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Kaneisha DeBurgo

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Running Head: AROMATHERAPY STRESS RELIEF FOR NURSES

Stress Relieving Lavender Aromatherapy for Inpatient Nurses

Kaneisha Rae DeBurgo

University of Massachusetts, Amherst

College of Nursing

DNP Project Chair: Dr. Raeann LeBlanc

DNP Project Mentor: Kandace Vieira RN, MSN

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Abstract

Background: Lavender essential oil as a form of aromatherapy is proven to be an effective way to relieve occupational stress among nurses, providing them with a healthy self-care outlet.

Purpose: To decrease the stress levels of inpatient nurses by implementing lavender essential oil aromatherapy as a self-care initiative.

Methods: Willing inpatient Registered Nurses within a fast-paced inpatient telemetry unit were given a vial that contained three drops of Young Living lavender essential oil enclosed within at the beginning of their shifts. The nurses were asked to carry it with them during their eight-hour shifts for three weeks and directly inhale the aroma twice when they perceived stress. A Nursing Stress Scale (NSS) was administered before and after aromatherapy exposure for pre-post comparison to measure the effectiveness of the aromatherapy self-care intervention.

Results: Nine registered nurses out of forty from a telemetry inpatient unit participated in the project. The average Nursing Stress Scale score of the participants prior to the aromatherapy exposure was 83 and the average score after exposure decreased to 75. Eight out of nine nurses (89%) felt stress relief from utilizing aromatherapy within their nursing work shifts over the three-week period. The nurses who used their vials the least, 1-3 times a day, had a lower average post aromatherapy score of 69.5. Those who inhaled their aromatherapy more often during their shift, 3-6 or 6 plus times a day, had higher average post NSS scores of 80, 75 and 71.

Conclusion: Lavender (*Lavandula angustifolia*) essential oil is an effective self-care intervention that lowers stress levels among inpatient nurses.

Keywords: lavender essential oil, aromatherapy, stress relief, nursing stress

Stress Relieving Lavender Aromatherapy for Inpatient Nurses

The profession of nursing continuously presents mental and physical demands that cause increased stress levels among nurses. When there are patient lives at hand, there is no such thing as performing less than your absolute best. Nurses must put their best self forward each and every shift, despite any personal or professional stressors that may be present. According to Parul et al. (2014), the main occupational stressors among inpatient nurses are poor attitudes of doctors, inadequate compensation, busyness of units, and overwhelming workloads. In order for nurses to provide quality care to their patients and mediate these stressors, they must practice adequate self-care. Therefore, stress management interventions should be a standard requirement for employers to provide in order to promote the wellbeing of their nurses. Lavender (*Lavandula angustifolia*) essential oil aromatherapy is an evidence-based intervention for stress relief that would benefit this vulnerable population and would serve as a cost-effective intervention for employers to provide in order to support nurse self-care practices within the workplace.

Background

Essential oils are defined as volatile liquids extracted from shrubs, flowers, trees, plants, bushes, and roots through steam distillation that have the ability to improve mental and physical wellbeing (Life Science, 2016). Pure, therapeutic-grade essential oils without synthetic fragrances or additives have natural chemical constituents that are able to heal the body without the harmful side effects of other stress relief methods. In particular, lavender essential oil has been found to be physically and emotionally calming, relaxing, and balancing with the ability to improve concentration and mental acuity (Life Science, 2016). Therefore, incorporating lavender essential oil into the workplace has the ability to serve as an effective aromatherapy treatment modality for nurses suffering from high occupational stress levels.

According to the American Holistic Nurses Association (2017), nursing burnout is caused by unresolved stress within the workplace, which can lead to bitterness, anger, depression, physical illness, low morale, internalizing, staff turnover, absenteeism, and negative impact within the personal lives of nurses. Pavlos et al. (2016) found that occupational stress among nurses negatively affects their quality of life, which has the potential to affect patient outcomes in a correlational study of 246 nurses working in public and private units. The identified stressors included dealing with deaths, interaction with patients and their families, and disagreements with supervisors (Pavlos, et al., 2016). Young, Duff, and Stanney (2016) have found that when nurse vigilance declines, safety protocols are not followed as strictly and the higher nurse burnout rates, the higher infection rates are. Therefore, solutions to this problem need to be implemented and employers who facilitate effective self-care interventions, such as lavender essential oil aromatherapy within the workplace, can help alleviate the high stress levels that nurses face on a daily basis.

Problem Statement

Risk of high occupational stress levels among inpatient nurses is indicated by lower quality of life affecting their quality of patient care and results from lack of self-care interventions, such as lavender essential oil aromatherapy. A solution for this problem includes providing this population of nurses with lavender essential oil to inhale throughout their shifts in order to decrease their stress levels, which is reflected by reduced Nursing Stress Scale scores.

Organizational “Gap” Analysis of Project Site

There is ongoing evidence-based research and best-practice initiatives regarding essential oils and their numerous health benefits. The general consensus currently stresses importance of proper education and safety. Therefore, a gap within this organization is the lack of knowledge

about their recommended usage. A strategy for this was to provide educational handouts to all nurses participating in the project about the Young Living lavender essential oil being used. Educational areas included were a product summary, benefits, features, suggested use, background, directions, cautions, and ingredient specification.

An additional gap in practice is that essential oils utilized aromatically must be pure, therapeutic-grade oils from a reputable company that are steam distilled directly from plants without additives. A strategy for this is to eliminate use of poor-quality essential oils that are produced with chemical solvents and synthetic fragrances, as they can cause irritation and lack the vitality that pure plant oils carry (PDQ Integrative, Alternative, and Complementary Therapies Editorial Board, 2005). Barriers to implementation include lack of knowledge amongst those who are inspecting and ensuring quality oil usage because they must be able to differentiate between poor and high quality essential oil brands. There may be false advertising amongst essential oil companies as some claim to be natural and pure, but further research proves differently. The lavender essential oil utilized within this project was from the reputable company Young Living Essential Oils who takes pride in their seed to seal promise that guarantees authenticity. The company partners with SCS Global Services who are experts in sustainability, environmental certification, developmental standards, and source quality, which ensures quality and safety within this project (Young Living Essential Oils, 2018).

Review of the Literature

A comprehensive search of the literature for essential oil benefits evidence included the following databases: CINAHL, PubMed, and Cochrane Library due to the most relevant search results. The following Medical Subject Headings (MeSH) terms were used within all three databases: “lavender essential oil” and “stress”, “aromatherapy” and “stress”, “essential oil

benefits”, and “lavender essential oil”. Inclusion criteria consisted of evidence-based research, English language, peer-reviewed, full-text, and non full-text. No publication year restriction was utilized within this search due to the limited evidence-based research available on this topic, as it is an evolving practice with great innovative potential. The search yielded 108 articles in total and 10 qualitative articles were selected because they showed the stress relieving effect of lavender essential oil among different populations. The three main categories found within the research of the positive evidence-based benefits of lavender essential oil included five studies among stressed patients, two with nurses, and two using nursing students. Finally, there was one study that looked at the chemical makeup of lavender oil and how it has the ability to relieve stress scientifically.

Lopez, Nielsen, Solas, Ramirez, and Jager (2017) conducted an experimental study to support the mechanism behind lavender essential oils being known to relieve stress. They utilized molecular mechanisms and evaluated the effect of the oil on MAO-A, SERT, GABA_A, and NMDA receptors of the central nervous system among rats (Lopez et al., 2017). In conclusion, they found that the anxiolytic and stress relieving effects of lavender essential oil are due to an antagonism on the NMDA-receptor and SERT inhibition (Lopez et al., 2017). Although this experiment has not yet been trialed with human brains, it is considered an accurate neurological representation of the therapeutic effects of lavender that enables its use as a form of stress relieving aromatherapy. This is level II, grade B evidence with fairly definitive conclusions and recommendations based on the findings.

The studies that included patients as a measure of stress relief included Mesri, Hosseini, Heydarifar, Mirizadeh, and Forozanmeher (2017) utilizing the anxiety relieving benefit of lavender essential oil among 64 pre-op patients with an average anxiety score of 46-56, where

half of the patients inhaled the oil for 20 minutes prior to surgery and the other half inhaled distilled water as a comparison. In conclusion, Mesri et al. (2017) found that those exposed to the oil pre-operatively had a reduction of pain and anxiety scores in the recovery room. Therefore, lavender essential oil is again proven to be effective in stressor reduction. This was level II, grade A evidence due to its consistent and generalizable results. Similarly, Karadag, Samancioglu, Ozden, and Bakir (2017) conducted a randomized controlled study where lavender essential oil was utilized among 60 coronary ICU patients in order to decrease anxiety and promote sleep quality. The patients were exposed to the oil via inhalation for a 15-day period and were given the Pittsburgh Sleep Quality Index (PSQI) and the Beck Anxiety Inventory (BAI) pre and post exposure. The results of PSQI and BAI scores of the patients in the control and intervention groups concluded that lavender essential oil did in fact increase the quality of the patients' sleep and reduced the level of their anxiety (Karadag, Samancioglu, Ozden, & Bakir, 2017). This was level II, grade A evidence as well due to its definitive conclusions and consistent recommendations. Additionally, Kowalski (2002) also looked at lavender increasing the quality of life of patients, which took place among 17 cancer hospice patients who were exposed to humidified lavender essential oil and their pain, anxiety, depression, and sense of well-being were measured on three different days before and after an hour of aromatherapy. Results of the study concluded that compared to the control session, pain and anxiety were improved after lavender inhalation (Kowalski, 2002). This was level II, grade B evidence due to the reasonably consistent results and fairly definitive conclusions. Bikmoradi et al. (2015) conducted a single-blinded randomized controlled trial with 60 patients who had a coronary artery bypass graft, splitting them into a control and aromatherapy group. Stress and vital signs were measured and compared between groups, finding that those who inhaled the lavender essential oil had lower

systolic blood pressures (Bikmoradi et al., 2002). This was level II, grade B evidence due to its fairly definitive conclusions. Finally, Kim, Kim, Yeo, Hong, Lee, and Jeon (2011) conducted a study to investigate the potential of lavender essential oil in reducing bispectral index (BIS) values, stress, and pain of needle insertions among 30 healthy volunteers. Oxygen masks coated with lavender essential oil were given to the experimental group and the control group had regular masks for five-minute intervals. In conclusion, stress and BIS values were significantly reduced compared to the control group proving that lavender essential oil is an effective agent to utilize for stress relief. This was level II, grade A evidence as there was sufficient sample size for the study design and consistent recommendations and conclusions could be made.

The studies utilizing nursing staff members within their studies included Johnson et al. (2017), who conducted a quasi-experimental design study using lavender essential oils within a group of staff members on trauma intensive care units as a form of stress relief. They created their own personal survey to assess stress levels pre and post diffusion of lavender essential oil. The diffusers in this experiment were run 24 hours a day for one month and found that the staff members' stress occurrence went from feeling stressed half of the time to once in awhile (Johnson et al., 2017). Therefore, the authors are able to confirm that lavender essential oil is an effective method to decrease stress within hospital environments. This is level II, grade B evidence as they produced reasonably consistent results. Yang, Wu, Wang, Chen, and Pan (2015) also explored the use of lavender essential oils among health care workers. 100 female nurses were exposed to lavender aromatherapy for eight weeks and were given the Pittsburgh Sleep Quality Index (PSQI) pre and post intervention. Based on the scores, the nurses slept better and felt less stressed, which contributes to better quality of care. This is level II, grade B evidence due to its good quality with reasonably consistent results and some control. According to Yang,

Wu, Wang, and Chen (2015), their study “demonstrated that lavender inhalation may have a persistent and short-term effect on HRV with an increase in parasympathetic modulation that results in improved sleep quality in female nurses” (p. 99).

Finally, the nursing student category included McCaffrey, Thomas, and Kinzelman (2009), who found that the use of lavender essential oil sachets among graduate nursing students helped with their test anxiety by reducing test anxiety measure scores, personal feedback, and decreased pulse rates. This was level II, grade B evidence where fairly definitive conclusions could be drawn. Another study was conducted to determine how lavender essential oil can help the anxiety of first-year nursing students. Gnatta, Dornellas, and Da Silva (2011) had a group of students who received lavender aromatherapy and a group who received a placebo, which found a reduction of -11.80 in the mean anxiety scale scores for those who were exposed to the oil. This was level II, grade A evidence due to its consistent, generalizable results and definitive conclusions were able to be made.

This literature review revealed multiple studies that provide evidence on the benefits of lavender essential oil as a stress relief modality. All literature reviewed supports the translation of lavender aromatherapy into self-care practice to benefit nurses both physically and mentally with no noted side effects. The levels of the included evidence were evaluated by utilizing the Johns Hopkins Nursing EBP Evidence Rating Scale (Newhouse, Dearholt, Poe, Pugh, & White, 2005), which found them to be Level II quasi-experimental studies.

Evidence Based Practice: Verification of Chosen Option

Based on the review of the literature, the evidence-based practice intervention implemented was the use of lavender essential oil as a form of stress relieving aromatherapy for vulnerable inpatient nurses. There are several documented scenarios within the review of

literature where patients, nurses, and nursing students have benefited from the stress relieving properties that lavender essential oils entail, which verifies the chosen option.

Theoretical Framework/Evidence Based Practice Model

The theoretical framework that underpins this aromatherapy stress relief project among nurses is Martha Rogers' Science of Unitary Human Beings (Appendix A). Rogers (1971) believed that humans are not and cannot be considered separate identities with their environment and they must interact with each other to reach optimal function. Therefore, the environment and human beings create an energy field. This phenomenon is present within essential oil aromatherapy because they achieve their therapeutic value by carrying frequencies from steam-distilled plants and fight free radicals that attempt to compromise their environmental integrity (Life Science, 2016). This theoretical framework is used to guide this DNP project by continuing Martha Rogers' passion for using science to improve the wellbeing of humankind. The Young Living Lavender essential oil used in this project contains a frequency of 118 MHz, which creates a positive healing environment. A healing environment utilizing aromatherapy for inpatient nurses will improve their mind, body, and soul connection to their surroundings, which has the ability to enhance their ability to care for their patients with higher quality.

Goals, Objectives and Expected Outcomes

The objective of this DNP project was to decrease the stressful energy surrounding nurses within their inpatient unit by means of lavender essential oil and improve their holistic wellbeing. The main goal was to decrease Nursing Stress Scale (NSS) scores by at least 20% after three weeks of aromatherapy utilization. The expected outcome was that lavender essential oil aromatherapy will prove to be an effective stress management intervention to promote among inpatient nurses as evidenced by 20% decreased NSS scores. The vials of lavender essential oil

were expected to be used at least 5 times during each shift over the three-week period. Other objectives included improvement in staff morale over the implementation period and to have at least 10-15 nurses be engaged in the project during the execution phases.

Project Design

The quality improvement project design implemented a practice intervention focused on promoting the wellbeing of stressed inpatient nurses. The method used to obtain the desired data consisted of quantitative measurement. Nursing Stress Scales distributed among the participants produced pre and post aromatherapy stress scores, which allowed for general conclusions to be drawn from the sample. Therefore, this approach was practical and had the potential to lead to a credible solution to the proposed problem of lack of self-care interventions for stressed inpatient nurses.

Project Site and Population

The setting where the project took place was a 25-bed telemetry inpatient unit within a full-service acute care Catholic hospital located in the city of Fall River, Massachusetts. The patient population is comprised of mostly Portuguese Americans and the facility offers both medical and surgical services. The participants included both male and female Registered Nurses that are employed on the telemetry inpatient unit. The recruitment process included sending all nurses an e-mail explaining the Quality Improvement project being proposed and asking for volunteers to participate. The main inclusion criteria was that the nurses selected must be scheduled to work at least three eight-hour shifts within the data collection weeks. All experience levels, shifts, and genders were included. The only nurses who were excluded were those working less than the desired shift amount during the study. The main stakeholders were the

unit's clinical leader and hospital administration, as this project was an excellent initiative to boost nurse morale within their team of employees.

The project site is organized with a 4:1 patient-nurse ratio on first and second shift and a 5:1 patient-nurse ratio on third shift. The main stressor identified by the clinical leader of the unit is high patient turnover rates due to frequent discharges, admissions, non-telemetry patients transferring off, and level of care upgrades. Other stressors that are present include cardiac emergencies and telemetry alarm fatigue. The challenging demands of this setting make the eligible nurses ideal candidates for lavender essential oil aromatherapy as a self-care intervention.

Ethical Considerations/Protection of Human Subjects

The University of Massachusetts, Amherst (UMass) Human Research Protection Office (HRPO) evaluated the DNP project and made the determination that the proposed project does not meet the definition of human subject research under federal regulations. Therefore, a submission of an application to the UMass Amherst Institutional Review Board was not required.

The next step of project implementation included presenting the project idea to the unit of interest's clinical leader and the associate chief nursing officer, who were the main stakeholders. Once they approved, the author was then directed to the hospital organization's Institutional Review Board (IRB) manager and Research Administration Director for further direction on the approval process. The Steward Health Care Quality Improvement Application was completed and submitted for IRB review with approval signatures from the hospital's Division Chief, Department Chair, Chief Medical Officer, and the Chief Nursing Officer. Also required for submission was the author's resume, CITI training certificates, the Nursing Stress Scale questionnaire, and the QI information sheet that was to be given to the nurse participants. After

reviewing submitted information, the Director of Research Administration determined that the project did not need a Student Research and Data Sharing Agreement since only de-identified data was to be shared during data analysis phase.

Additional ethical considerations included respecting the beliefs and opinions of nurses about the efficacy of aromatherapy. All views were respected and no judgment was casted on nurses who chose not to participate. The privacy of participants was protected by abiding by HIPAA rules and regulations that medical professionals are accustomed to following in practice. All electronic files containing de-identified data have been kept on a password-protected device that is only accessible to the project coordinator.

Due to the pure, therapeutic-grade essential oil utilized within this project, there were no major health risk factors to be cautious of. The risk of adverse reactions was low and the only advisory was that everyone's senses are different and some people may perceive the direct inhalation of lavender essential oil as being too strong or potent. Allergic reactions or sensitivities to the aroma could cause adverse symptoms in participants. Therefore, participants were encouraged to hold the bottles up to an arm length away and use their discretion to avoid any type of sensory adverse reaction such as headache, sneezing, etc. (Life Science, 2016).

Implementation

Willing inpatient Registered Nurses, within a high-stress inpatient telemetry unit were given a vial that contained three drops of Young Living Lavender essential oil enclosed within at the beginning of their shifts. The nurses were asked to carry it with them during their eight-hour shifts for three weeks and directly inhale the aroma twice when they felt stressed. The Nursing Stress Scale (NSS) was administered to the group of nurses before the project launch and their answers were based on their prior stressful experiences on the unit. After three weeks of lavender

essential oil aromatherapy, the same nurses completed the NSS again in order to assess the effectiveness of the stress relief intervention and the quality of their mental wellbeing.

Measurement Instruments

In order to measure the outcomes of this DNP Project the following instrument was used: The Nursing Stress Scale (NSS), which is a tool developed by Pamela Gray-Toft and James G. Anderson to measure stress among nurses. It consists of 40 items that measure the frequency of stress experienced by nurses within a hospital environment (Gray-Toft & Anderson, 1981). According to Gray-Toft and Anderson (1981), “validity was determined by correlating the total score from the Nursing Stress Scale with measures of trait anxiety, job satisfaction, and nursing turnover hypothesized to be related to stress” (p. 11). Also, the strength of this established tool proves to be reliable by test-retest reliability and four measures of internal consistency (Gray-Toft & Anderson, 1981). Permission for use of the scale within this project has been granted by James G. Anderson. See Appendix D.

Data Collection Procedures

Pre-intervention. The plan for implementation included receiving permission to implement this proposed project within the desired telemetry inpatient hospital unit. An opportunity for self-care improvement had been recognized among a stressful work environment and this practice intervention had the potential to improve participants’ wellbeing. Lavender essential oil has been effective in decreasing stress for the proposal author, who also works on the pilot telemetry unit. The positive results of this small-scale study inspired the initiative to review the evidence and take action to implement a unit wide self-care project. The schedules of the volunteer participants were reviewed to ensure that they were present for at least three eight-hour shifts during the selected three weeks of implementation and data collection. The nurses

were given a copy of the Nursing Stress Scale and were expected to complete it before the intervention began.

Intervention. Telemetry inpatient nurses were given a vial with three drops of Young Living lavender essential oil enclosed at the beginning of their shifts. They were instructed to take two deep and direct inhalations of the oil's aroma throughout their shifts whenever they perceived stress during a three-week period. There were no specific regulations as to what qualifies as a stressor to the nurses. They were asked to keep track of how often they used their vial.

Post-intervention. The nurse participants were again given a copy of the Nursing Stress Scale and were expected to complete it based on their stress levels during the weeks of working with lavender essential aromatherapy incorporated into their shifts. The proposal author then calculated the NSS score averages from pre and post intervention and analyzed the data patterns. There was a Likert-scale question added to the post-assessment survey, which asked how often the vials were utilized during the nurses' shifts, and open-ended question allowing for any comments or feedback, and a yes/no question asking the nurses if they felt stress relief from utilizing aromatherapy within their work shifts.

Data Analysis

The quantitative data inferentially collected from the Nursing Stress Scales were entered into a Microsoft Excel spreadsheet. The pre and post intervention scores were totaled and averaged in order to compute a percentage change in scores. A Likert scale question was included in the post-intervention survey to assess how often the lavender aromatherapy vial was utilized during their shifts as well as an open-ended section for additional feedback.

Results

Nine registered nurses out of 40 (23%) from a telemetry inpatient unit participated in the project. The average Nursing Stress Scale score of the participants prior to the aromatherapy exposure was 83 and the average score after exposure was 75. The higher the NSS score, the higher level of stress that was perceived on a scale from 1 (never) to 4 (very frequently). Therefore, the scores and stress levels decreased among the participants after Lavender aromatherapy was implemented. 8 out of 9 nurses (89%) felt stress relief from utilizing aromatherapy within their nursing work shifts over the three-week period. 4 nurses utilized/inhaled their vial with Lavender essential oil an average of 1-3 times per shift and 4 nurses used theirs 3-6 times per shift. 1 nurse utilized their vial more than 6 times per shift. The nurses who used their vials the least, 1-3 times a day, had a lower average post aromatherapy score of 69.5. Those who inhaled their aromatherapy more often during their shift, 3-6 or 6 plus times a day, had higher average post NSS scores of 80, 75 and 71. Six nurses provided positive feedback, two did not comment, and one nurse felt anxious when smelling Lavender outside of work. See Appendix C for individual randomized scores.

Outcomes/Discussion

The objective of this DNP project to decrease the stressful energy surrounding nurses within their inpatient unit by means of lavender essential oil and improve their holistic wellbeing was met. The main goal to decrease Nursing Stress Scale scores by at least 20% after three weeks of aromatherapy utilization was not met exactly, but they did decrease by 9.63%. This project and its successful outcome have been selected to be a part of the hospital's Pathway to Excellence Journey designated by the American Nurses Credentialing Center (ANCC), as it exemplifies a wellness initiative implemented based on the results of assessing the wellness of its

employee within the Elements of Performance (EOP) 5.9a and 5.9b. Also, the Lavender essential oil aromatherapy vials are going to be given to all hospital staff within the hospital in order to provide a widespread self-care technique to practice within their work environments. The financial cost of the materials needed for the lavender essential oil aromatherapy project was minimal and covered by the proposal author due to the expected benefit of the intervention. As demonstrated within the literature review and the findings of this project, Lavender essential oil relieves stress with no harmful side effects. Evidence-based research has also found it to have the ability to decrease anxiety, promote sleep quality, and decrease pain. There is tremendous potential within the healthcare field for both patients and clinicians to enhance their overall quality of wellbeing with aromatherapy implementation.

Martha Rogers' Science of Unitary Human Beings theoretical framework was executed within this project by creating a positive energy field that allowed the nurse participants' stress levels to decrease with the aid of Lavender essential oil frequencies. In assessing pre-test responses, it was alarming to see how high the starting perceived stress scores on the telemetry unit were. The lowest stress score possible on the scale is a 40, and the average starting score was more than double at 83. Therefore, it is clear that this population suffers from occupational stress and needed a self-care intervention in order to improve themselves personally and professionally.

The main limitation within this project was that the Nursing Stress Scale surveys were collected randomly before and after the aromatherapy intervention. Therefore, comparisons of each individual nurses' responses were not able to be made. Given the small sample size, it would have been more effective to evaluate the increase or decrease of stress scores from each nurse rather than generalizing the totals as a group. A future recommendation would be to

provide participants with two Nursing Stress Scales, one labeled for before and one for after the aromatherapy, and then have them submit the two together for more substantial data analysis.

Conclusion

In conclusion, the goal of this DNP project was to implement lavender essential oil aromatherapy as a proven and effective solution to the lack of self-care interventions problem among stressed inpatient nurses. The research evidence presented within this project further supports the initiative to utilize the therapeutic properties of essential oils as a means to decrease stress. The telemetry unit selected has significant identified stressors that have the ability to negatively impact the wellbeing of its nurses. Therefore, the implementation of this DNP project was of great benefit to this population. Although the focus of this project was within acute care, aromatherapy may be an appropriate intervention for other specialties where nurses need occupational stress relief and can be implemented in additional settings as a recommendation.

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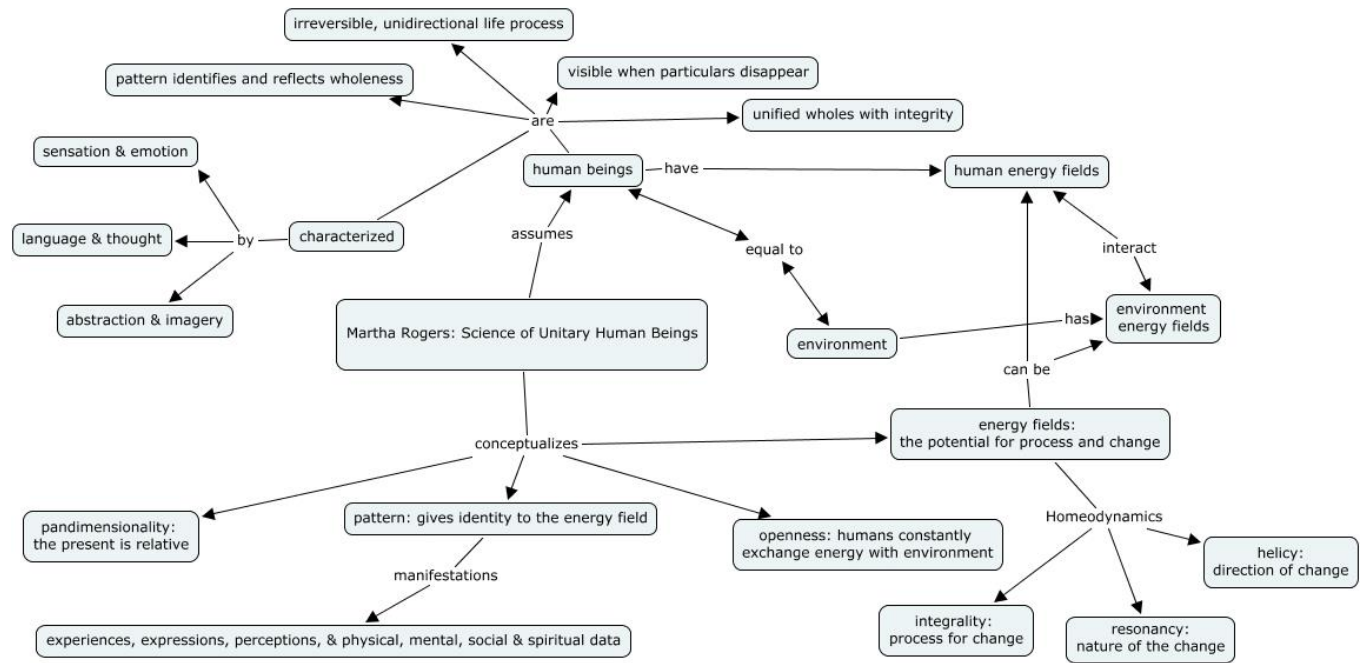
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Appendix A

Martha Rogers' Science of Unitary Human Beings Theory



Retrieved from

http://maaz.ihmc.us/rid=1221614164849_213122046_8214/martha%20rogers.cmap

Appendix B**Approval for Use of Nursing Stress Scale by Author**

Anderson, James G



to me

Mar 29 [View details](#)

Kaneisha, you have our permission to use the attached Nursing Stress Scale in your research. Best wishes.

James G. Anderson, Ph.D.

Professor of Medical Sociology

Professor of Health Communication

Fellow American College of Medical Informatics

Fellow Center for Education and Research in Information Assurance and Security

Purdue University

Stone Hall, Room 353

700 W. State Street

West Lafayette, IN 47907-1476

[765-494-4668](tel:765-494-4668) FAX: [765-496-1476](tel:765-496-1476)

Andersonj@purdue.edu

Web.ics.purdue.edu/~janders1

Appendix C

Data

Table 1	
Pre vs. Post Aromatherapy Exposure	
Nursing Stress Scale Scores	
<u>Pre-Exposure</u>	<u>Post-Exposure</u>
77	82
64	56
67	75
99	71
79	81
86	85
73	81
110	62
92	79
TOTAL = 747	TOTAL = 672
AVERAGE = 83	AVERAGE = 75

*The higher NSS score, the higher level of stress perceived