Mindfulness Interventions for Nursing Students: Application of Modelling and Role Modelling Theory

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Abstract

Background: Mindfulness is a technique to increase awareness of the present moment by blocking both past and future thoughts (Kabat-Zinn, 2013). Mindfulness training has shown to decrease stress and anxiety and increase mental acuity of both health care providers and nursing students. However, a typical mindfulness course is taught for one hour over a period of six to eight weeks. This continued time commitment has led to high attrition rates among participants. An abbreviated training and practice sessions, may increase the participation rate. There is also no reported underlying theoretical framework to guide the development of mindfulness training and practice. Therefore the purposes of this paper are to discuss the Theory of Modelling and Role Modelling (MRM) as applied to mindfulness and the merits of abbreviated mindfulness training sessions.
Theoretical Framework> One of the key concepts in the Theory of Modelling and Role Modelling is self-care or the ability to care for oneself. The concept of self-care can be further delineated into self-care knowledge, resources, and actions. These concepts as applied to mindfulness training for nursing students inform that self-care knowledge is the awareness of the amount of stress and need for mindfulness training. Self-care resources are the ability to participate in mindfulness classes, and self-care actions are the execution of the mindfulness techniques.
Preliminary Results: Data from two pilot studies demonstrate that six 10-minute mindfulness classes have decreased nursing students' stress and increased awareness, but did not reach significance. A larger sample size and tighter research controls may contribute to more significant future findings.
Discussion: MRM is a useful theoretical model for understanding and explaining mindfulness training and practice. Abbreviated forms of mindfulness training may lead to nursing students' increased mindfulness participation and practice with decreased levels of stress and augmented daily awareness.

Key Words: Mindfulness, nursing students, Modelling and Role Modelling, nursing theory, stress

The Problem

Mindfulness represents one method of coping with stress. Mindfulness increases awareness of the present moment by blocking past and future thoughts (Kabat-Zinn, 2013). An integrative literature review found that the most effective evidence-based intervention to increase productivity and well-being of health care providers was mindfulness training (Koren & Purohit, 2014). Studies have suggested that mindfulness training may be an effective intervention for nursing students as well (Song & Lindquist, 2015; Spadaro & Hunker, 2016; van der Riet et al. 2015). Typically, mindfulness classes are taught in one-hour practice sessions over a four- to eight-week period, but because of this lengthy time commitment for training and practice, there are high attrition rates in learning to use mindfulness (Koren & Purohit, 2014). Shorter mindfulness training and practice sessions may reduce the attrition rate. However, there is no reported common underlying theoretical framework that provides a basis for the practice of mindfulness or one that links mindfulness to stressors and stress reduction. Modelling and Role Modelling (MRM) nursing theory (Erickson,

Tomlin & Swain, 1983) could provide a foundation. Therefore, the purposes of this paper are to delineate MRM as a theoretical base for mindfulness as well as to delineate the merits of less time-intensive mindfulness training sessions.

Theoretical Foundation

The following describes the linkages between Modelling and Role-Modelling (MRM) nursing theory and mindfulness. MRM theory explains the dynamics of the nurse-patient relationship as well as concepts relevant to human nature, persons and health (Erickson, Tomlin, & Swain, 1983). One of the key concepts is self-care. In MRM, self-care is the ability to care for oneself to promote health by meeting basic human needs including those that facilitate growth and development throughout one's lifetime. Since nurses and nursing students are persons, the concept of self-care applies to both patients and them.

Every person can care for themselves at some level but specific self-care is unique to each individual. Because each person has a unique view of the world, a self-care approach that works for one person might not work for another. For example, running and vigorous workouts can be a significant stress reliever in one person, but increase stress in another. This means that self-care can-not be mandated, but should be tailored to the unique needs and perspectives of each individual.

The concept of self-care has three aspects: (a) self-care knowledge is understanding what one needs to promote health and lifetime growth; (b) self-care resources that can be used for self care are factors external and internal to the individual; and (c) self-care actions is using personal knowledge and resources to care for the self (Erickson, 2006).

Self-care Knowledge: Each person, at some level, is aware of what is needed to care for him/herself and to promote health, growth and development. The level of awareness of self-care knowledge can be obvious to the person. For example, someone who feels overworked and tired might readily know that a feeling of nausea is due to work stress and fatigue. Spending a few minutes without thinking about work and resting will help alleviate the nausea. However, at other times, self-care knowledge might not be as obvious to the person.

For example, it might take a person a period of reflection and self-examination to recognize that a sense of deep sadness is related to the anniversary of a loved one's death.

Self-care Resources: Self-care resources are those persons, things and/or experiences that can be used or accessed to care for ourselves. Self-care resources can be external to an individual or internal to the individual.

External resources: External resources include persons, things or experiences that support an individual's self-care. For example, an individual person who is trusted and closely tied to the individual or an Alcoholics Anonymous support group might help a person dealing with an alcohol addiction. However, others may rely on a professional health care provider, access to a gym, religious representations (e.g., rosary beads or Bible), or a self-help class for this same type of health issue. These examples are all external self-care resources. To be helpful in self-care, the external resource must be meaningful to the individual person in addition to being accessible to meet the personal needs that promote health.

Internal Resource: Internal resources include all bodily functions or organs, physiological systems (e.g., immune system), genetics- or genetic make-up, both positive and negative stored memories, psychosocial traits developed over one's lifetime, and spirituality. Spirituality is defined as having meaning and purpose in life; and is a driving force in decision-making; it is the core of each person's being. It is also a core concept in MRM theory. Just as with external resources, internal resources must be meaningful to and recognized by the individual if they are to be mobilized to meet personal needs that promote health

Self-Care Actions: In MRM theory, *Self-Care Action* is using personal *Self-Care Knowledge* and accessing/mobilizing *Self-Care Resources* (either internal, external or both) to act and take care of oneself. It includes the steps chosen to meet each person's unique and meaningful growth, development and health promotion needs. For one person, running in a race to maintain well-being is an example of a self-care action while for others, taking a warm bath, reading an interesting book, talking to a friend or sleeping can be a self-care action.
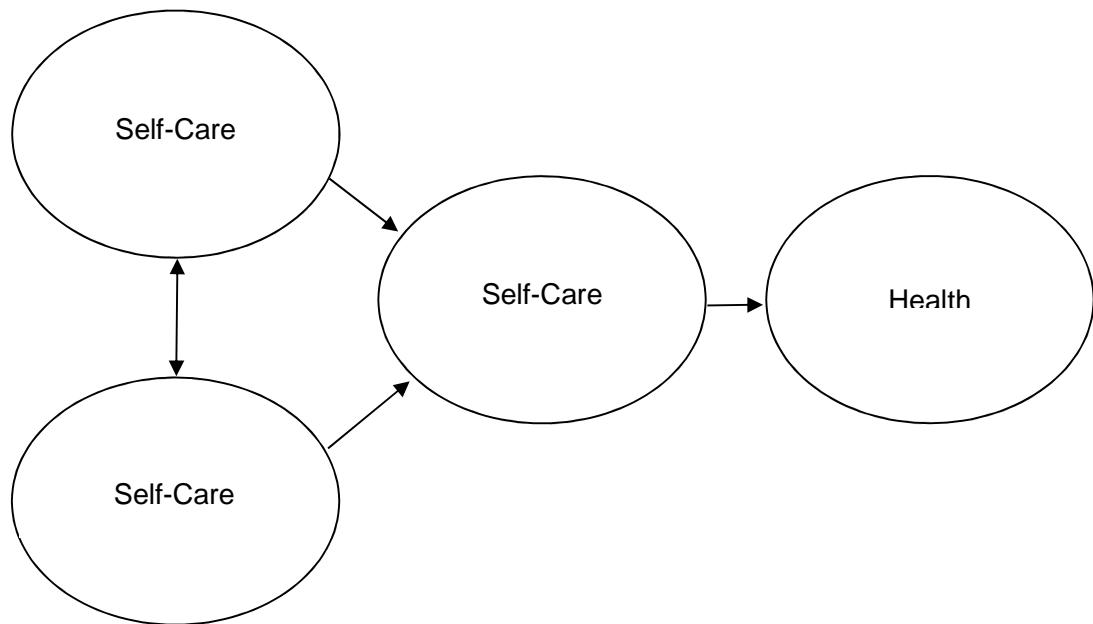
Figure 1. **Self-care model from MRM theory (Erickson et al., 1983) Adapted from Hertz, 1991. (Printed with permission)**

Application of MRM Theory to Mindfulness

The concepts of self-care from the Modelling and Role Modelling theory can be applied to mindfulness training for nursing students. Nursing students report higher levels of stress, anxiety and depression than university students in general or working adults in the same age category (Chernomas & Shapiro, 2013). Furthermore, recent studies have confirmed that nursing students describe their nursing education as stressful, especially time spent in the clinical arena (Moridi, Khaledi, & Valiee, 2014; Watson et al, 2008; Zyga, 2013, Sakellari et al., 2017).

Nursing students, at some level, are aware of the amount of stress and the need to promote optimal health for themselves which is self-care knowledge. The art of implementing mindfulness can be used as a means to reduce stress. When students practice mindfulness they are executing self-care actions most comfortable/useful to them. Mindfulness practice and the use of self-care action can include external self-care resources of

social support from other students and/or cues from others to use mindfulness. Internal self-care resources are mobilized during mindfulness practice and are the physical and mental capacity to implement mindfulness techniques. Mindfulness practices help to reduce stress and increase awareness of the present moment. Therefore, spirituality, the core of holism, may help motivate nursing students to find more meaning and purpose in their lives through mindfulness practice.

Mindfulness as a self-care action helps to reduce stress and increase acuity of the situation. There are numerous mindfulness techniques that can be a part of mindfulness practice: body scan, progressive relaxation, guided imagery, mantra, and mindful eating to help decrease stress. The body scan draws attention and concentrated thought to each specific body part, such the arms legs, back, head, neck, etc. It guides the learner to be more aware of body sensations and feelings. Progressive relaxation invites the learner to flex various groups of body muscles and gradually

release the flexed muscle. This creates more awareness of areas in the body that can harbor stress and tension. During guided imagery, participants are invited to visualize a setting/scene where there is a sense of peace and relaxation. During the imagery, the five senses are awakened to more keenly experience the imagined scene. The mantra exercise invites participants to repeat a favorite phase or short saying that can promote rest and relaxation due to the repetitive nature of the exercise. And finally, mindful eating invites participants to purposefully and thoughtfully chew small pieces of food. These mindfulness techniques help the learners become more aware of their physical bodies through this concentrated thought; and alleviate stress. The mindfulness techniques help the learner concentrate on the present moment and thus promote more engagement in the task at hand. When students engage in these mindfulness techniques, they are engaging in self-care actions.

In summary, engaging in self-care actions of mindfulness is the ability to mobilize internal resources of muscle contraction, disciplined thinking, and external resources of student social support and cues for action. The mindfulness techniques increase awareness and focus attention on the present moments which are self-care actions. When nursing students engage in mindfulness practices they are executing self-care actions. Students are free to choose which mindfulness techniques are most effective in alleviating stress in their lives.

Review of Literature

Mindfulness training among nursing students has shown to decrease stress and anxiety. Sixteen undergraduate nursing students who participated in an eight week mindfulness workshop were assigned to either the mindfulness group or a control group. The mindfulness group demonstrated significantly decreased anxiety levels post-intervention as compared to the control group (Beddoe & Murphy, 2004). Kang, Choi and Ryu

(2009) reported similar findings among 42 students who were randomly assigned to either an eight week mindfulness course or a control group. Mindfulness participants reported a statistically significant decrease in stress and anxiety levels as compared to the control group.

More recently, Song's (2015) randomized control study of 44 nursing students found a statistically significant decrease in depression, anxiety, and stress with the experimental group who participated in mindfulness training compared with the control group who received no intervention. Spadaro and Hunker's (2016) descriptive study of 26 nursing students' experiences with an online meditation intervention found a significant decrease in stress levels after the intervention. Van der Reit et al.'s (2015) qualitative study of 10 nursing students who participated in a mindfulness program stated the program helped them better focus on their own needs and the needs of others.

Most mindfulness classes are conducted during one hour practice sessions for a duration of four to eight week period of time. However, a lack of sufficient time for training and practice commonly leads to attrition in many mindfulness studies (Koren & Purohit, 2014). Shorter mindfulness training and practice sessions may reduce attrition and do not appear to affect outcomes (Carmody & Baer, 2009).

Abbreviated mindfulness programs have begun to show promise. A randomized control study of health care providers enrolled in a brief mindfulness class found a significant decrease in stress and anxiety and increased attributes of mindfulness of the experimental group with little to no change in the control group (Manotas et al. 2014). Similarly Gauthier et al. (2015) found that pediatric intensive care nurses enrolled in a five minute mindfulness class reported a significant decrease in stress at the conclusion of the program and one month later. The question remains, how effective would an abbreviated mindfulness class be for nursing students?
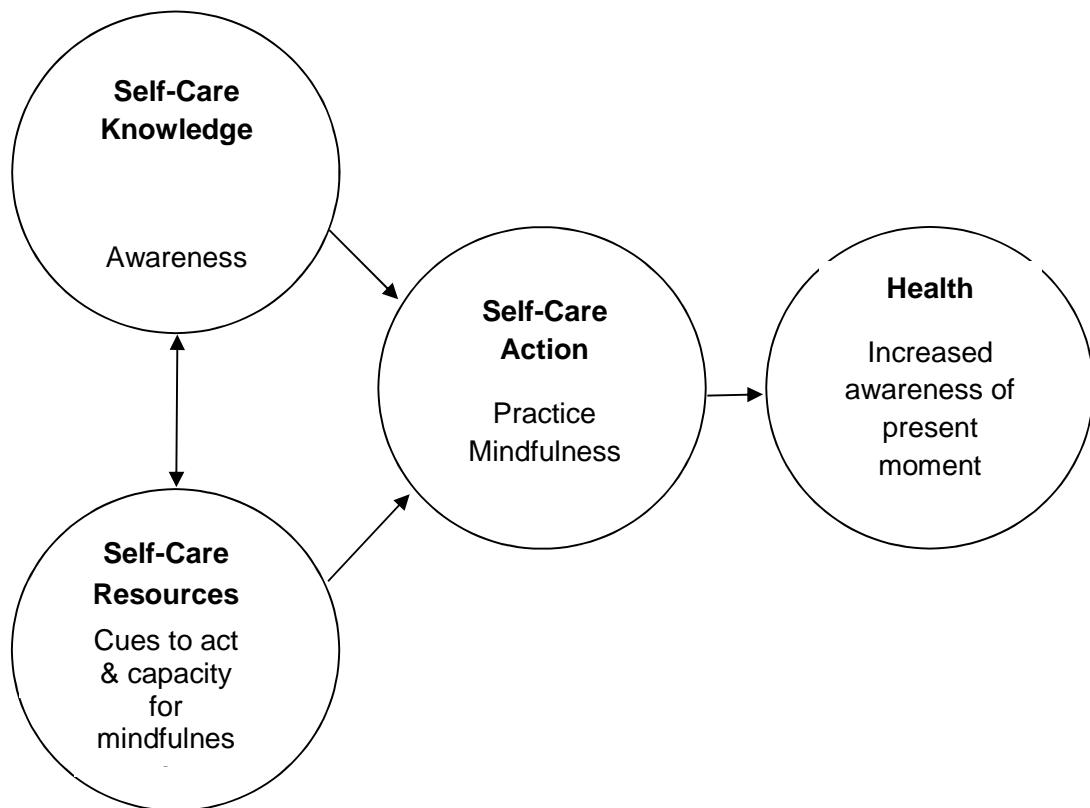
Figure 2. **Self-care model from MRM Theory applied to mindfulness**

Penprase et al. (2015) describe mindfulness training sessions for nursing students and staff nurses. Based on the high attrition level, the authors concluded that five minute interval training promotes better outcomes than longer training periods. Ratanasiripong et al.'s (2015) randomized control study of subjects participating in either biofeedback, mindfulness meditation or no intervention found significant changes in the mindfulness groups' scores of stress and anxiety. One of the noteworthy aspects of the study is the shortened period of instruction for both mindfulness and biofeedback.

There is limited research on the shortened learning period of mindfulness training for both health care providers and nursing students. One of the unique aspects of this discussion is the condensed teaching time for the mindfulness practice among nursing students and a theory based practice.

Preliminary Data

Two separate sets of data suggest that abbreviated mindfulness interventions show promise in decreasing participants' stress and increasing attentiveness. The first was a pilot quasi-experimental design consisting of eight subjects in the experimental group and five in the control group. Both groups completed the Mindfulness Attention Awareness Scale (MAAS), a measure a measure of day-to-day attentiveness; the Perceived Stress Scale (PSS) a measure of thoughts and feelings; and the Self-Compassion Scale (SCS), a measure of how one acts towards self during stressful times. These measures were collected at the beginning and end of a six week period. The

experimental group participated in a 10-minute mindfulness training once a week for six weeks. The participants in the experimental group learned four mindfulness exercises: deep breathing, progressive muscle relaxation, meditation, and mantra. The control group had no intervention. The eight participants' MAAS scores in the experimental group increased, and their PSS scores decreased to a greater extent than the control group, but the scores did not reach significance. The SCS scores showed little change in either group.

A second pilot study was conducted, using the MAAS and PSS tools. All participants completed the MAAS scale and the PSS scale at both the beginning and end of the study. In this quasi-experimental pilot, 32 students were enrolled in the experimental group and 27 in the control group. Like the previous study, the experimental group received five mindfulness interventions for approximately 10 minutes over a period of 11 weeks. The interventions were not taught during consecutive weeks. The control group received no intervention. The experimental group's MAAS scores remained virtually unchanged; however, the control groups' MAAS scores decreased. At the conclusion of the study, analysis of variance demonstrated a statistically significant difference between the experimental and control groups' MAAS scores (F $(1,122)$ = 5.95, p = 0.02). The PSS experimental group's scores decreased during the course of the study; however, the control group PSS scores increased, but did not reach significance.

Discussion

The Theory of Modelling and Role Modelling is a good fit with mindfulness interventions. The theory informs that every person is unique and their self-care needs differ. Thus, a mindfulness intervention that works well for one person, maybe meaningless to another person. It is important to offer mindfulness participants numerous mindfulness techniques and to provide a choice for the participants. The suggested mindfulness techniques provide baseline knowledge for the participants. The participants can build on this knowledge and add more techniques in the future.

For example, mindfulness eating can be expanded to include mindful walking. Yoga classes can be an extension of body scanning and progressive relaxation.

The concepts of self-care knowledge, resources and action help explain and guide the understanding of mindfulness techniques that can be utilized by nursing students. Nursing students have self-care knowledge of the stress in their lives. The nursing students' internal self-care resources of spirituality may motivate them to engage in stress reducing interventions to focus on the present moment and better handle stress. This, in turn, can lead to more meaning and purpose in their life as a nursing student. The external resources are any cues that lead students to the mindfulness classes. Finally, the self-care actions are the initiation of the classes and the practice of the mindfulness techniques.

The nursing literature (Carmody & Baer, 2009; Gauthier et al. 2015; Koren & Purohit, 2014; Manotas et al. 2014; Ratanasiripong et al. 2015) suggests that abbreviated mindfulness interventions maybe as effective as longer periods of training. The shorter training periods promote decreased attrition in class attendance and adherence to practice techniques. The abbreviated techniques are also easily incorporated into the busy lives of nursing students.

These techniques would also be appropriate to teach nursing faculty and practicing nurses. Nurses in all specialty areas, including those in academia, have many demands and could benefit from mindfulness classes.

The data presented in this paper are preliminary, but they suggest that abbreviated teaching sessions maybe effective in promoting mindfulness practice among nursing students. Future research should include a larger sample size using matched subjects.

In summary, as the research on mindfulness moves forward, abbreviated instructional sessions show promise. However, more rigorous research using this abbreviated method is merited. There is also a need to link the practice of mindfulness to theory. The Theory of Modelling and Role-Modelling is a

good fit for guiding research on mindfulness practices.

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