this non-pharmacological self-regulation and received long term positive results (Miller et al., 1995). There is an increasing number of enthusiastic clinicians that study Mindfulness-Based Intervention and integrate into their therapeutic work (Allen et al., 2006). In Finland, the Center for Mindfulness follows Kabat-Zinn's practice and caters every individual from different

groups and ages to attain its benefits. Incorporation of mindfulness to everyday lives improves the health and well-being, cognitive function and affects the physiological part of the brain (Pascual-Leone et al., 1995). In most nursing literature, several methods of Mindfulness-Based Interventions are used in decreasing fatigue symptoms. Aside from MBSR, Mindfulness-Cognitive Intervention and Breathwork Mindfulness, which are based from MBSR, are also applied in several nursing context.

2 BACKGROUND

2.1 Defining Mindfulness

The idea of mindfulness is mostly rooted in the heart of Buddhism. The term has slight difference depending on the author's view. Zen Master Doc The defined mindfulness in religious context as sitting like Buddha in Bodhi Spot is like sitting in mindfulness and brings enlightenment (Hanh, 1976). While according to Thich Nhat Hanh, that "mindfulness shows us what is happening in our bodies, our emotions, our minds, and in the world" (positive psychology program, 2017). The ideas connected to mindfulness is complex, but it shares relations based from the philosophical and psychological Western tradition such as humanism, existentialism and Greek philosophy (Brown et al., 2007). But the commonality is directed to human experience which is rooted from the activities of the consciousness, awareness and attention (Brown et al., 2007).

What is apparent in most empirical health research is the definition of Dr. Kabat-Zinn about mindfulness. Mindfulness is usually linked to paying attention or self-awareness based from numerous theoretical sources (Kabat-Zinn, 1996). He emphasized that "mindfulness means paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally." This points out to awareness to existing stimuli at each moment. The keys to this practice are awareness, being curious and non-judgmental (Allen et. al, 2006). Despite from the various interpretations about mindfulness, the term displays a common basis that acknowledge different aspects of health such as emotion, cognitive, social and ethic (Grossman and Van Dam, 2011).

According to Kabat-Zinn (2011), the core aspects of mindfulness connects to the memory. In the sati form, a part of teaching in Buddhism, awareness is linked to the immediate past. He emphasized that our mental cognition sets us in the domain of being, the capacity to be awake and give meaning to the direct experiences. Non-judgmental awareness is embodied in mindfulness that for every direct experience, opinions and meanings arises, an individual must recognize it as pleasant or unpleasant or neutral only. This leads to a

direct experienced discovery in an effortless manner and realizing the experience happens sometimes spontaneously.

2.1.1 Origin of Mindfulness and its Secular Approach

It is said that mindfulness has begun from other religions such as Catholic, Islam and Jewish (Trousselard et.al, 2014). But the concept of mindfulness that dominated in most literature is cultivated in Buddhism (Brown & Ryan, 2003). Rhys Davis first translated mindfulness to sati in 1800s which is derived from the Pali language (Rahula, 1959). The practice of sati is based on the spiritual context of Satipatthana suta which connotes several features according to Buddhist text (Nanamoli & Bodhi, 2000). Another Buddhist monk named Thich Nhat Hanh (1976) explained that mindfulness is part of the core teaching of dharma. It denotes that recognizing objects beyond its non-existential world is through contemplating on its interdependence. Objects around human's existence are interconnected. He explained in a way that when individuals stare at the existence of the table, they also consider its outside existence, non-table world. The wood that was from the forest, the nails and screws from the ore, the person who built the table that has parents and ancestors, and other enumerable things that is related to the table. He emphasized that perceiving the relationship of each other is seeing the reality and the universe itself and meditating the aspects of dharma.

On the other hand, the definite characteristic of mindfulness has not been clearly defined into contemporary research psychology. The nature of mindfulness is described into different variances according to its theoretical and operational levels (Dimidjian & Linehan, 2003) such as a self-regulatory skill (Brown & Ryan, 2003) and/or acceptance skill (Linehan, 1994). A conceptual agreement in interpreting mindfulness is needed because it still connotes a diversity of definitions. To an extent, clinicians and researchers in psychology incorporated mindfulness to their clinical approach that delineates now in most literature (Brown et al., 2007). In the late 1970s, as the Buddhist meditation practices were becoming widely known and the probability of integration into science and medicine perceived it as being beneficial to most, Dr. Kabat-Zinn first brought mindfulness into secular setting. The birth of Mindfulness-Based Stress Reduction (MBSR) in 1979 paved

its way to science and medicine worldwide and was supported by various health sectors (William & Kabat-Zinn, 2011). Dr. Kabat-Zinn's concept about mindfulness cultivates on the decentering relationship to mental thoughts. He emphasized that at certain point, our minds cannot stop thinking and refocus on what we have to do especially when our minds are preoccupied with too much tasks (Segal et al, 2013). The works of Dr. Kabat-Zinn about mindfulness training have shown positive outcomes on the well-being (Kabat-Zinn, 1990). Numerous clinical practitioners utilize mindfulness as therapeutic treatment for psychological problems. Zindel Seagal and Mark Williams then established Mindfulness-based cognitive Therapy (MBCT), which is partially derived from Dr Kabat-Zinn's MBSR.

2.1.2 Mindfulness-Based Interventions

Numerous Mindfulness-based interventions are listed in some empirical literatures and resulted to have an effect in thoughts and body to several groups. The interventions are known to decrease stress, depression and anxiety related to physical or psychological disorder (Baer, 2003).

Mindfulness-Based Stress Reduction

Mindfulness-based stress reduction is founded by John Kabat Zin and its colleagues from University of Massachusetts. It is the first mindfulness intervention used in a healthcare facility. It is an education-based program that involves meditation, body scan (paying attention to the body's feeling), hatha yoga (paying attention to the body's feeling, explore and accept) and breathing space (Shauna et al, 2015). Other sources involve paying attention to daily routines such as eating, walking (Janssen et al., 2018). MBSR is conducted for 8-10 weeks and a trained clinician leads the group. They meet once a week and they discuss about managing their stress (Plank, 2011). Research shows that this intervention supports anxious patients in non-pharmacological self-regulation and self-control (Miller et al., 1995), relapse prevention in depression (Teasdale et al., 2000) and chronic pain (Kabat-Zinn, 1982).

Mindfulness-Based Cognitive Therapy

Mindfulness-based cognitive therapy is derived from MBSR and developed by Teasdale, Williams and Segal. (Williams et al., 2012). The incorporation of mindfulness to the practices of cognitive therapy maintains long lasting relief for emotional suffering. MBCT is an 8-week program and involves cognitive therapy and mindfulness usually for depressive relapse. The program is composed of 10-12 participants in 8 weekly 2 hours class. It includes basic education and practice mindfulness with audio recorded material. Independent meditation at home is encouraged up to one hour, 6 days each week and it offers up to 4 follow-up sessions (Fennell & Segal, 2011). Through this intervention, the participants can see clearly their thoughts and begin to recognize their deepest fears and worries. Once they are in their deepest thoughts, they'll be able to conquer or analyze and ruminate. This allows them to develop the capacity to let go without the feeling of suppression and to be fully aware with the present (Williams et al., 2012).

Breathwork Mindfulness

Breathwork is an organization that uses mindfulness pain and illness management and developed by Vidyamala Burch. Although this kind of approach are for people suffering from chronic pain, this can be applied also to individuals who are suffering from chronic stress. Most of the techniques in breathwork mindfulness are derived from John Kabat Zinn's MBSR and MBCT. But in this course, the meditation time is shortened for individuals who cannot sit for more than 40 minutes. This allows to set a definite goal step by step leading to health improvement for individuals suffering from illness. Aside from meditation, the program included exercises and social connections (Breathworks-mindfulness UK).

2.2 Nursing Profession: Varying Roles of Nurses and its working environment

According to Huber (2000), nursing profession is a calling that provides service to groups of patients and equipped with responsibility and expertise. In other contexts, nursing profession is based on the knowledge and skills, groups or perspectives while the fundamental value of profession is based from the society's view, how others view the nurse's behavior and defines nurses as professionals (Feeg, 2001). Florence Nightingale has a huge impact defining the role of nurses in the society and made such improvements on the profession (Hill, 2002). She was honored to be the founder of modern nursing and established the first school for the nursing profession (Hunt & Dolan, 2014). She introduced the concepts of nursing responsibility and authority (Hill, 2002).

The nurse's role is involved in diverse initiatives and improvement of the quality of care They fill the primary care gaps in the hospitals and serves as the care coordinator for the patient. The nurse monitors the patient, writes a care plan and facilitates changes in clinical setting. Moreover, due to these multidisciplinary roles of the nurses, the organizations are expanding the nurses' roles and maximize their potentials to provide patients a more coordinated care, team-based care (Howell, 2012). The roles of the nurses can be seen in different settings of the hospitals such as nurses in the emergency department which focuses on the resuscitation skills and adapt to the patient's needs upon its arrival, particularly in emergency situations (Jarman, 2007). For long term critical care, the critical care nurses (CCNs) provide utmost care to unstable patients from injury, surgery or acute phase of illness. The CCNs have the majority of the tasks involved in assessing and planning for the whole stay of the patient in the unit (Australia's Future Health Workforce, 2014). They also identify clinical changes and communicate effectively to the physicians to prevent further deterioration (Brilli et al, 2001). In addition, nurses in the hemodialysis area have specialized skills in dialysis machine operation and should be knowledgeable of its effect on the body system (Lamb and Norton, 2018).

Nurses primarily supports the frontline healthcare staffs in working with the patients and other staffs to promote health and well-being (Fuller, 2014). In addition, nurses' attitudes

towards patient's care involve the alleviation of pain, promoting and improving health and being an advocate for the patient and the family. (American Nurses Association, 2016). During traumatic situations, nurses' compassion and strong rapport are naturally developed as they are greatly immense in the burden and emotional distress of the patient and its family members (Stacey et al., 2016). Nurses feel the burden of their dying patients especially when the patient has poor prognosis of the illness. The nurse could possibly bear the responsibility of imposing pain to their patients. The role of the nurse does not only take part in patient's lives but also, they consider the family's involvement in the situation (Martin and Koesel, 2010).

External problems arise in the nursing units that hinder their maximum performance and compromise the patient's safety. The beeping machine noise, demanding environment, family distractions and other hospital's working system delays or affects the nurse's duty. (Gurses and Carayon, 2007). In addition to the burden in the workload of nurses, the consequences of the poor managing in an organization have also a great impact on the nurses' job that leads to abseentism and stressful work condition. (Miliken et al., 2007). Thereby, nursing shortage is increasing and the workload in the hospital becomes a burden to most nurses and contributes to patient's mortality (Aiken et al., 2002). These factors result to nurses' fatigue (Hooper et al., 2010) and affect the nurse's performance role, dignity, self-autonomy and job satisfaction (McClendon and Buckner, 2007).

2.3 Well-being

The concept of well-being exists in different literatures. In philosophical context, well-being is linked to the feeling of happiness as hedonism, (Vernon, 2014) and eudaimonism that is a fulfillment (Ryff et al, 1995). In other context, well-being is for people with high levels of positivity, which it happens in 2 levels: lower flourishing, where individuals strive to live within their preference of happiness. They look for ways to attain their satisfaction and if faced with challenges, they have reason to cope with such as, healthcare, safety net. While on the other hand, higher flourishing is going deeper to the meaning of life considering ethics, spirituality or religion (Taylor, 2007). For Christian writers, well-being is the love of God while in Buddhism, well-being is enlightenment (Vernon, 2014). In other words, the meaning of well-being is obscure but can be defined through its diverse dimensions from various public health research disciplines such as physical, emotional, psychological, occupational (CDC, 2018).

The World Health Organization considered several approaches that gives the term well-being a universal meaning (WHO, 2013). Well-being has 2 substantial types which are subjective and objective. Subjective aspect is the internal subjective experience of an individual (Alatarseva, 2015) such as view about meaning of life, purpose and value (NRC, 2013), while objective is the quality of life and the material well-being, that is independent from desires or feelings (Gaspart, 1997) and is influenced by level of income, educational achievements or safety or security (Alatarseva, 2015). The well-being instruments in measuring self-report could be in psychometrically-based or utility-based. Others are observational, physiological methods, peer-reports and other tools used by psychologists (Eid, 2008). Linking wellbeing to public health provides a holistic approach in disease prevention and health promotion (Diener et al., 2004), a measurement tool for causes of illness and deaths (Diener et al., 2009) and is essential for multiple health sectors in promoting and tracking well-being (CDCP, 2018).

Moreover, The National Center for Chronic Disease Prevention and Health Promotion or CDC mentioned several aspects of well-being that emerged from various research disciplines. Some of these are physical, mental, economic, social, psychological and life satisfaction. The physical well-being is linked to mental health and these are influenced

by physiological and behavioral and social (Martino, 2017). The physiological reaction such as the flight or fight response is managed by several body systems. Studies found that medical condition is strongly linked to stress and may lead to mental illness. Measuring physical well-being is based on the subjective reports of the symptoms or objective involving diagnostic measurements (Sherbourne et al., 1992). While emotional or mental health is the individual's cognitive, emotional and behavioral response at its potential level. It is the ability of the individual to cope with stress and able to function independently and contribute to the wellness of the society (WHO, 2013). Deterioration of mental well-being leads to manifestation of depressive symptoms, where a person may feel temporarily bad from disappointments, fatigue and other life's negative reaction and later on, may lead to long term deterioration of mood (Mielenterveysseura).

Moreover, the Ministry of Health and Social Affairs in Finland stated that when it comes to occupational well-being, the working environment must be safe, healthy and pleasant. The place should promote harmonious relationship while maintaining professionalism. A healthy workplace includes productivity and commitment of employees that prevent negative issues. It is said that employers and the employees work together in achieving a safe and well-managed organization. Well-being in the workplace is attainable through skills development and working environment.

A research organization in Finland named, Finnish Institute of Occupational Health, works together with Ministry of Health and Social Affairs. They conduct research and create wellness programs and trainings that support workers' work abilities in Finland (TTL). Overall, occupational well-being in Finland comprises all the aspects of working life, including the safety and quality of the working place, satisfaction of the workers and as well as the working relationship. These are the determinants for the effectivity of the whole organization to stay longer. The needs of the workers in terms of health should be considered by all organizations and if neglected, commitment issues, substance and alcohol abuse, mental health disorders and conflict may arise. The possible solutions for these are effective leadership and communication as well as integrating programs that target health problems (ILO).

3 THEORETICAL FRAMEWORK

The chosen framework for this study is Dr. Jean Watson's Theory of Human Caring. Dr. Watson's theory is widely known in the nursing field. She defined caring moment as not the only part of the nurses' task during the day but the transpersonal connection of the nurses to their patients (Watson, 2010). Caring is a call to deeper consciousness that leads to healing and wholeness and the nurse's present moment is required to attain this kind of authenticity (Watson, 2018). To attain these processes, Dr. Watson demonstrated the carative factors.

3.1 Major Concepts of the Theory

Dr. Jean Watson's major concepts of the theory are caring or healing consciousness, transpersonal caring relationship, caring occasion or caring moment, and caritas (Watson, 2010). The following paragraph will present the definitions of the major concepts.

Transpersonal Caring relationship is defined as human to human relationship in which the nurse affects the patients or others. The involvedness of both persons is being in the present moment and meets as one or equal (Watson, 1985). In addition, Watson's transpersonal process is related to the Quantum theory wherein being separated is a way to view the reality. Watson clarified that to attain the transpersonal state is to consider the unitary world view wherein all living things are interconnected (Watson, 1999). The second is the caring occasion or caring moment. It is the connection of two persons sharing authentic, heart-centered, intentional meaningful experiences within their phenomenal field that leads to discovery of new life possibilities (Watson, 2010). Third is caring or healing consciousness. It is increasing the awareness of the own self through meditation or reflection in understanding the concept of caring. The nurse explores the essence of caring from her own self, patient and the family and thinks how to make others feel better from suffering (Watson, 2010).

The 10 carative practices have become the important basis for implementing love and kindness into nursing practice that leads to healing environment (Watson, 2012). From

carative factors to carative processes, which were influenced by Dr. Watson's professional growth and development, the carative practices need to be addressed while the nurse is caring for the patient (Watson, 2010). She emphasized that before using the carative factors, the nurse must be aware and knowledgeable about the patient's needs for the care (Lukose, 2011).

Dr. Watson (2012) categorized the carative practices based on its intervention. The first four carative processes which uses the nurse's authentic self in actions are the following:

1. Practicing loving-kindness and equanimity within the context of caring consciousness. The nurse values itself and others with dignity and unselfishly.
2. Being authentically present and enabling and sustaining the deep belief system of self and one being cared for. The nurse always listens and considers others belief system.
3. Cultivating one's own spiritual practices and transpersonal self, going beyond ego self. The nurse is aware about itself and others in developing personal growth, individual's belief and practices.
4. Developing and sustaining a helping-trusting authentic caring relationships. Involving the patient, family and the staffs in promoting helpful-trust relationship.

While in the next carative practices involves the patient in developing action-oriented outcomes. The following practices reflect the exchange of energy and spirituality.

5. Being present to, and supportive of the expression of positive and negative feelings as a connection with deeper spirit of self and the one-being-cared for. Listening to others genuinely to promote spiritual growth.
6. Creatively using self and all ways of knowing as part of the caring processes; engaging in artistry of caring-healing practices.
7. Engaging in genuine teaching experiences that attend to unity of being and meaning, attempting to stay within another's frame of reference.

The remaining carative processes involves the tangible and intangible within the physical and existential sphere.

8. Creating healing environment at all levels, whereby wholeness, beauty, comfort, dignity, and peace are potentiated.

9. Reverently and respectfully assisting with basic needs, with an intentional caring consciousness, administering “human care essentials.
10. Opening and attending to spiritual-mysterious, and unknown existential dimensions of one’s own life-death-suffering; soul care for self and the one-being-cared for; “allowing for a miracle”

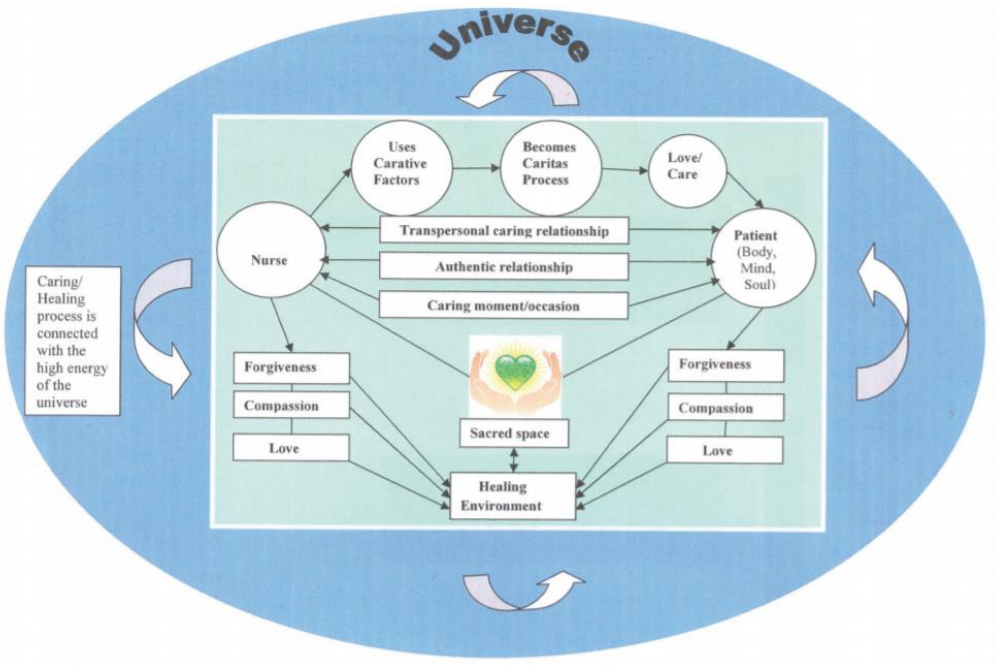

Figure 1. Jean Watson’s theory of human caring – a practice model

3.2 Relevance of the Theoretical Framework to the study

Watson’s theory is used in this study to explore the nurse’s well-being relevant to nursing care (Watson, 2005). Although the theory is evolving in providing a holistic care to the patient, Dr. Watson believes that in attaining the caring moment, the nurse must be conscious (Watson, 1994). Watson’s theory promotes nurse’s engagement to self-care. She believes that an individual who works in a caring healing paradigm must engage herself to self-mindfulness such as meditation, breathwork, yoga, prayer, connections with nature and other daily reflective practices (Watson, 1997).

4 AIMS AND RESEARCH QUESTIONS

The purpose of this study is to to explore the link between Mindfulness-Based Interventions (MBI) and the nurses' well-being who are working in the hospital settings, to enumerate and integrate the benefits of MBI programs and to determine the effectivity of MBIs in Nurses' performance.

The following formulated research questions are listed and used as guide in achieving the purpose of this study.

1. What are the aspects of MBI that are essential for nurses' well-being?
2. How does MBI affect the well-being of the nurses?
3. Do variations in the duration of MBI sessions impact the effectivity for nurses?

5 METHODOLOGY

5.1 Data Collection

The articles used in this study were identified in several search engines: CINAHL, Cochrane Library, Medline Proquest and Google Scholar search engine. Various keywords and phrases related to the research questions were used.

The initial search was conducted in EBSCO Host, Cumulative Index to Nursing Database (CINAHL) together with Academic Search Elite, with the boolean phrases, nurse, mindfulness and stress reduction. The publication date of the articles was limited between 2008 – 2018 and all are peer reviewed. The total results displayed 38 hits. Through reading the abstract and its relevance to nursing, only 4 articles are selected. Another search was done using the boolean phrases, nurse, mindfulness and compassion. The hits were 31 and only 2 articles are selected for the study. In the same search engine, the Boolean phrases were revised into a more specific working group considering still the population of the study, with the following phrase/s: nurse, mindfulness and critical care or intensive care or icu. The results displayed 16 hits and 1 article is relevant for the study. In Cochrane Library, which is a collection of evidence-based health research. The abstract keyword used was Mindfulness-based intervention nurse that displayed 26 hits under trial. 2 articles were selected for the study. The Medline Proquest offers a wide range of scientific fields. The keyword used in selection of the article is 'mindfulness and nursing'. The articles are selected between 2009 until the present and that are peer reviewed. The database displayed 28 results and upon the selection of the articles through the inclusion and exclusion criteria, only 1 article was selected for review.

Several databases were used in searching for the articles that are relevant to the study using the keywords mindfulness, nurses, mindfulness-based stress reduction and/or burnout and stress. The author encountered challenges looking for the articles due limited study related to nursing. Few journal websites were browsed such as google scholar and from the University of Helsinki's database and the author found few articles that are relevant to the study. The Journal of Healing and Science displayed 3 hits with the

‘mindfulness and nurse’ search words in the title/abstract/keyword. Application of inclusion and exclusion criteria resulted to 1 article selection. The Scientific Research or SCIRP displayed 1 article that is relevant to the study with the keyword mindfulness-based meditation nurse.

The following inclusion and exclusion criteria are applied in selecting the articles. The article is selected when:

1. Any of the mindfulness-based interventions are performed based from Kabat-Zinn’s mindfulness method.
2. The participants are composed of nurses or large population of nurses that work in any of the hospital settings.

The study is excluded if:

1. Any of the mindfulness intervention is combined with other therapies that differed substantially from mindfulness-based interventions.

5.2 Content Analysis

Qualitative research is used to seek answers to a question or given research problem. This provides a deeper understanding about the complex reality of the given issue or the inference of a quantitative data (Mack et al., 2005). Qualitive research has several analysis methods, such as phenomenology, grounded theory, ethnography and content analysis (Burnand, 1995). The qualitative content analysis that is commonly used in nursing research and education, particularly the review of literature, provides various opinions and unsolved issues based from relevant databases searched (Graneheim and Lundman, 2003).

In this thesis work, the author used Graneheim and Lundman's qualitative content analysis in inductive approach. According to Graneheim and Lundman (2003), the researcher needs to decide the focus of the analysis: Latent content analysis, wherein the interpretation of what the text says deals with the relationship aspect and explanation of the underlying meaning while in the manifest content, the analysis of the text deals with the obvious or visible components. In content analysis, the basic step is selecting the unit of analysis. This refers to various objects for study and it is being suggested that interviews or observation protocol can be considered as a context for meaning of units. The meaning unit are words or statement that are related together based on the content and context. Reducing the meaning units but preserving the quality of the text refers to as condensation. The process of grouping together the descriptions and interpretations under higher level is abstraction. Parts of the text which refers to the specific issue is called content area. Identification or label of the meaning unit is code. The creation of categories is the important feature of content analysis. Category uses several codes that shares similar content and category can be divided to sub categories at varying levels of abstraction. Theme is connecting the underlying meanings together in categories.

The 19 articles were filtered through the inclusion and exclusion criteria resulting to 10 articles that are relevant for the study. A thorough reading was done several times from all the 10 selected articles. The author highlighted relevant and interesting data and made notes. The main codes of the meaning units from the notes and used as labeling codes. In this stage, different marking colors were used for different codes and the author

underlined the important keywords. Other symbols were used for other codes to indicate the degree of relevancy to this study. The next step is reviewing the highlighted texts and notes made several times and listed. The author categorized the information according to the relevancy of the code that no code will fall into more than one category.

5.3 Ethical Considerations

Ethics serve as the standards for conduct that determine between acceptable and unacceptable behavior. In research, ethical considerations are very important. These promote the aims of the study to provide truth, knowledge, and information, and to prevent falsification and misrepresentation of data. Researchers must also abide to ethical standards to promote trust and mutual respect in collaborative works and for protection of intellectual property interests and confidentiality. Assuring the public that the guidelines for issues such as human rights, compliance to the law, and so on, have been followed, is also crucial as these ethical issues impact the integrity of the research.

This study made to ensure that ethical standards have been appropriately met. In the Research Ethics Guidebook, it is noted that when doing a literature review, it is an ethical norm to consider how previous works can be used to build the present research. Upon doing a literature review and thorough reading of existing studies, the researcher was able to identify the relationship and gaps between mindfulness- based interventions and well-being of nurses, as well as prevent any occurence of consequences that may arise from unethical repetition of information.

In accordance with the Finnish Advisory Board on research integrity (TENK, 2012), a research study must be done in full compliance to the responsible conduct of research for it to be deemed reliable and ethically acceptable, and the results, credible. A set of guidelines have been set to ensure that research studies are conducted in a responsible and regulated manner. This study aimed to follow all the guidelines on responsible research, avoiding misinformation or misrepresentation of data, and giving full acknowledgment to works of other researchers through proper source referencing.
Arcada's guidelines on good scientific practices were also read, understood and adhered to by the researcher all throughout the thesis process.

6 FINDINGS

6.1.1 Themes and Subthemes

The table shows the major and minor categories for 10 articles listed previously and how these categories can be gathered to come up with a theme.

Theme	Relationship between Mindfulness-Based Intervention and well-being of nurses							
Sub Theme	Linking MBI with Well-being				Correlation of the nature of MBI and its outcome that impacts the well-being of nurses			
Major Categories and Minor Categories	Emotional	Occupational	Psychological	Physical	Present Moment Awareness	Compassion	Non-judgment	Acceptance
	Coping with depressive symptoms	Job Satisfaction, Attentiveness and Patient quality of care	Cognitive Functioning	Coping with physiological stress	Noticing present thoughts and feelings	Sensitivity to change and effect to others	Observing without judging	Recognition of feelings and letting go
Unit of Analysis	1, 3, 7, 8	4, 5, 7, 9, 10	1, 4, 6, 7	1, 2, 3, 4 5, 7, 9, 10	1, 4, 5, 6, 7, 8	1, 2, 5, 9, 10	7	1, 7

Figure II. Illustration of the most common categories and their distributions within the 10 unit of analysis and coming up with a theme.

The major categories that were apparent during the data analysis processes will be presented. The numbers inside the brackets correspond to the analyzed articles mentioned in the data analysis section.

Emotional or Mental Well-being. Mindfulness is linked with emotional regulation. The descriptive result of the nurses about Mindfulness-Based Intervention were examined and the studies show that those who are practicing mindfulness had a significant reduction of depressive symptoms and compassion fatigue. Nurses' nature of work is exhausting and emotionally draining that leads to burnout. Compassion fatigue that results to post traumatic stress depression is caused by repeatedly witnessing another person's suffering and trauma. When nurses are mindful at work, the emotional regulatory skill responds to the negative situations. It balances the emotional state after some disruptive thoughts or impulses. A component of mindfulness which is meditation, affects a part of the brain for

emotion regulation (Chiesa et al., 2013). In addition, William and Kabat-Zinn (2011) emphasized that clear comprehension and enlightenment are salient results of mindfulness training. Through awareness, thoughts and emotions are controlled. (1, 3, 7, 8)

Psychological. One of the components of mindfulness is enhancing the self-regulation attention that is associated with focus and concentration. Nurses who practiced mindfulness for several months had an improvement in attention span and committed less errors at work based on their subjective results. To fortify the effect of mindfulness in intellectual well-being, a measurable test for sustained attention called Psychomotor Vigilance Test (PVT) was conducted wherein the subjects are instructed to respond as quickly as possible. After a series of sessions of mindfulness, nurses have shown better performance in the PVT test. In addition, the nurses' sense of coherence improved after the intervention. The methodological approach of mindfulness training is directed to build new insights, knowledge and skills. Focused concentration is practiced following the thoughts conveyed in mental experience (Fennell & Segal, 2011). (1, 4, 6, 7)

Occupational. Nurses experience greater empathy with themselves and also with their patients upon attending the sessions of mindfulness interventions. Burnout syndrome is caused by chronic occupational stress that leads to negative behaviors and affects their relationships with the patients and workmates. Nurses are trapped between their moral beliefs and ethical grounds from their professions. It is said that most nurses are faced with moral distress. When caring for a terminally ill patient, continuous aggressive care is possibly rendered against the patient's will. The families or immediate relatives usually decide for the patient when the patient is not capable of its own decision. The nurse in charge on the terminally ill patient might experience distress due to the new insights that could be contrasting from the nurse's own moral values (McClendon & Buckner, 2007). To lessen moral distress that leads to burnout, it is suggested that nurses should be more resilient in all situations. The practice of mindfulness helps nurses in times of distress, to become aware more of their thoughts and refine into positive outcomes (Kemper, Mo, & Khayat, 2015; Zeller & Levin, 2013 and Heard, 2013). (4, 5, 7, 9, 10)

Physical. The relationship between mindfulness and physical well-being is associated with the ability to cope with stress. It is evident that nurses, especially those who are working in the intensive unit, are exposed daily to their patient's suffering and loss. As well as, nursing shortage affects the workload of the nurses and as a consequence, overtime work fills the gap in the working shifts. After performing 8 weeks of mindfulness, nurses realized that the intervention are found to be relaxing and refreshing. They became more conscious also about self-care and self-confidence. There was a significant improvement in sleeping patterns, managing daily activities and reduced pain and discomfort. The dimension in physical wellness includes taking care of the body. The breathing techniques in the mindfulness practice comprises all the vital systems of the body. Breathing techniques enable the senses and other internal process in a conscious state. Therefore, the systems in the body are synchronized with the rhythm of the breathing (Grossman, 1983). (1, 2, 3, 4 5, 7, 9, 10)

Present Moment Awareness. Part of the intervention is bringing the attention back to the inner state and refocusing it to a specific locus following observation. The practices in the program brought the nurses to the present moment such as being conscious about the actions like eating, walking; body scan which is focusing on the body parts as instructed by the instructors and refocusing if the mind started to wander; and lastly, mindfulness of breathing which is focusing on the breathing maintaining its rhythm and depth all the time. Following these practices, the qualitative results have shown that nurses who undergone the first 3 months of intervention started to report about the reduction of nursing errors in their workplace. Majority of the nurses in the study reported also an increased in mindfulness, focus and awareness. In the cognitive therapy, the participants are asked to write a diary how they spend time and satisfaction in all their activities. Through the written information and with the guide of the therapist, the participants start to become aware about the ruminative or negative insights and question their thoughts if it is applicable in their direct experiences. Thereafter, the participants can respond in a skillfully positive manner when dealing with negative thoughts. (1, 4, 5, 6, 7, 8)

Compassion. Meditation, which is part of the mindfulness training, brings an opportunity for the participants to reflect his or herself and refocus on their motivations. In this way, they have the ability to strengthen their emotions and be more mindful to relate with others. The studies show that nurses increased their compassion satisfaction and self-compassion based on the qualitative measures. Catastrophic events in the workplaces affect the nurses' emotions and their professions. Being an advocate of meditation, nurses maintain a strong emotional state of kindness and compassion (Davies, 2008). Kuyken and Feldman linked compassion with orientation of mind in recognizing pain and suffering, and the capacity to respond in kindness and loving manner. (1, 2, 5, 9, 10)

Non-judgment. Nurses learn to be more aware of their feelings and sensations while approaching their inner condition without judgment. These experiences are included in the practice of mindfulness. Nurses can recognize their thoughts and feelings without getting stuck or caught up in to the situation. The aspect of mindfulness makes nurses to notice the distressing thoughts without reacting on it. (7)

Acceptance. The qualitative results shown that nurses had improvement in their reactivity to their inner experiences. When they recognized their negative thoughts, they are able to accept it with openness and greater responsiveness. In the addition to the aspect that comprises meditation as previously mentioned, this practice initiates the nurses to explore an inner attitude of dignity, patience and self-acceptance. Cultivation of mindfulness practice in nursing professionals leads to positive effects. Nurses feel warm and comfortable towards themselves when they reached self-acceptance (Shimidtts, 2004). (1, 7)

7 DISCUSSION OF FINDINGS

The mindfulness-based interventions are important in enhancing the nurses' well-being. Based from the findings of the study, present moment awareness, compassion, non-judgment and acceptance are the prominent aspects that applied in the practice of the mindfulness-based interventions. Kabat-Zinn (2011) mentioned that for every direct experience an individual encounter, it tends to recognize the immediate past and at the same time, exist in the being of present moment. Through the practice of mindfulness, nurses are able to focus more on their tasks because they developed mindful attention and awareness. The nature of work in nursing is full of workloads coming from the doctors, other nurses, patients and the management. Nurses have a hard time to sort things out and prioritize what must be. Cognitive exercise such as continuous meditation and yoga brings the mind to lucid awareness even at sleep (Davies, 2008).

In addition, nonjudgment is decreasing the attitude of discrimination but instead showing kindness towards colleagues and this constitutes the work of mindfulness. Nurses may feel failures from their daily work or encounter patients suffering from pain. They initially react critically before appropriate actions must intervene. In mindfulness, the nurses are thought to be less judgmental and avoid harsh criticism towards themselves and others. Meditation trains the nurses' mind to see clearly and get in to the thought of consciousness, but instead of reacting or give significance to it, nurses recognize the present thought then move on. Meditation exercises the brain that stops it from overthinking and take control of the disruptive thoughts (Davies, 2008). These components disengage the nurses from automatic routines and negative thoughts that emerge in their workplaces.

As mentioned above, the aspects of mindfulness regulate the behavior of an individual and is related to improving the well-being. The common practices in mindfulness-based interventions are body scan, yoga, awareness, group sessions, self-practiced meditation at home and self-reflection. Each of these practices aims directly to positive psychological, emotional, occupational and intellectual outcomes. The studies conducted by Kabat-Zinn proved that formal meditative practices prevent emotional exhaustion (Katz et al., 2005). Meditation brings many benefits to the nurses when it is practiced

accordingly. It is a cognitive exercise that clears and controls the thoughts. This gives a sense of withdrawal that focus on the inner-self. As they are focused on the introspection and away from outside distractions, mental ability is enhanced. When they reached an increase in cognition, positive and life affirming thoughts will experience (Davies, 2008). Through this, nurses will have mental clarity, improved focus and the ability to manage stress. Thus, nurses may respond to the situations immediately instead of later actions. This will also prevent nursing errors and improve safety and quality of care in patients. Occupational well-being is achieved through a less stressful and safe environment.

The outcomes of the mindfulness-based interventions yield to positive results irrespective of the duration on MBI sessions. The MBI sessions were performed after the nurses' working shift or out of their working schedules which some of the nurses had a difficulty in compliance with the attendance and other quitted but still ended to the expected outcome of the intervention for those who finished the course. The traditional mindfulness-based intervention takes up to 8 weeks of different sessions (Miller et al., 1995). In a study population of the oncology nurses, the MBSR were shortened up to 6 weeks but still adapted to the principles and exercises from the original version. The length of the sessions is usually adjusted to make it easier for the nurses to adapt despite their busy schedules. The oncology nurse with the high attendance reported positive response to stressful situations. In addition, the PICU nurses' intervention method produced positive results after 4 weeks that enhanced their self-compassion and manage stress. Overall, the MBI sessions from 4 – 8 weeks still have a positive result to the nurses' well-being. Incorporating the MBI traditional practices appropriately are the most essential in each session despite the duration of the intervention (Duarte and Pinto-Gouveia, 2016). Different techniques of meditation were performed and mindfulness exercises on site and at home were given to all participants based on the studies.

7.1 Relating the findings to the Theoretical Framework

When the nursing staff engages herself in Watson's theory, the patient becomes the center of care. In Watson's caring moment, the nurse is mindful about the patient's health needs in terms of safety and comfortability such as noise reduction or music therapy for suffering patients. The mindfulness-based intervention helps to restore the nurses' self-compassion after series of practice. Nurses also become aware to care for themselves by being mindful about simple tasks. Nurses in high intensity areas can apply relaxation techniques when they are in stressful situation. Thus, when they realize the needs for themselves and their patients, it improves the patient care and nurse satisfaction that is part in theory of human caring. In addition, Jean Watson's caritas program emphasizes being at the present moment, spiritual practices, and acceptance or creating a healing environment which comprises most of the aspects of mindfulness-based intervention (Caruso et al., 2008). According to Crewe (2016), a working environment that promotes self-actualization or self-care leads to reduction on stress.

8 CONCLUSION

Occurrence of work-related stress in the hospital setting is always existing. This greatly impacts the nurses' well-being and the organization. But changing the reaction during stressful event may help in maintaining the wellness of the nurses. Based on the studies mentioned, the nurses had the time to identify stressful situations during their group sessions and helped them to realize its negative effects to themselves. They attained high degree of acceptance to emotional situations and changed the way they perceived and respond to stress. The mindfulness programs improve nurses' performance of procedures and assessment skills. It brings greater sense of alertness and less distraction in the workplace. The nurses' interpersonal communication also strengthens when mindfulness is applied. Nurses become more aware to how and what their patients or co workers are communicating. Considering mindfulness is efficacious in coping with stress and reduce occupational burnout and increase their overall well-being. It is suggested that nurses must comply to the whole intervention program to achieve its benefits.

8.1 Strengths, limitations, and recommendations

The nursing population in this study were from different areas of the hospital. The application of MBI to their institution resulted to positive findings. However, this study has limitations that needs further research and knowledge.

Due to the limited resources about the application of MBI in the nursing studies, only 2 studies included licensed practical nurses, nurse technicians and assistants and the remaining are focused on the registered nurses. Future studies may direct to the practicing clinical nurses from different clinical areas. In addition, the compliance of the nurses in the program is erratic. The possibility of nurses' changing shift, personal reasons and the institution's delivery of the program offsite and after work could have affected the compliance of nurses in the whole course of MBI.

Furthermore, a concrete study about the effectivity of MBI in a multi-ethnic society among nurses should be carried. Nurses came from different cultures and beliefs. A study about MBI and nurses with different religion in a hospital setting will substantiate the effectiveness of MBI. It is also recommended to conduct a study about the nurses' performance and the patient's outcome after MBI is conducted among the nursing population. This may strengthen the evidence on the efficacy of MBI among nurses in delivering patient safety and satisfaction. MBI can be also included in the hospital's program about preventing fatigue and burnout among their employees.

9 REFERENCES

Aiken L., Clarke S., Sloane D., Sochalski J. and Silber J. 2002. Hospital Nursing Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction. American Medical Association. JAMA. Vol 288 No 16 Pp.1987

Alatarseva, E. and Galina, B. 2015. Well-being: Subjective and Objective Aspects. Elsevier. Procedia - Social and Behavioral Sciences 166. Pp38

Allen, N., Blashki, G. and Gullone, E. 2006. Mindfulness-Based Psychotherapy. The Australian and New Zealand Journal of Psychiatry 2006; 40:285–294

American Nurses Association. 2016. Scope of Practice. Available from https://www.nursingworld.org/practice-policy/scope-of-practice/. Accessed 7.10.2018

Australia's Future Health Workforce: Nurses. 2014. Available from https://www.health.gov.au/internet/main/publishing.nsf/Content/34AA7E6FDB8C16ACACA257D9500112F25/$File/AFHW%20-%20Nurses%20detailed%20report.pdf. Accessed: 14.04.2018

Baer, R. A. 2003. Mindfulness training as a clinical intervention: A conceptual and empirical review. Clinical Psychology: Science and Practice, 10(2), 125–143. http://dx.doi.org/10.1093/clipsy.bpg015

Breathworks and Mindfulness. Available from https://www.breathworks-mindfulness.org.uk/aboutbreathworks. Accessed 24.04.2018

Brilli R., Spevetz A., Branson, R., Campbell G., Cohen H., Dasta J., Harvey M., Kelley M., Kelly K., Rudis M., St. Andre A., Stone J., Teres D., Weled B. 2001. Critical Care Delivery in the Intensive Care Unit: Defining Clinical Roles and the Best Practice Models. Critical Care Medicine. Volume 29, No 10

Brown K. and Ryan R. 2003. The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being. Journal of Personality and Social Psychology. Vol. 84, No. 4, 822-848

Brown, K., Ryan, R. and Creswell, J. 2007. Mindfulness: Theoretical Foundations and Evidence for its Salutary Effects. Psychological Inquiry, 18:4, 211-237, DOI: 10.1080/10478400701598298

Burnand, P. 1995. Interpreting text: an alternative t some current forms of textual analysis in qualitative research. Social Sciences in Health, 1.

Caruso, E., Cisar, N., & Pipe, T. 2008. Creating a healing environment: An innovative educational approach for adopting Jean Watson's Theory of Human Caring. Nursing Administration Quarterly, 32, 126-132. doi:10.1097/01. NAQ.0000314541.29241.14

Centers for Disease Control and Prevention (CDCP). 2018. Well-Being Concepts. Available from https://www.cdc.gov/hrqol/wellbeing.htm. Accessed 07.11.2018

Chiesa, A., Serretti, A., Jakobsen, J.C., 2013. Mindfulness: top-down or bottom-up emotion regulation strategy? Clin. Psychol. Rev. 33 (1), 82–96. doi:http://dx.doi. org/10.1016/j.cpr.2012.10.006.

Crewe, C. 2016. The Watson Room: Managing Compassion Fatigue in Clinical Nurses on the Frontline. Walden University

Davies, W. 2008. Mindful Meditation. Holistic Nursing Practice. Pp.33

Demshar, Jeanie. (2016). The Mindful Nurse. The Florida Nurse. Florida Nurses Association. Pp. 9

Diener E, Lucas R, Schimmack U, and Helliwell J. 2009. Well-Being for public policy. New York: Oxford University Press

Diener E, Seligman ME. 2004. Beyond money. Toward an economy of well-being. Psychological Science in the Public Interest;5(1):1–31.

Dimidjian, S., & Linehan, M. 2003. Defining an agenda for future research on the clinical application of mindfulness practice. Clinical Psychology: Science and Practice, 10, 166– 171.

Eid M. 2008. Measuring the Immeasurable: Psychometric modeling of subjective well-being data. In: Eid M, Larsen RJ (eds.) The science of subjective well-being. New York: Guilford Press:141–167.

Feeg, V. 2001. Another view of professionalism. Pediatric Nursing. May/Jun2001, Vol. 27 Issue 3, p220-222. 2p.

Fennell, M. and Segal Z. 2011. Mindfulness-Based Cognitive Therapy: Culture Clash of Creative Fusion? Contemporary Buddhism. Taylor and Francis. Vol .12, No. 1, pp.127

Fuller, Sabrina. 2014. The role of nurse leaders in improving health. Nursing Times. Vol 111 No 3.

Gaspart F. 1997. Objective measures of well-being and the cooperative production problem. Soc Choice Welfare;15(1):95–112.

George, R. and Reyes, M. 2017. Burnout as a predictor of quality of life among selected Filipino nurses. Indian Journal of Health and Well-being. Vol. 8, No. 7

Gurses, A. and Carayon, P. 2007. Performance Obstacles of Intensive Care Nurses. Nursing Research. Lippincott Williams & Wilkins. Vol. 56, No. 3.

Graneheim, U.H. and Lundman B. 2003. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Education Today. Vol. 24; doi:10.1016/j.nedt.2003.10.001

Grossman, P. 1983. Respiration, stress, and cardiovascular function. Psychophysiology 20: 284–300.

Grossman P. and Van Dam N. 2011. Mindfulness, by any other name…: Trials and Tribulations of Sati in Western Psychology and Science. Contemporary Buddhism. Taylor and Francis. Vol .12, No. 1, pp220

Hanh, Thich Nhat. 1976. The Miracle of Mindfulness: An Introduction to the Practice of Meditation. Beacon Press books. pp. 13; pp.46

Heard, P. (2013). Rekindling the flame: Using mindfulness to end nursing burnout. *Nursing Management*, 44(11), 24-29.

Hill, M. 2002. Reflections on Nursing. Dermatology Nursing. Vol. 14, No. 1

Hooper, C., Craig, J., Janvrin, D., Wetsel, M., & Reimels, E. 2010. Compassion satisfaction, burnout, and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. Journal of Emergency Nursing, 36(5), 420-427.

Howell Whitney. 2012. The Changing Role of Nurses. Hospital and Health Networks. Mar2012 Vol. 86 Issue 3. Pp. 36-49 5p.

Huber, D. 2000. Leadership and nursing care management. Philadelphia: W.B. Saunders Company

Janssen M., Heerkens Y., Kuijer W., Heijden B., and Engels J. 2018. Effects of Mindfulness-Based Stress Reduction on employees' mental health: A systematic review. PLOS One 13(1). https://doi.org/10.1371/journal.pone.0191332

Jarman, H., 2007. The emergency care nurse role: a clinical staff attitude survey. Emergency Nurse 14, 26.

Kabat-Zinn, J. 1990. Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness. New York: Delacourt

Kabat-Zinn, John. 2011. Some reflections on the origins of MBSR, skillful means, and the trouble with maps. Taylor and Francis. Contemporary Buddhism, Vol. 12, No. 1, May 2011 ISSN 1463-9947 print/1476-7953 online/11/010281-306. DOI: 10.1080/14639947.2011.564844

Katz J, Wiley S, Capuano T, Baker D, Shapiro J. 2005. The effects of mindfulness based stress reduction on nurse stress and burnout. Part two. A quantitative and qualitative study. Holistic Nurs Pract. Vol. 19:26–32.

Kemper, K.J., Mo, X., & Khayat, R. (2015). Are mindfulness and self-compassion associated with sleep and resilience in health professionals. *The Journal of Alternative and Complementary Medicine*, 21(8), 496-503.

Kohn, L.T., Corrigan, J.M., & Donaldson, M.S. (Eds). 2000. To err is human: Building a safer health system. Washington, DC: National Academy Press.

Lamb, Paula and Norton, Christine. 2018. Nurse experiences of using clinical competencies a qualitative study. Nurse Education in Practice. Elsevier. Volume 31, July 2018, Pages 177-181

Linehan, M. M. 1994. Acceptance and change: The central dialectic in psychotherapy. In S. C.Hayes,N. S. Jacobson,V. M. Follette, & M. J. Dougher (Eds.), Acceptance and change: Content and context in psychotherapy (pp. 73–90). Reno,NV: Context Press.

Lukose, A. 2011. Developing a Practice Model for Watson's Theory of Caring. Nursing Science Quarterly. 24(1) 27–30

Mack N., Woodsong C., Macqueen K., Guest G. and Namey E. 2005. Qualitative Research Methods: A Data Collector's Field Guide. USAID. Family Health International. Pp 1-2

Mamo, Emma. 2013. Too much pressure: NHS employers must invest in nurses' wellbeing. Nursing Standard. Vol.28 No.2.

Martin, B and Koesel N. 2010. Nurses' Role in Clarifying Goals in the Intensive Care Unit. Critical Care Nurse. Vol. 30, No. 3

Martino, Lina. 2017. Section 3: Concepts of health and well-being. Accessed at https://www.healthknowledge.org.uk/public-health-textbook/medical-sociology-policy-economics/4a-concepts-health-illness/section2/activity3. Accessed 5.01.2019

McClendon, H. and Buckner E. 2007. Distressing Situations in the Intensive Care Unit. Research Dimension. Lippincott Williams % Wilkins. Vol. 26, No. 5.

Miliken, T., Clements, P., & Tillman, H. 2007. The impact of stress management on nurse productivity and retention. Nursing Economic$, 25(4), 203-210.

Miller J., Fletcher K and Kabat-Zin J. 1995. Three-Year Follow-up and Clinical Implications of a Mindfulness Meditation-Based Stress Reduction Intervention in the Treatment of Anxiety Disorders. General Hospital Psychiatry 17. Elsevier Science Inc. 192-200.

Ministry of Health and Social Affairs (Sosiaali ja Terverysministeriö). Well-being at work. Accessed from https://stm.fi/en/wellbeing-at-work/data-and-research. Accessed 5.1.2019.

Najjar, N., Davis, L. W., Beck-Coon, K., & Doebbeling, C. C. 2009. Compassion fatigue: A review of the research to date and relevance to cancer-care providers. Journal of Health Psychology, 14(2), 267–277. http://dx.doi.org/10.1177/1359105308100211.

Nanamoli, B., and B. T. Bodhi. trans. 2000. The middle length discourses of the Buddha. A translation of the Majjhima Nikaya. 2nd ed. Boston, MA: Wisdom Press.

National Research Council (NRC). 2013. Subjective well-being: measuring happiness, suffering, and other dimensions of experience. In: Stone AA, Machie E, editors. Paper on Measuring Subjective Well-Being in a Policy Framework. Washington, DC: National Academies Press

Nightingale, F. 1860. Notes on nursing: What it is, and what it is not. London: Harrison

Pascual-Leone, A., Dang, N., Cohen, L. G., Brasil-Neto, J. P., Cammarota, A., & Hallett, M. 1995. Modulation of muscle responses evoked by transcranial magnetic stimulation during the acquisition of new fine motor skills. Journal of Neurophysiology, 74, 1037-1037.

Plank, Katarina. 2011. Insikt och närvaro. Akademiska kontemplationer kring buddhism, meditation och mindfulness. Göteborg & Stockholm: Makadam förlag.

Rahula, W. (1959). What the Buddha taught. Oxford: Oneworld.

Ryff CD, Keyes CLM. 1995. The structure of psychological well-being revisited. Journal of Personality and Social Psychology 1995;69(4):719–727.

Segal Z., Williams M. and Teasdale J. 2013. Mindfulness-based cognitive therapy for depression: 2nd edition. The Guilford Press. Pp39

Shauna, S., Astin, J., Bishop S., and Cordova, M. 2015. International Journal of Stress Management. Vol. 12, No. 2.

Sherbourne, C. D., Allen, H., Kamberg, C., & Wells, K. B. 1992. Physical/psychophysiologic symptoms measure. In A. L. Stewart & J. E. Ware (Eds.), Measuring functioning and well-being: The medical outcomes study approach (pp. 260–276). Durham, NC: Duke University Press.

Shimidtts S. 2004. Mindfulness and healing intention: concepts practice and research. J Altern Complem Med;10(suppl1)S7–14.

Stacey, W., Savitri, C., Odell A., Reynolds G., and Su, Y. 2016. Compassion Fatigue, Burnout and Compassion Satisfaction Among Oncology Nurses in the United States and Canada. Oncology Nursing Forum. Vol. 43, No. 4.

Taylor, C. 2007. A Secular Age. Cambridge, MA: Harvard University Press.

TENK. 2012. Responsible conduct of research and procedures for handling allegations of misconduct in Finland. Accessed from https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf. Accessed at 5. 1. 2019

Trousselard M., Steiler D., Claverie D., Canini F. 2014. The history of Mindfulness put to the test of current scientific data: unresolved questions. Encephale-Revue de Psychiatrie Clinique Biologique et Therapeutique, 40(6), 474-480. doi:10.1016/j.encep.2014.08.006

The American Nurse. Cultivating Mindfulness. (2016). Available from www.TheAmericanNurse.org. Accessed 05.12.2018

Työterveyslaitos (TTL). About the Finnish Institute of Occupational Health. Available from https://www.ttl.fi/en/about-us/. Accessed 05.01.2019.

Vernon, C. 2014. Wellbeing. Routledge. Pp3, 6, 8

Watson, Jean. 1985. Nursing: Human Science and Human Care, a Theory of Nursing. Norwalk: Appelton-Century-Crofts, 1985.

Watson, J. 1997. The theory of human caring: Retrospective and prospective. Nursing Science Quarterly, 10(1), 49-52.

Watson, Jean. 1999. Postmodern Nursing and Beyond. London: Harcourt-Brace.

Watson, J. 2005. Caring theory as an ethical guide to administrative and clinical practices. Nursing Administration Quarterly, Vol 30 (1), 48-55.

Watson, Jean. 2010. Core Concepts of Jean Watson's Theory of Human Caring/Caring Science. Watson Caring Science Institute. Available from www.humancaring.org. Accessed 14.04.2018

William J. Mark and Kabat-Zinn J. 2011. Mindfulness: Diverse Perspectives on its Meaning, Origins, and Multiple Applications at the Intersection of Science and Dharma. Taylor and Francis. Contemporary Buddhism Vol. 12, No. 1 .

WHO. 2013. Global health workforce shortage to reach 12.9 million in coming decades Available from http://www.who.int/mediacentre/news/releases/2013/health-workforce-shortage/en/. Accessed 12.09.2018

WHO. 2013. Measurement of and target setting for well-being: an initiative by the WHO Regional Office for Europe. Available from http://www.euro.who.int/__data/assets/pdf_file/0009/181449/e96732.pdf?ua=1. Accessed 05.01.2019

Williams, J.M.G. & Kuyken, W. 2012. Mindfulness-based cognitive therapy: A promising new approach to preventing depressive relapse. British Journal of Psychiatry, 200, 359-360. doi: 10.1192/bjp.bp.111.104745.

Zeller, J.M., & Levin, P. (2013). Mindfulness interventions to reduce stress among nursing personnel: An occupational perspective. *Workplace, Health Place and Safety*, 61(2), 8589.

10 APPENDICES

10.1 List of the Chosen Articles

The 10 articles were chosen for the study based on the inclusion and exclusion criteria.

1. Effectiveness of a mindfulness-based intervention on oncology nurses' burnout and compassion fatigue symptoms: a non-randomized study. (2016). Duarte, Joana ; Pinto-Gouveia, José. Journal's name, date, volume, issue and pages: International Journal of Nursing Studies December 2016, Vol.64, pp.98-107.

2. An on-the-job mindfulness-based intervention for pediatric ICU nurses: A pilot study. (2014). Gauthier, Tina; Grefe, Dagmar; Gold, Jeffrey. Journal's name, date, volume, issue and pages: Journal of Alternative & Complementary Medicine (J ALTERN COMPLEMENT MED), May2014; 20(5): A87-A87. (1p).

3. The effects of mindfulness training program on reducing stress and promoting well-being among nurses in critical care units. (2014). Hee Kim Lan; Subramanian, Pathmawathi; Rahmat, Norsiah; Phang Cheng Kar. Journal's name, date, volume, issue and pages: Australian Journal of Advanced Nursing (AUST J ADV NURS), Mar-May2014; 31(3): 22-31. (10p).

4. Mindfulness-based stress reduction training yields improvements in well-being and rates of perceived nursing errors among hospital nurses. (2018). Daigle, Stephanie, Talbot, France and French, Douglas J. Journal's name, date, volume, issue and pages: Scientific Research: Journal of Advanced Nursing. Oct2018, Vol. 74 Issue 10, p2427-2430. 4p. 1 Chart.

5. Nurses perceived stress and compassion following a mindfulness meditation and self-compassion training. (2017) Mahon Marie, Mee Lorraine, Brett Denise and

Dowling Maura. Journal's name, date, volume, issue and pages Journal of Research in Nursing (J RES NURS), Dec2017; 22(8): 572-583. (12p).

6. Positive Effects of Mindfulness-Based Training on Energy Maintenance and the EEG Correlates of Sustained Attention in a Cohort of Nurses. (2018). Wong K., Teng J., Chee M., Doshi K. and Lim J. Journal's name, date, volume, issue and pages: Frontiers in Human Neuro Science. Volume 12, Article 80.

7. Positive Effects of a Stress Reduction Program Based on Mindfulness Meditation in Brazilian Nursing Professionals: Qualitative and Quantitative Evaluation. (2016). Dos Santos M., Kozasa E., Carmagnani I., Tanaka L., Lacerda S. and Nogueira-Martins L. Journal's name, date, volume, issue and pages: The Journal of Science and Healing. Journal's name, date, volume, issue and pages: March/April 2016 Volume 12 Issue 2, Pages 90-90.

8. Efficacy of mindfulness-based meditation therapy on the sense of coherence and mental health of nurses. (2011). Ando M., Natsume T., Kukihara H., Shibata H., Ito S. Journal's name, date, volume, issue and pages: Scientific Research: An Academic Publisher. Vol.3, No.2, 108-122 (2011).

9. Mindful Meditation: Healing Burnout in Critical Care Nursing. (2008). Journal's name, date, volume, issue and pages: Davies W. Holistic Nursing Practice. January/February 2008.

10. How mindfulness can benefit nursing practice? (2016). Brass E. Journal's name, date, volume, issue and pages: Nursing Times. Vol 112, No 18.

10.2 Appendix II: MINDFULNESS-BASED STRESS REDUCTION (MBSR) STRUCTURE AND METHODS

a) Group Pre-program Orientation Sessions (2.5 hours) followed by a brief individual interview (5-10 minutes)

b) Eight-weekly classes 2.5-3.5 hours in duration

c) An all-day silent retreat during the sixth week of the program (7.5 hrs)

d) "Formal" Mindfulness Meditation Methods:

- Body Scan Meditation - a supine meditation
- Gentle Hatha Yoga - practiced with mindful awareness of the body
- Sitting Meditation - mindfulness of breath, body, feelings, thoughts, emotions, and choiceless awareness
- Walking Meditation

e) "Informal" Mindfulness Meditation Practices (mindfulness in everyday life):

- Awareness of pleasant and unpleasant events
- Awareness of breathing
- Deliberate awareness of routine activities and events such as: eating, weather, driving walking, awareness of interpersonal communications

f) Daily home assignments including a minimum of 45 minutes per day of formal mindfulness practice and 5-15 minutes of informal practice, 6 days per week for the entire duration of the course

g) Individual and group dialogue and inquiry oriented around weekly home assignments including an exploration of hindrances to mindfulness and development and integration of mindfulness-based self-regulatory skills and capacities

h) Incorporation of exit assessment instruments and participant self-evaluation in Class 8

- Total in-class contact: 30+ hours
- Total home assignments: minimum of 42-48 hours
- Total group Orientation Session time: 2.5 hours

Key Characteristics

- A fundamental component of good medical care
- Participants are referred by their physicians or other health care professionals or via self-referral

- Intensive training in mindfulness meditation
- Educational orientation
- Group format - 15-40 participants per class
- Individually tailored instruction
- Experiential, highly participatory format
- Highly challenging and strongly supportive
- Self-responsibility emphasized within the context of a collaborative relationship between participant, MBSR provider, and referring physician or other health care professional
- Array of mindfulness methods to meet individual participant needs and learning styles
- Interactive instructor and patient-initiated dialogue and inquiry intended to explore perceptions, mental and behavioral habits and patterns that maybe inhibiting learning, growth, and healing.

Short-term intervention: MBSR is relatively brief in duration (8 weeks). The structure is intended to foster participant self-regulation and self-reliance

Life-long learning: MBSR is both an immediate and deliberate shift in health orientation and a method for enhancing health and well being across the life span

10.3 Appendix III: Inductive Qualitative Analysis Example

Meaning Unit	Condensed meaning unit, using the words from text	Condensed meaning unit's latent meaning	Codes	Minor Categories	Major Categories
The Sense of Coherence scale has three subdomains that correspond to the sense of comprehensibility, sense of manageability, and sense of meaningfulness// There was a greater increase in SOC scores in the intervention group than in the control group, which indicates the efficacy of mindfulness therapy on the sense of coherence in stress management. The standard SOC score is 54-58, while the scores of the nurses in the present study were 53 in the control group and 52 in the intervention group, indicating that the nurses had a poor ability to cope with stress.	SOC corresponds to the sense of comprehensibility, manageability and meaningfulness. An increase in SOC in the intervention group which indicates the efficacy of mindfulness.	Mindfulness affects the nurses' ability to cope with stress.	MBI, decrease vulnerability to stressful situations	Coping with stress	Physical Health
The data suggest that the high-stress environment in the workplace had adverse cognitive consequences on nurses' cognitive functioning (Shapiro et al., 2005; Yang et al., 2016;	The high-stress environment has consequences on nurses' cognitive function, but mindfulness reversed the negative effects of stress.	MBI improves the nurses' cognitive function	MBI, improves cognition	Cognitive functioning	Psychological Health

Burton et al., 2017), but that mindfulness training mitigated and even reversed the negative effects of the stress.					
Job satisfaction positively correlated with both stress and burnout. One reason may be, nurses lack awareness, develop numbness, have grown accustomed/habituated to the high levels of stress they actually endure on a daily basis, or that PICU nurses choose and thrive to work in a highly stressful environment that is conducive with job satisfaction, but is associated with burnout.// Mindfulness correlated negatively with job satisfaction.	Job satisfaction is positively correlated with stress and burnout. Nurses accustomed to high level of stress on a daily basis and thrives to work in highly stressful environment. Mindfulness correlated negatively with job satisfaction.	Mindfulness reduces stress and burnout which influences job satisfaction	MBI, job satisfaction	Job Satisfaction	Occupational Health
Of the 28.6% of nurses who acknowledged that errors had been a problem for them (8 of 28), 37.5% (N = 3) rated themselves as having had committed fewer errors in the 3 months following treatment. In addition, participants generally provided very positive (8/10 or higher) post-test ratings when assessing the usefulness	Nurses rated themselves having had committed fewer errors. Participants provided positive post-test ratings.	Mindfulness reduces work-related errors	MBI, less errors at work	Attentiveness	

of MBSR at work (N = 21, 75%), at home (N = 23, 82.2%) and in general (N = 24, 85.7%).					
It has been suggested that nurses need to work in a compassionate environment that is conducive to caring (Boorman, 2009) and that mindfulness-based training programmes can result in enhanced quality care for inpatients. // Nurses, and especially oncology nurses, are at a particular risk of developing compassion fatigue, because they constantly witness and contact intense suffering, pain and trauma of others.// We found that nurses in the experimental condition reported a significant reduction in compassion fatigue after the intervention compared with individuals in the comparison condition.	Nurses need to work in a compassionate environment that is conducive to caring and MBI result to enhanced quality of care for inpatients.	MBI enhanced the nurses' patient care	MBI, high quality of care to patients	Patient quality of care	
Findings show that 43%, 82% and 40% of the critical care nurses had increased level of stress, anxiety and depression (i.e. mild to very severe level), respectively. After attending the b-MBCT program, the participants	Nurses had increased level of depression. After attending the b-MBCT program, the participant's level of depression decreased to 19%.	MBI decrease depressive symptoms	MBI, reduce depressive symptoms	Coping with depressive symptoms	Emotional Health

with increased levels of stress, anxiety and depression significantly decreased to 8%, 51% and 19%, respectively.					
Most participants learned something important from the program, made important changes in their lives as a result of being enrolled in the program, changed the way they perceive and respond to stressful situations, as well as the relationship with their thoughts and emotional states.	Being enrolled into the program, changed the way they perceive and respond to stressful situations.	Nurses' realized self-awareness during MBI	Mindfulness, self-awareness	Noticing present thoughts and feelings	Present Moment Awareness
Increasing a nurse's self-compassion by undertaking a mindful compassion programme is proven to be important to nurses' health and their ability to relate to others – a state of inner calm will help them connect more deeply with others (Cullen, 2014).	Nurse's self-compassion by mindful programme is proven to be important to their ability to relate to others-a state of inner calm will help them to connect.	Mindfulness training brings awareness and sensitivity to others	Mindfulness, sensitivity to change	Sensitivity to change and effect to others	Compassion
Most participants reported improvement in their reactivity to inner experience, which is the tendency to allow oneself to experience sensations, feelings and thoughts with	Participants has the tendency to allow oneself to experience sensations, feelings and thoughts with greater responsiveness and openness, without being affected by them.	Mindfulness allows pleasant or unpleasant things be usual	Mindfulness, recognize feelings and letting go	Recognition of feelings and letting go	Acceptance

greater responsiveness and openness, without being affected by them					
D.1 F.7: “After meditation I became better at observing nature, my own being, as well as the importance of working with the body”. D.2F.1: “I had two nights of insomnia, and then began to pay attention to my breathing, to clear my mind, and I was able to sleep.”	Observing nature as well as the importance of working with the body. I began to pay attention to my breathing and clear my mind.	Mindfulness brings open mindedness without judgment	Mindfulness, non-judgment	Observing without judging	Non-judgment